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IN CENTRAL AND EASTERN EUROPE

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EDITORIAL

This latest (17th) volume from the series entitled *Europa XXI* – as issued by the Institute of Geography and Spatial Organisation of the Polish Academy of Sciences and the Polish Geographical Society – comprises 15 studies prepared by 22 authors from different disciplines. Overall, it is concerned with transformations in the rural areas of Poland, Slovakia, the Czech Republic, Ukraine, Hungary, Romania and Bulgaria. The time frame of the studies presented is most often of between 10 and 20 years, this linking up with the systemic changes and consequent introduction of market economy principles into the region in the early 1990s.

The studies included here may be assigned to one or other of 3 topic groups. The first set of works involves analyses of the differences to the transformation processes ongoing in different types of rural area, while the second deals with the changes of this type taking place within protected areas, and hence in connection with sustainable development. The third group in turn takes in issues of the development of new functions and differences in industrial potential in selected countries and regions of the EU.

A very interesting study within the first group is that by P. Hurbánek, who offers an in-depth review of definitions and methods of research along the rural-urban continuum that are available in today's world literature. Empirical material is then used for areas of Slovakia differing in terms of structure and land cover, the aim being to identify model areas on the basis of two classic point pattern analysis methods, i.e. k-th order nearest neighbour and Ripley's K

Two further papers in the same group (i.e. those by R. Perlín and A. Šimčíkova from the Czech Republic and K. Czapiewski) describe methods by which to seek out and analyse areas of success anywhere in the countryside. In the opinion of the last of the author's mentioned, the concept of the area of success is close to that determined by the concept of sustainable development.

The results of the work done by T. Kovács point to a close dependent relationship between economic (business) development and the initiatives and creativity local authorities prove capable of. The author documents this view by reference to the results of fieldwork carried out in three selected rural areas in Hungary.

A. Vaishar sees opportunities for near-border rural areas of the Czech Republic in the development of non-agricultural functions as part of multifunctional development in the countryside. The author at the same time indicates those functions that have a chance of developing in given areas.

The utilisation and role of SAPARD in the development of Bulgaria's rural areas is in turn the subject of the analysis conducted by M. Ilieva.

The issues of landscape and cultural heritage are studied by a team of Czech authors (Z. Kučera, S. Kuldová and P. Chromý). They point to marked differentiation, as well to the fact that the matters in question are of importance, not only as the subjects for scientific research, but also in respect of their being one basis by which decisions can be planned and taken in economic practice.

B. Duray (Hungary) seeks to study spatial conflicts arising from changes in land use in near-border areas of the South Great Plain Region. This is achieved through the application of

a multidimensional model that – in that author’s opinion – provides for a better understanding of the scale and dynamics to changes taking place, as well as pointing to the development of best practices in planning proposals.

The study by V. Yarovy, G. Fischer and T. Ermolieva represents an example of the analysis of land prices as a mechanism by which to plan for the sustainable development of land use in Ukraine.

The role of National Parks as institutions in the development of areas lagging behind in Hungary is addressed by A.D. Kovács in her work. At one point, the author claims (perhaps even too boldly) that environmental problems of the given area might be solved were the National Park to be regarded as the leading factor in regional development.

The processes of transformation taking place in the Bucharest metropolitan area in respect of the environment are the subject of analysis for I. Grigorescu.

The third subject group of papers comprises 4 such. The first of these (by authors T. Rachwał, K. Wiedermann and W. Kilar) concerns disparities in industrial potential in different EU member states (at NUTS-1 level), with particular account being taken of the Polish regions. As their measure of potential, the authors chose data on employment, gross added value and changes in industrial activity in given regions.

The subject for analysis from B. Dumitrescu is provided by the current trends as regards changes in "industrial parks" located adjacent to selected industrial cities in Romania. The author sees the parks as centres for economic activation of the areas in which they are located.

The two last studies in the group have concerned themselves with the locating of foreign computer businesses in Poland (G. Micek), as well as the activity being engaged in and role played by local authorities when it comes to their attempts to attract new investment into their areas (W. Jarczewski).

Finally, and overall, it is worth stressing the high value of the scientific and cognitive work that forms the basis of this volume’s content, on account of the fact that the subject matter presented remains very much up-to-date, and is closely linked to the processes of transformation ongoing for 10-20 years now in the Central European region.

Roman Kulikowski

SPATIAL CHANGES IN DIFFERENT TYPES OF RURAL AREAS

RECENT DEVELOPMENTS IN DEFINITIONS OF RURALITY/URBANITY FOCUS ON SPATIAL ASPECT AND LAND COVER COMPOSITION AND CONFIGURATION

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Abstract. The main objectives of this contribution are (1) to give a brief overview of the directions along, which new alternative definitions of rurality/urbanity, assessments of their intensity and delineations of the respective areas are being developed, (2) to suggest possible improvements that might be considered in the future, especially in terms of accounting not only for spatial composition component, but also spatial configuration component of settlement system concentration, and (3) to present an exploratory analysis of settlement system spatial configuration at multiple scales in eight model areas in Slovakia based on two classic point pattern analysis methods, i.e. k-th order nearest neighbour index and Ripley's K function.

Key words: rural, urban, settlement, land use, land cover, definition, spatial configuration and concentration, morphological and morphometrical analysis, landscape metrics

OVERVIEW

The definition of the term 'rurality'/'urbanity', similarly as 'peripherality'/'centrality' and 'settlement concentration', and also the delineations of areas with their populations/societies that could be described as 'rural' more than 'urban', 'peripheral' more than 'central' and 'with small settlement concentration' more than 'with large settlement concentration' have been long debated topics in many disciplines including geography, rural, urban, regional and environmental studies, landscape ecology, regional science, economy, sociology and others. Recently, they have been intensively discussed also outside (the academic core of) these disciplines, especially in rural, urban and regional planning and policies, whose effectiveness is largely determined by the correctness and accuracy of the policy target (i.e. rural, urban and peripheral) area delineation.

Definitions of rural areas can be (1) administrative, (2) conceptual or (3) policy related (Copus 2003). (1) Administrative definitions are country-specific, usually conceive of rural as the residual after urban is defined, which is often done based on statutory criteria. (2) Conceptual definitions can be divided into two main categories based on whether they favour (2.1) spatial, sometimes called structural properties (2.1.1) population and settlement density characteristics based on population data and/or land use/cover data, and (2.1.2) relative-location / isolation / accessibility / peripherality characteristics) or (2.2) non-spatial, also called functional properties (demographical, social, cultural, economic and ecological characteristics) of the given area. (3) Policy related definitions evolve together with the policy themes of focus and their main objectives. For example, the European Union (EU) rural development policy in its current form has evolved as part of the historical development of the Common Agricultural Policy (CAP) from an agricultural structures' policy dealing with the structural problems of the farm sector to a policy looking at the wider needs of rural areas, more recently taking great account of environmental considerations (in agreement with Agenda 2000). This evolution is reflected in the transition of the rural area definition approach from (3.1) merely sectoral – using indicators such as share of agriculture on total employment and GDP, agricultural unemployment, farmer age structure, farm size structure, etc. (i.e. non-spatial from the conceptual viewpoint) – through (3.2) sectoral-territorial to (3.3) merely territorial (i.e. spatial from the conceptual viewpoint).

The latter is exemplified by the methodology of Organisation for Economic Cooperation and Development (OECD) (OECD 1994), which has become the only commonly internationally accepted definition of rural areas or at least the one that has been consistently used not only by OECD, but also by the European Commission (EC). It identifies local areas (municipalities or communes, i.e. NUTS5) as rural if their population densities are below 150 inhabitants / km². At regional level (NUTS 3), it distinguishes predominantly rural (with over 50 %), significantly rural (with 15 to 50 %) and predominantly urban regions (with less than 15 % of the total population of the region living in rural communes). The term rural is thus conceptualised as “a territorial or spatial concept, not restricted to any particular use of land, degree of economic health, or an economic concept” (OECD 1994).

Because the OECD methodology is considered as imperfectly reflecting the rural character of areas (cf. EC DG AGRI 2006, CEU 2006), and because the EU intensifies its effort to implement sustainable economic and social development of rural areas by integrating environmental concerns into its agricultural policy (as mentioned above), several initiatives have been launched in the EC (e.g. at its Directorates-General for Agriculture and Rural Development – DG AGRI, Regional Policy – DG REGIO, Environment – DG ENV, Research – DG RTD, Joint Research Centre – DG JRC, and Eurostat) and European Environment Agency (EEA) with the intention to develop an alternative methodology.

To explain the link between rurality and the environment, a distinction is usually made between the various functions of agriculture: (1) the function of agricultural production (primary production), (2) the productive function of open space, used to designate the effects which produce benefits for third parties, and (3) the function of production of services, including the farmer's traditional work on the environment (maintenance of hedgerows, footpaths, grazing of fire-breaks, maintenance of seasonal watercourses and minor drainage works, etc.), on or beyond the holding. Economic pressures have generally led farmers to cut back or

even abandon the last two of these, which correspond to services to society (Barthelemy and Vidal 1999). Therefore, the improvement of environment and countryside through support for land management has become one of the three major objectives of the EU rural development policy in 2007-2013 (CEU 2006, CEC 2004a).

With the call for sustainable development, there has been a growing need for data on the state and dynamics of environment that would enable monitoring of processes and evaluation of policy impacts, so that more effective and efficient policies for the future could be developed. Special attention has been given to spatial data (cf. Weber and Hall 2001). As a result, several datasets have been prepared. Recently, the Corine Land Cover (CLC) 1990 and 2000 database, produced within the Corine programme (Coordination of Information on the Environment) and I&CLC 2000 project (Image 2000 and CLC 2000), has seemed to be the most frequently used of them for the purposes of rural, urban and regional development policies addressing such sustainability issues as e.g. regulation of urban sprawl or the improvement of environment and countryside objective mentioned above. It has also become the main source of data in the initiatives for alternative rural/urban area definition development. Some of them are described in a greater detail below.

The first described initiative is the one carried out by DG AGRI (CEC 2004b, Vard et al. 2005). The methodology starts with reclassification of all the 44 CLC classes into the following main categories: forestry (F), agricultural area (A), natural area (N), artificial area (U), inland water (W), and sea (S). While the first three of them are considered to be 'rural' and the fourth one 'non-rural', the character of the inland water is considered to be mixed 'rural – non-rural'. Because one of the conditions for the methodology is to have to be able to determine the rurality of each local area (LAU 2 formerly known as NUTS 5, i.e. municipality or commune) at the end of the process, each of the 100 x 100 m pixels – carrying information about its affiliation to one of the main categories – is then appointed to a commune based on the pixel centre location. A commune is considered to be rural, if, generally, at least 90 % of its area is formed by pixels of 'rural' land cover categories, or, more precisely, the following holds true:
$$[(F + A + N + 0,5 W) / (F + A + N + U + 0,5 W)] \geq 90$$

Another methodology, called harmonised typology of urban-rural Europe, was developed within European Spatial Planning Observation Network (ESPON) Project 1.1.2, Urban-rural Relations in Europe (Bengs and Schmidt-Thomé 2005). As it combines the population density and land cover approach, two dimensions are identified: the degree of urban influence and the degree of human intervention. While, with respect to the former, all NUTS 3 regions with population density above European average and/or those, whose leading urban centres have been labelled Metropolitan European Growth Area (according to Functional Urban Area ranking in ESPON Project 1.1.1 from Nordregio), are classified as being under high urban influence, all the others are classified as being under low urban influence. Within the second dimension, based on the share of three main CLC categories (artificial surfaces, agricultural land, residual land), three classes are distinguished. High urban intervention corresponds to the situations, where the share of artificial surfaces (and possibly one of the two other land cover categories) is above European average. Medium human intervention equals the cases, where the share of agricultural land (and possibly the share of residual land cover) is above European average. Low human intervention concerns all cases, where only the share of residual land cover is above European average. According to the authors, this methodology could

be also applied at different scales, e.g. with NUTS5 values being compared with national (i.e. NUTS0) averages, although, more testing needs to be done along this direction.

Another major initiative based on CLC database has been pursued at European Topic Centre on Terrestrial Environment (ETC-TE) (Milego 2007), which is part of the European Environmental Information and Observation Network (Eionet), a collaborative network of the EEA. As opposed to the DG AGRI methodology, this one is focused on the urban part of the rural-urban settlement spectrum, particularly it delineates Urban Morphological Zones (UMZs). An UMZ is defined as a set of urban areas laying less than 200 m apart, while these urban areas are identified from land cover classes contributing to the urban tissue and function. The CLC classes used to build the UMZ dataset are the following ones:

1. 111 continuous urban fabric, 112 discontinuous urban fabric, 121 industrial or commercial units and 141 green urban areas are considered to be the core classes.

2. 123 port areas, 124 airports and 142 sport and leisure facilities are also considered, if they are neighbours to at least one of the core classes, together with which they form so called enlarged core classes.

3. 122 road and rail networks and 511 water courses are merged to the enlarged core classes, if they are neighbours to at least one of the enlarged core classes. They are cut by a 300 m buffer to prevent merging all UMZs together via linear features such as motorways or wide rivers.

4. 311, 312, 313, 322, 323 and 324, i.e. forests and scrub classes are added, if they are completely within the classes merged together up to this point.

Next, through the expansion of the rasterised pre-UMZs by 1 pixel (i.e. 100m) and their subsequent shrinking by the same value, the UMZ 200 m definition criterion is applied. Doing so, urban areas lying less than 200 m apart become connected, while all others remain unchanged. The methodology proceeds by intersecting the UMZ polygons with JRC's 2001 Population density grid (Gallego and Peedell 2001, Gallego 2006) to obtain a population figure within each UMZ.

At the moment, the most promising strand of research in this area is being developed by the last mentioned author, which not only considers settlement density characteristics, but also population density characteristics and some relative-location characteristics (Gallego 2005, Bengs and Schmidt-Thomé 2005, p. 294). Since, it is quite complex and still in progress, it is not described here in detail. However, according to one of the last working versions of this methodology (Gallego 2005), it classifies nearly 108000 communes into three major categories (urban, semi-urban, and rural) on the basis of their position relative to urban agglomerations, which are identified from population density grid derived from commune population data and CLC data. It takes into account such characteristics as e.g. the percentage of the territory of a commune in an urban agglomeration and the peripherality of the commune with respect to the most influent agglomeration (using a gravitational attraction indicator). Other, similar recent developments incorporating relative-location characteristics are briefly mentioned in Ratering, Gallego and Dusart (2006) and Ratering (2007).

While interesting and inspiring work has been done within these initiatives, there are still several issues that need to be addressed in the process of development of an advanced alternative rural/urban area definition. For example, according to several methodologies described above, some small communes with very small territories may be classified as urban just because

of the large share of built-up area their total area, while some major communes, i.e. cities with large territories may be erroneously classified as rural just because of the small share of built-up area on their total area. This relates to the issues of scale and the modifiable areal unit problem (MAUP). Because there are considerable differences in the size of communes across Europe, the rurality/urbanity at different locations is measured at different scales, which considerably influences the results. Therefore, before assigning the information on land cover composition to communes, moving window analysis should be applied to land cover data (cf. Wirthmann 2006), which would assure measuring rurality/urbanity at the same scale across the whole area.

A crucial improvement of the methodologies for evaluation of rurality/urbanity on the basis of settlement density characteristics mentioned above, though, is based in accounting not only for spatial composition component, but also for spatial configuration component of land cover spatial structure or, more specifically, of settlement system concentration (Hurbánek 2005, Hurbánek in print). This could be done for example by using different types of landscape metrics (cf. McGarigal et al. 2002), also called spatial (pattern) metrics, again at the same scale across the whole area, as e.g. in Steinnocher et al. (2005, p. 188-189), where a simple fragmentation indicator of the ratio between the actual border length of built-up area patches and their minimum possible border length is used. The question that remains, though, is what should be the size of the moving window, in which spatial composition and spatial configuration indicators would be calculated, i.e. what should be the scale of rurality/urbanity assessment?

And one more note on scale, this time with respect to the relationship between the scale of available data and the scale of the analysed phenomenon. According to Bengs and Schmidt-Thomé (2005), if the degree of human intervention, i.e. the share of artificial surfaces on total land cover is considerably higher than population density would indicate, this could be perceived as an ecological indicator, which places regions with higher share of artificial surfaces per capita in an unfavourable position and should initiate new policies for a more prudent land management. They go further by claiming that “a high share of artificial surfaces also indicates a high share of discontinuous urban land, which indicates urban sprawl” (Bengs and Schmidt-Thomé 2005, p. 21). However, the scale of discontinuity (fragmentation or dispersion) of artificial surfaces is crucial here. For example, if two different hypothetical regions named A and B with identical values of total areas (e.g. 1000 km²), population densities (e.g. 100 inhabitants/km²) and real shares of artificial surfaces (e.g. 5 %) have different spatial configuration of these surfaces, then the shares of artificial surfaces in CLC may appear different (due to the fact that the minimum mapping unit is 25 ha, cf. Steinnocher et al. 2005, p. 187) – e.g. 2 % in the region A with artificial surfaces dispersed at a very fine scale (let say the scale of individual family houses that is not captured by CLC) and 5 % in the region B with all artificial surfaces clumped together (representing a prudent land management example with minimum urban sprawl) – and therefore the region A with seemingly smaller share of artificial surfaces per capita would be mistakenly appraised favourably compared to the region B (although in fact A has greater artificial surfaces dispersion than B, which indicates that A has either more rural character or more urban sprawl, depending on the overall character of spatial configuration of artificial surfaces and the intensity of its dispersion at different scales).

STUDY AREAS

To analyse the spatial configuration component of a settlement system at a continuum of scales, k -th order nearest neighbour index and Ripley's K function are applied to incomplete irregular grids of points representing spatial elements of built-up area patches in eight different circle model areas in Slovakia with a 10 km radius: Detva – DT, Čadca – CA, Myjava – MY, Svidník – SK, Senica – SE, Šaľa – SA, Banská Bystrica – BB, Bratislava – BA (Figure 1). These working names of the model areas are chosen according to the names of the counties, in which they are located or with which they considerably overlap.

While the first six of them have mostly rural character (DT and SA include no commune with city status, CA, SK and SE include one such a commune – Turzovka, Svidník and Šaštín-Stráže respectively, and MY includes two such communes – Myjava a Brezová pod Bradlom), the last two of them have more or less urban character. The rural model areas are listed in the order according to the ascending mean surface area of built-up area patches, which agrees perfectly also with the order according to the descending share of individual built-up objects on total built-up surface area in each model area (Table 1, rows 8 and 9). While the settlement systems of the first half of the rural model areas have dispersed character, those of the other half of the rural model areas have compact character. Within this classification, though, SK is quite special in that it is dominated by a settlement system of compact character, but considering the mean surface area of built-up area patches (Table 1, rows 7 and 8) it resembles the model areas with dispersed settlement system character more than the others.

As far as possible, the following criteria have been taken into account, when selecting each of the model areas: the settlement system has a relatively homogenous character, the mean surface area of built-up area patches is as close as possible to the modal surface area of built-up area patches, most of the built-up area patches have a similar form (shape), the spatial arrangement of the built-up area patches in the given model area is relatively uniform and does not have nodal character at the scale of the model area extent. The reason for application of these criteria was to facilitate the final interpretation of analysis results. However, the ability to adhere to these criteria in each of the model areas was quite limited. This task was especially difficult to fulfil in the two cases of urban model areas, since there are just a few large urban areas in Slovakia; this is also why their character is more urban-suburban than purely urban. One more condition was to have the built-up area gravity centre as close as possible to the model area centre. This condition as well as the choice of circle form for model areas relates to the data assumptions of some of the methods used in the analysis, especially the one for edge effect correction.

The objective of the analysis of k -th order nearest neighbour index and Ripley's K function is to assess clustering or dispersion of points representing spatial elements of built-up area patches in each of the model areas at a continuum of scales. Because the notion of scale does not imply a cartographic scale, but a spatial reference framework, in which settlement system is being assessed (and in which processes and factors of its genesis and development work), and the extent of which may be represented for example by the radius of a circle with surface area equal the surface area of the respective spatial reference framework area, the term small scale is used here to refer to small spatial reference framework area and the term large scale is used to refer to large spatial reference framework area.

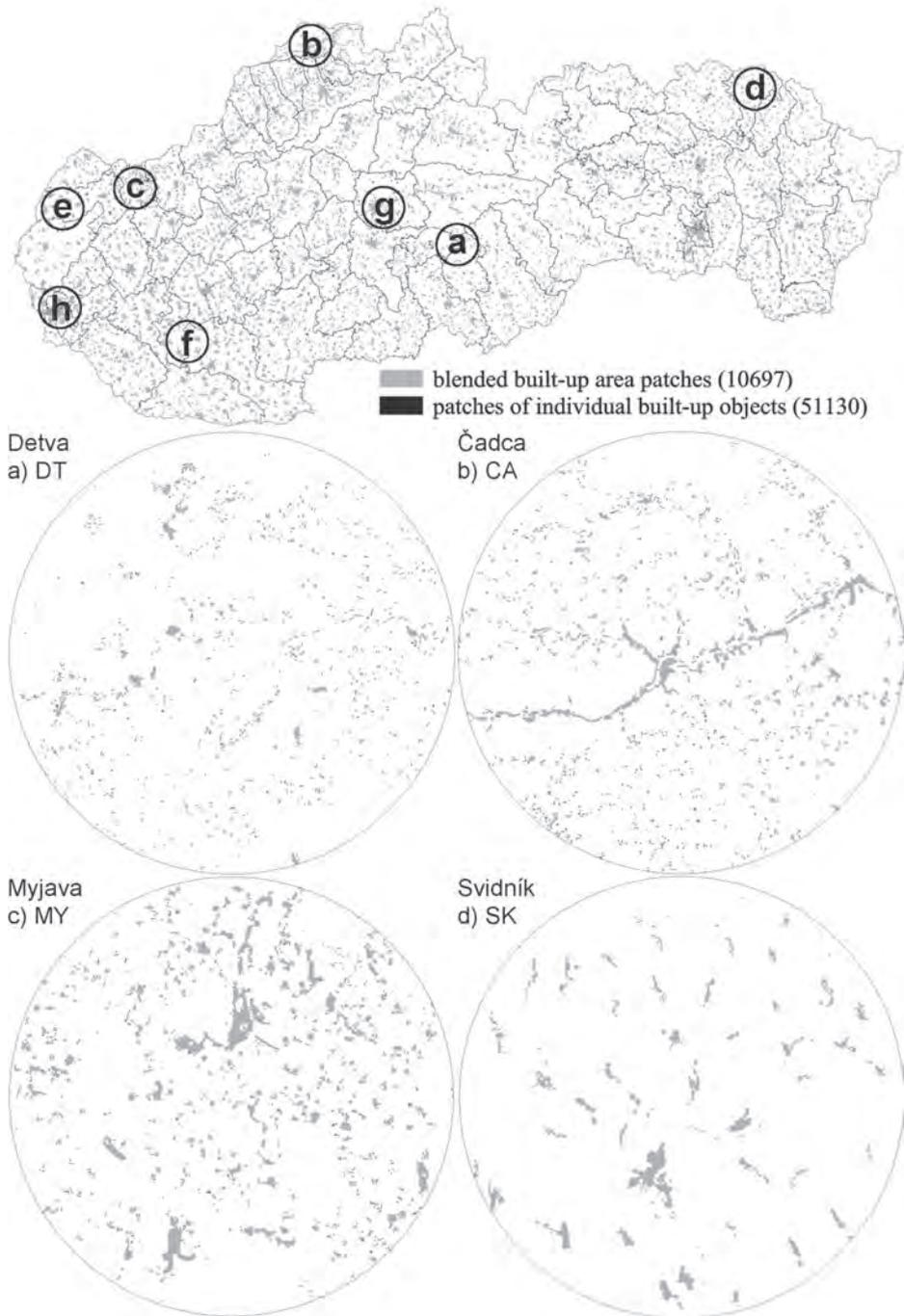


Figure 1. Built-up area patches in Slovakia and in eight circle model areas with 10 km radius. (County boundaries are shown just for orientation in the map.) Source: ÚGKK SR 2005

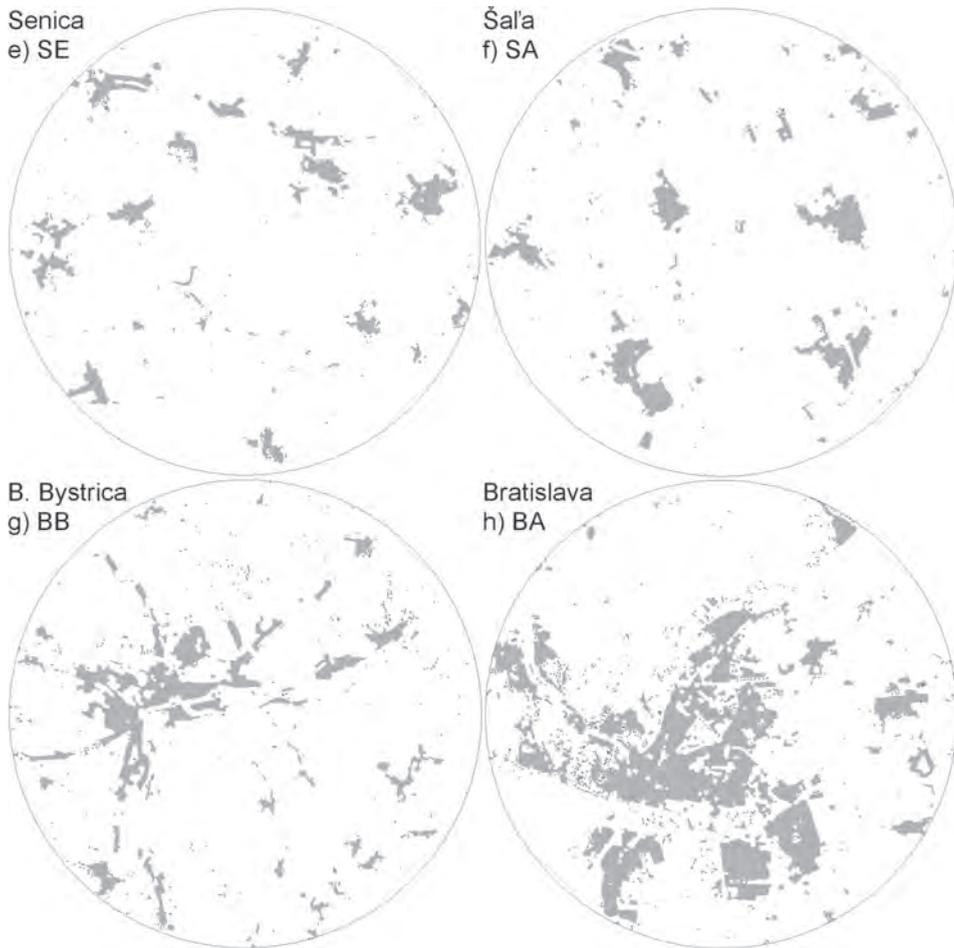


Figure 1. (continued)

DATA

The data used in this analysis come from the layer called Settlements of the Continuous Vector Map SVM 50 of Slovakia (ÚGKK SR 2005), which is based on the Base Map of the Slovak Republic 1:50000 map sheets. This layer consists of 105399 polygons of three different types: built-up area blocks (52189), and built-up area blocks with recreation housing (971), and individual built-up objects (52239; with standard rectangular form of 25 x 50 m, i.e. 0,5 x 1,0 mm at scale 1:50000, but various orientation). Because these source data have been originally produced by digitizing paper maps, they still preserve some of the characteristics inherent to paper maps. Exaggeration of some of the objects on a map and generalization of others are examples of such characteristics. In this case, a problem arises due to the exaggeration of the width of the roads in built-up areas, which divides a continuous built-up area patch into numerous built-up area blocks. For the purposes of this study, it was decided to eliminate this 'unwanted heritage' by applying so called 'blending procedure'

Table 1

Model Areas	Detva	Čadca	Myjava	Svidník	Senica	Šaľa	B.Bystrica	Bratislava
Number of polygons IBOpol	1 018	1 143	1 053	214	246	178	397	779
Number of polygons BBAPpol	52	220	280	86	55	66	85	135
Number of polygons BAPpol	1 070	1 363	1 333	300	301	244	482	914
Number of points BBAPp	747	3 041	5 746	2 800	5 843	7 038	9 028	21 071
Number of points BAPp	1 765	4 184	6 799	3 014	6 089	7 216	9 425	21 850
Mean area (ha) BBAPma	3,5953	3,4431	5,1232	8,1711	26,6263	26,6381	26,5457	39,0584
Mean area (ha) BAPma	0,2936	0,6606	1,1749	2,4315	4,9674	7,2966	4,7843	5,8756
Share on total area (%) IBOsta	40,50	15,87	8,40	3,67	2,06	1,25	2,15	1,81
Share on total area (%) BBAPsta	59,50	84,13	91,60	96,33	97,94	98,75	97,85	98,19
Total area (ha) BAPta	314,20	900,35	1566,12	729,46	1495,20	1780,36	2306,01	5370,26
$k_{\max} = 0,025 N$	44,13	104,60	169,98	75,35	152,23	180,40	235,63	546,25
NND_{\max} (m)	1 228	1 344	1 337	1 074	721	799	1 127	1 159

IBO – individual built-up objects (IBOpol=IBOp, IBOma=0,125ha), BBAP – blended built-up area patches, BAP – built-up area patches (IBO + BBAP), NND_{\max} – mean k_{\max} -th order nearest neighbour distance, k_{\max} – maximum recommended order to be used in k-th order nearest neighbour index analysis (Levin 2004)

(developed in Hurbánek 2003) to the polygons of the first two types, i.e. all the built-up area blocks (Figure 2). First, a buffer is made around each of the polygons representing built-up area blocks. The size of the buffer is determined on the basis of the ‘maximum width’ of the roads on the original 1:50000 source paper maps. Because this ‘maximum width’ is estimated to be about 3 mm on the paper map, which correspond to about 150 m in reality, the size of the buffer is determined as one half of this value, i.e. 75 m. This ensures an overlap of the buffers of the built-up area blocks, which were originally separated by a symbol of a road less than 3 mm wide (Figure 2b). The overlapping buffered objects are transformed into a single object (Figure 2c). An ‘inside buffer’ of 75 m is then ‘subtracted’ from all the objects, to which an outside buffer of 75 m was previously added (Figure 2d). As a result, all the separate built-up area blocks, which seemingly looked like a cluster of built-up area blocks at the beginning (Figure 2a), are now part of a single blended continuous built-up area patch (Figure 2e), which better represents reality especially with respect to the number of actual built-up area patches and with minimum changes to their sizes and forms. Thus, the number of 53160 built-up area blocks decreases to the number of 10697 blended built-up area patches. Because, in some cases there is a change of the extent of built-up area where there is an individual built-up

object according to SVM 50, some of the 10697 blended built-up area patches overlap completely or partially with 1109 individual built-up objects (2.12 % out of the original total number of 52239 individual built-up objects in SVM 50), which are located either much closer than 75 m from some of the original unblended built-up area blocks or (more frequently) in between two such blocks that are up to 150 m apart (see one of the five individual built-up objects in Figure 2d). These 1109 individual built-up objects are therefore removed (see only four individual built-up objects left in Figure 2e), leaving thus 61827 built-up area patches in the database for further analysis, where 51130 of them represents individual built-up objects and 10697 of them represents blended built-up area patches.

The next procedure in data pre-processing is the transformation of these areal vector data into point vector data, i.e. incomplete irregular point grid. First, the whole area of Slovakia is covered by a regular point grid with its points forming corners of squares with 50 m sides that are parallel to the x and y axes of S-JTSK coordination system. The value of 50 m is used as a compromise between accuracy and extensive computational demandingness. Then, those points, which are not located within any of the blended built-up area patches, are removed. Finally, the centroids of the built-up area patches representing individual built-up objects are added to the grid (Figure 2f).

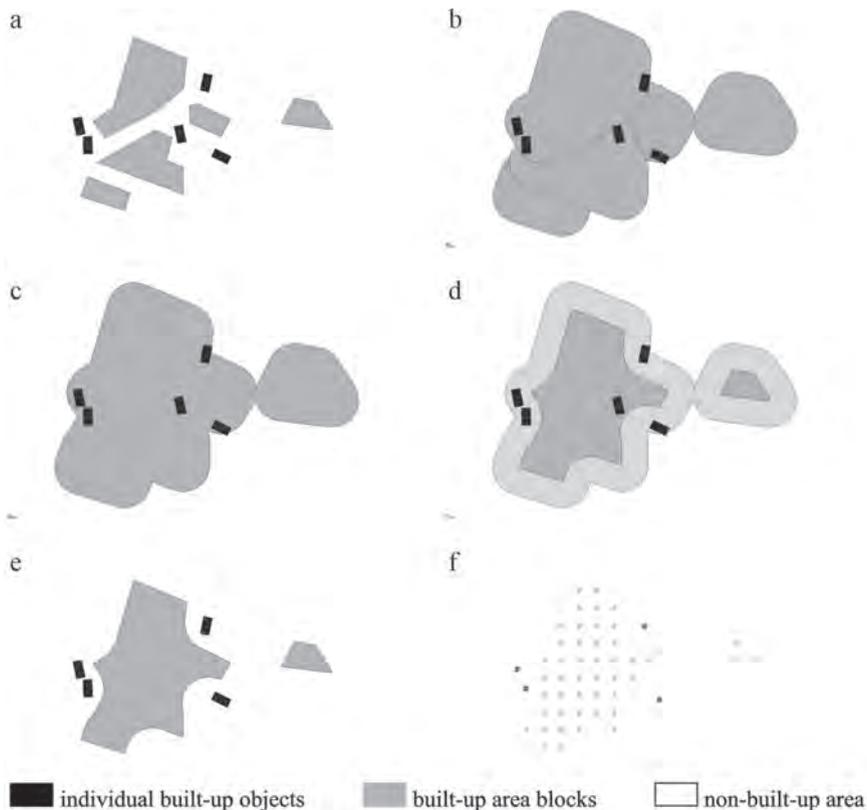


Figure 2. Blending procedure (a-e) and transformation of areal vector data into incomplete irregular point grid (e-f)

NEAREST NEIGHBOUR INDEX OF K-TH ORDER

Nearest neighbour index (NNI) is the ratio of the mean of distances between each point and its nearest neighbour (NND) and the theoretically expected value of this mean under the condition that the distribution of points in the grid is completely spatially random (NND). The smaller is this ratio and the further it is from value 1 downwards, the greater is the clustering of points. The greater is this ratio and the further it is from value 1 upwards, the greater is the dispersion of points. In a similar way, the NNI can be computed for 2nd, 3rd, 4th and higher order, generally k-th order neighbours (cf. Clark and Evans 1954; Boots and Getis 1988; Cressie 1993; Levin 2004).

The choice of the maximum k value is up to the researcher, however, with growing k value the potential for bias from edge effects also increases. This effect is based on the fact that the nearest neighbour of a point occurring near the study area border may actually have its nearest neighbour on the other side of the border. However, because of unavailability of data from outside the study area, the distance to it needs to be replaced by the distance to the nearest neighbour from within the study area. Thus, the NNI value is overestimated. Several correction methods of this edge effect are known. In the one applied in CrimeStat (Levin 2004), the software used for this analysis, in the case the distance of a point to its nearest neighbour from within the study area is greater than the distance of that point to the study area border, the former is replaced by the latter. Conversely, this correction method underestimates the NNI value.

Although only the first order NNI resulting values are tested for statistical significance ($p \leq 0,0001$ in all model areas), all of them represent quite interesting and sound assessment of the character of the spatial configuration of settlement system configuration at different scales (Figure 3). To facilitate mutual comparisons among different model areas, it is useful to analyse NNI not only with respect to the k value but also to the respective NND value (Figure 4). This is because NND of the k-th order for a certain value of k in different model areas represents different spatial scales, e.g. for $k = 100$ NND varies from 420 m in BA, where the point density is the highest, up to 2058 m in DT, where it is the smallest.

It is apparent from both figures that for the small k values and also in small scales (except the NND up to about 70 m, where the NNI values are overestimated thanks to the methodology of grid generation, specifically owing to the regular spatial arrangement of points representing blended built-up area patches), in which the bias due to the edge effect or its imperfect correction is the smallest (Levin (2004) recommends to consider only the NNI values for $k \leq k_{max}$, where $k_{max} = 0.025 N$, while N is the number of points in the study area, see Table 1, row 12), three distinct groups of model areas – reflecting their different settlement system character – are formed: dispersed rural type with the smallest clustering (DT, CA, MY), compact rural type with the greatest clustering (SK, SE, SA), and urban type with intermediate clustering (BB, BA). Although the last type does not achieve the greatest clustering as hypothesised at the very beginning, this can be explained by the above mentioned unsatisfactory fulfilment of the criterion of homogeneity, where not only urban but also suburban or urban-rural-fringe settlement (often significantly dispersed, especially in non-flat terrain) is included within both urban model areas, which pushes the originally expected minimum NNI values upwards into intermediate position compared to the other two types. It is also apparent that the curve of SK is closest out of the three curves of the second type to the curves of the first type, and that with

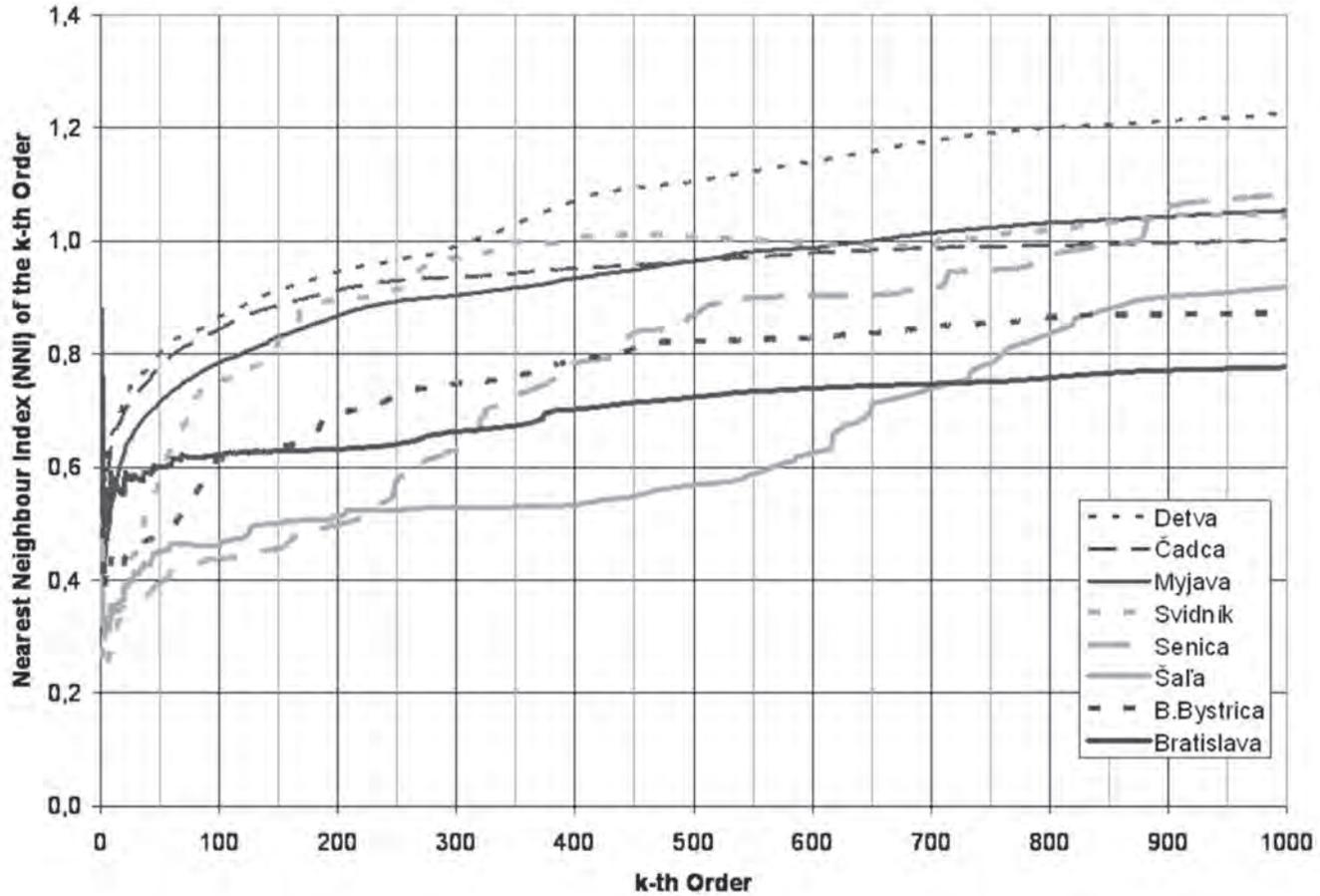


Figure 3. The relationship between the k-th order nearest neighbour index and the k-th order in the incomplete irregular point grids of the individual model areas

growing scale first the curve of SE and then also the curve of SA approach the curves of the first type, which is in agreement with the order according to the ascending mean surface area of built-up area patches and the order according to the descending share of individual built-up objects on total built-up surface area in each model area.

RIPLEY'S K FUNCTION

If a circle with radius r is drawn in a study area of surface area A with a point grid of N points with completely spatially random point pattern, then the theoretically expected number of points in this circle is $(\pi r^2 N/A)$. Therefore, if the experimentally computed mean value of point occurrence frequencies in circles of the given radius r drawn around each point of the grid is greater (smaller) than the theoretically expected value, then this means that the study area point grid at the scale given by r is on average denser (thinner) than theoretically expected under complete spatial randomness. Similarly as in the case of the values of order k at NNI, different values of radius r can be used (cf. Ripley 1981; Boots & Getis 1988; Cressie 1993; Levin 2004).

The advantage of the Ripley's statistic compared to NNI is that the scale is determined as if cumulatively for all values of order k up to the given r , and not only for a single value of order k , resulting in smoother curves free of 'accidental' influences. Moreover, the edge effect correction method for Ripley's statistic used by CrimeStat is much more effective. Again though, as its effectiveness declines (and its bias rises) with the increasing scale of analysis (similarly as in the case of NNI), Levin (2004) recommends to consider only the values of Ripley's statistic at small scales with $r \leq (A0,5 / 3)$, i.e. $r \leq 5908$ m (which is still larger than in the case of NNI – compare with k_{max} and NND_{max} in Table 1, row 13). However, the relatively high values of this statistic especially at large scales may be resulting not only from the bias caused by the edge effect and its correction, but also from the global level clustering, sometimes called nodality or centre-periphery character of the model area settlement system. This is why one of the criteria for model area selection was to avoid nodal character of built-up area patches at the scale of the model area extent.

If no edge effect correction method is applied, then the values of L statistic, which is the linearised version of Ripley's K function, are interpreted in the following way: $L = 0$ indicates complete spatial randomness, $L < 0$ indicates 'insufficient' and $L > 0$ 'excessive' point density or clustering at the given scale. If the edge effect correction method is applied, then the curve of the L statistic values indicating complete spatial randomness at different scales diverges from the x axis upwards, i.e. in the positive direction along the y axis.

Because L function distribution is unknown, the statistical significance of the results can be tested to a certain degree through random simulations. The maximum out of the values of L statistic from 100 random simulations at each of the scales (computed separately in each of the model areas) labelled L_{max} does not rise above the respective values of L statistic recorded in seven out of all eight model areas. This implies that clustering of points representing spatial elements of built-up area patches in these areas at all analysed scales is statistically significant (with probability of making an error $p(LCSR > L_{max}) \approx 0,005$). The only exception is the model area of SA, where the point pattern seems to be clustered up to the scale of about

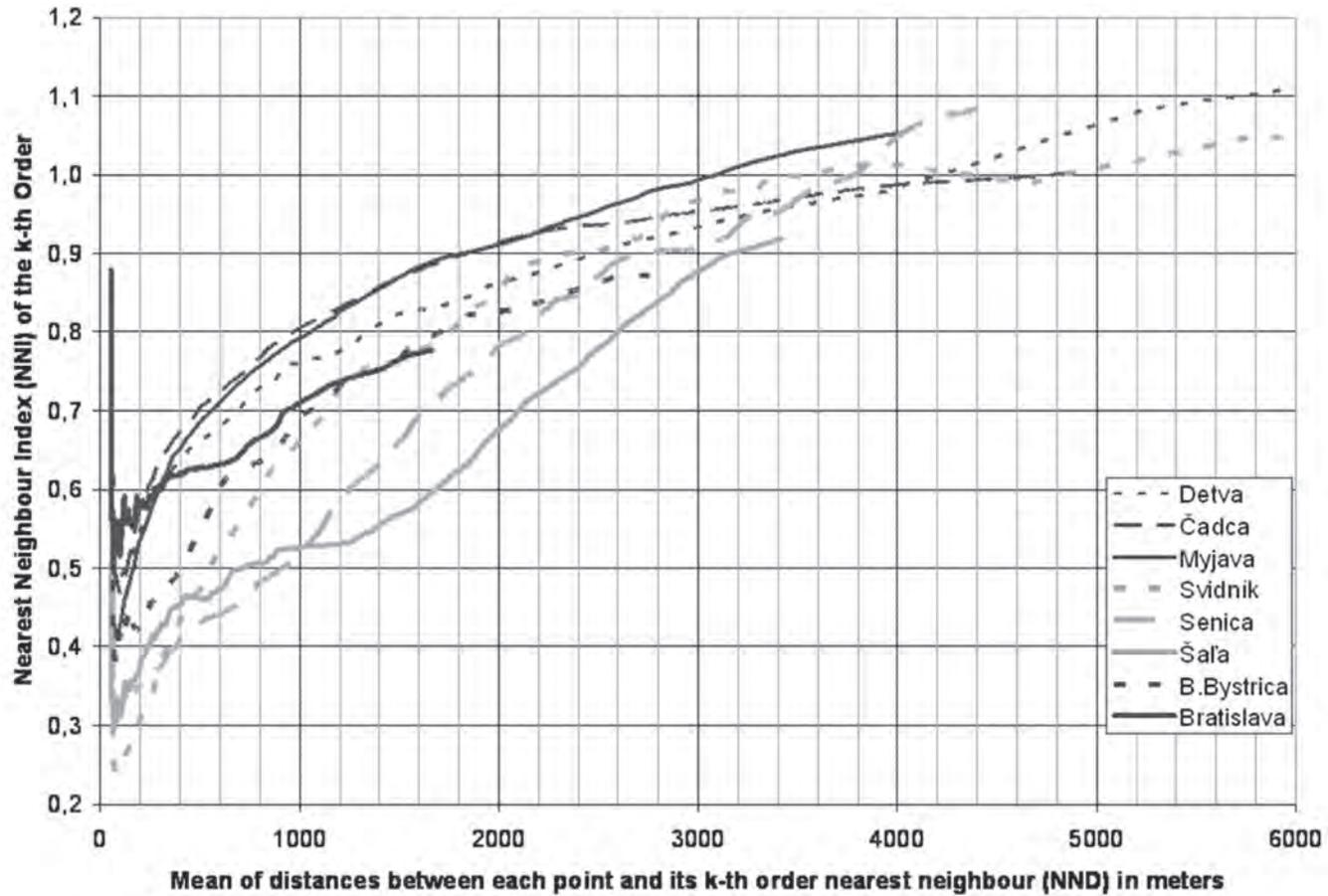


Figure 4. The relationship between the k-th order nearest neighbour index and the mean of distances between each point and its k-th order nearest neighbour (NND) in meters

4793 m, completely spatially random between about 4793 m and 4942 m, and dispersed at the scale of about 4942 m and larger (Figure 5).

It is apparent from the figure that the model areas form the same three distinct groups/types described in the previous section. Although this method is probably appropriate the least for the settlement configuration assessment of BB and BA compared to other model areas (because of their heterogeneous urban-suburban character and large intensity of clustering at global scale, i.e. the scale of the model area extent), it is quite clear from the results, similarly as from the previous figures, that the settlement system at smaller scales exhibits greater clustering in BB compared to BA, and that the scale of maximum settlement clustering is larger in BA (probably outside of the range of scales presented on the x axis) compared to BB. It is also obvious from the figure, that the individual model areas in the compact rural type have the same order as at the beginning (which is 1st SK, 2nd SE, 3rd SA) – i.e. the order according to the ascending mean surface area of built-up area patches as well as the order according to the descending share of individual built-up objects on total built-up surface area – also in other four aspects: ascending intensity of maximum clustering (L equals 1212, 1373, 1504 in the given order), ascending scale of this maximum clustering (r equals 1063 m, 1241 m, 1418 m, representing something like average settlement cluster size), descending intensity of minimal clustering (L equals 507, 274, 135), and ascending scale of this minimum clustering (r equals 3840 m, 4963 m, 5199 m, representing something like average distance between two settlement clusters). In the dispersed rural type, DT reaches the smallest scale (473 m) of maximum clustering (L = 686) and its curve is also the most spiked ('leptokurtic') compared to CA and MY. Relatively less spiked and more flat ('platykurtic') curve representing more similar or almost even intensity of clustering at different scales is probably partially caused by a relatively large number of built-up area patches with elongated form in the case of CA, and by a relatively large variance in the built-up area patch size distribution in the case of MY. Relatively high L values at large scales in these two model areas, similarly as in SK, suggest the influence of strong global scale clustering (compared to SA, SE and DT), which is still significantly less intense, though, than in BB and BA.

CONCLUSION

The main objectives of this contribution were: (1) to give a brief overview of the directions along, which new alternative definitions of rurality/urbanity, assessments of their intensity and delineations of the respective areas are being developed, (2) to suggest possible improvements that might be considered in the future, especially in terms of accounting not only for spatial composition component, but also spatial configuration component of settlement system concentration, and (3) to present an exploratory analysis of settlement system spatial configuration at multiple scales (an interval on the continuum of scales) in eight model areas in Slovakia based on two classic point pattern analysis methods, i.e. k-th order nearest neighbour index and Ripley's K function. The results seem to be promising. In future research, performance of these methods should be tested in a moving window mode, and, if successful, they could form the basis for new landscape metrics development. Moreover, it should be borne in mind that for the rurality/urbanity assessment purposes not only the composition and configura-

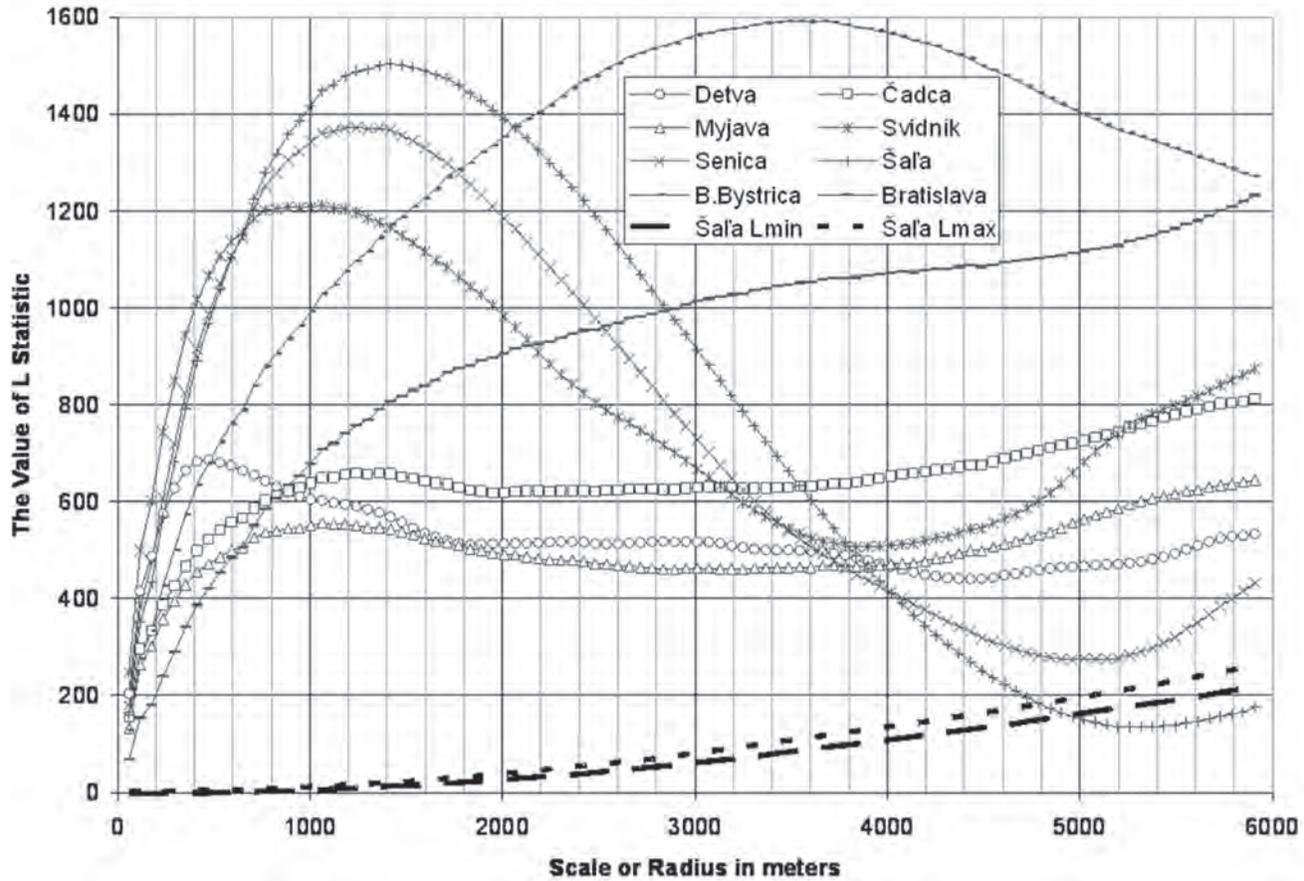


Figure 5. The relationship between L statistic (linearised version of Ripley's K function) and the respective scale or radius in meters. Lmin and Lmax are the minimum and maximum values of L statistic from 100 random simulations in the Šaľa model area

tion of artificial/built-up areas, but also the composition and configuration of all other land cover categories (agricultural, forestry, and natural area, inland water, and sea) could be considered.

ACKNOWLEDGEMENT

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CRITERIA OF A SUCCESSFUL RURAL MUNICIPALITY

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Abstract. The contribution discusses possibilities of evaluation of successibility of rural municipalities and conditions of their further development. Main goal is to identify individual criteria of successibility of rural municipalities. Nowadays there are more than 5,000 of rural municipalities searching for different possibilities of development in Czechia. While some municipalities have concentrated on building of specific types of technical infrastructure e.g. gas pipes, water pipes and sewerages, others are oriented to the appearance and arrangement of public areas. Either gaining further subsidy or investment, development of public infrastructure, an increase of number of inhabitants at a municipality from another point of view can be understand as success when evaluating successibility of rural municipalities.

The contribution will attempt to define basic criteria of successibility and to lead a discussion about different views on development of a municipality.

Key words: rural municipality, criteria of successibility, sustainable development

INTRODUCTION

The year 1989 brought to the Czech Republic a series of deep changes in many respects. One of key changes in organization of territorial administration was re-establishment of self-government of municipalities. All municipalities in the Czech Republic without exception got the chance to decide again about their own matters. Competences of Czech municipalities were enacted by the Act on Municipalities (N° 367/1990). The principal changes introduced by this act were the rights of municipalities to freely manage their property and budget, to approve their land planning conception and to choose their representatives (Perlín 1996). The same range of competences belongs to all municipalities from the capital city to the smallest rural ones.

A great problem of the settlement system and of the public administration system of the Czech Republic is its extreme dismemberment, which results into a very high number of very small municipalities, which are further divided into several settlements. Due to the historical heritage from the time of the communist regime and to their size, small municipalities

lack some services, technical infrastructure networks or other investments, which are necessary for a sound development of a municipality.

Therefore different partial national subsidy programmes taking into account a lower level of activities in rural areas have been developed since 1994 to back activities considered as important by subsidy programmes administrators (programmes of rural regeneration, subsidies for infrastructure, environment protection and formation). When preparing joining the EU and after it, individual subsidy programmes were transforming to correspond to the EU structural policy or to the EU Common Agricultural Policy.

All instruments for development of rural municipalities tend to help the rural areas and individual actors there, to ensure renewal of rural areas and to back civic and other activities in rural areas. Renewal in this sense means revival of all key aspects of successful development. But what does it mean successful development of a rural municipality? What is the definition of a successful municipality? These are the questions this article tries to respond. Its main aim is to discuss the term successfulness, to delimit the criteria of successfulness of a rural municipality and to try to find specific examples of successful municipalities. Evaluated are rural municipalities which had initially relatively the same conditions, but their successfulness is different.

METHODICAL NOTES

In the following text, attention is paid only to rural municipalities. Rural municipality is defined as a municipality with municipal council. The established criteria could be used also for other types of municipalities, but it would be more difficult.

After disintegration of rural municipalities at the beginning of the 1990s, there are in Czechia 6254 municipalities.

The size structure of rural municipalities is shown in Table 1.

Table 1. Size structure of municipalities in the Czech Republic, 2001

Size category	Number of municipalities		Number of inhabitants	
	in total.	percentage	in total	percentage
7-500	3707	59.3	871011	8.5
7-1000	4983	79.7	1762103	17.2
7-2000	5635	90.1	2665860	26.1
7-3000	5833	93.3	3149010	30.8
Total	6254	100.0	10230060	100.0

Source: Census 2001

In some regions, rural municipalities are further divided into local parts (independent from the town planning point of view or discontinuous parts) – villages which are more than 11 000 in Czechia.

Differences of the Czech countryside are given by a different social-political development during the last fifty years and above all by the specific settlement system of the Czech Republic, characterized by a very split settlement structure. In 2006, the average number of inhabitants of a municipality was 1641.

As rural is mostly considered a municipality with less than 2000 (settlement criterion) or 3000 (administrative criterion) inhabitants, but also within this group there is a large differentiation. If we divide up municipalities according to the type of their municipal office into urban (with town council) and rural (with local council) ones, then 90% of them are of rural type – they cover 75% of the state territory and 25 to 30% of the Czech population live there. “Although the part of these small municipalities forming the rural area is not much significant as to the number of inhabitants and their share on the national economy, the situation is different as to the extent of the territory administered by them” (Hampl, Müller 1998, p. 5). The problem of a rural municipality consists in its small population size – it lacks qualified individuals to manage it. The size of a municipality is connected also with the volume of its budget. In addition, smaller municipalities have also other specific problems common to contemporary countryside. In general, it is difficult to ensure their economic autonomy and a good quality of administration.

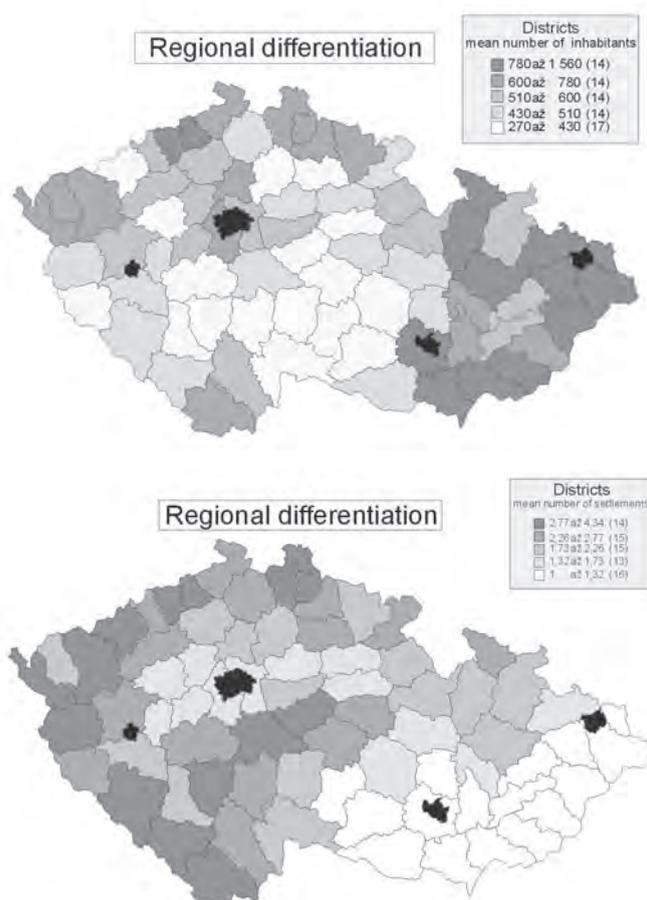


Figure 1. Mean size of rural municipalities and average number of settlements
Source: Census 2001.

Nevertheless, there exist many differences among rural municipalities in different spheres of life. We can argue whether a municipality has “inherited” this situation or whether it results from ongoing economic changes or from strong-willed efforts of the local council and inhabitants (Musil 1995). Ensuring of good work of political representations, of autonomous management and economic viability of municipalities may be influenced to a certain degree also by the size (number of inhabitants) of the given municipality (Hampl, Müller 1998). But also some smaller municipalities can operate without greater problems. But causes of success are not the object of this article. The following chapters will deal with the way how to determine criteria of successfulness of rural municipalities which would serve for their evaluation.

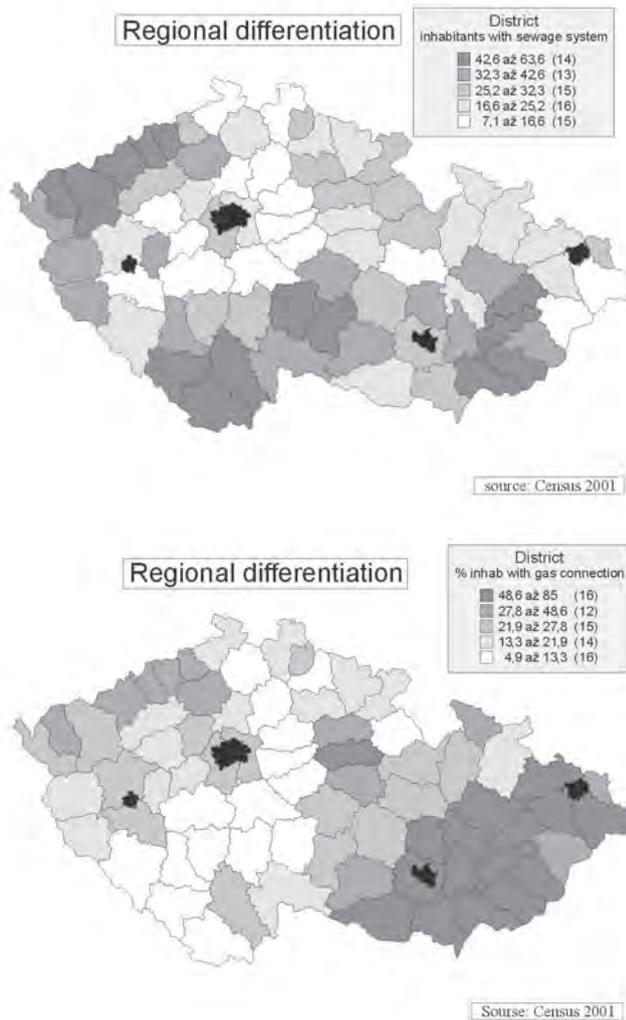


Figure 2. Regional differentiation in equipment of rural municipalities by sewerage and gas networks
Source: Census 2001.

Regional differentiation of individual rural municipalities is much varied, both from the point of view of their size, and of their equipment by basic infrastructure networks.

The mean size of rural municipalities of less than 3000 inhabitants as well as the number of local parts in rural areas are documented by cartograms.

Both cartograms document above all regional differentiation between Bohemian and Moravia regions. While in Bohemia, there are, especially in the southern part of Central Bohemia and in the adjacent districts, very small municipalities, large ones are mostly in the south and southeast of Moravia and in the Sudeten areas of North Bohemia. Especially in territories with relatively small municipalities these small municipalities are dismembered into very small territorial units – settlements. On the contrary, Moravian municipalities mostly consist of one single settlement.

As it ensues from the preliminary analysis of the level of equipment by certain facilities, the rural areas are very differentiated. For that reason, both different requirements for development programmes of municipalities and different criteria for evaluation of their successfulness can be expected.

HOW TO CONCEIVE SUCCESSFULNESS?

When evaluating successfulness of rural municipalities, we must always evaluate how individual groups of rural actors conceive successfulness. In fact, the views of individual groups are quite different.

In general, three main groups of actors can be distinguished in rural areas:

- a) Citizens of the rural municipality, individual non-profit groups or informal associations in rural areas
- b) Representatives of local government
- c) Representatives of state and of higher territorial units of public administration

Active citizens, as stressed for instance by Majerová (2005), consider as most important for the development of their municipality a good quality of environment for development of their municipality, tidy public spaces, good human relations and backing of different informal activities. Representatives of local government stress, as the most important for development of rural municipalities, subsidies for building local technical infrastructure. Especially equipment of municipalities by water, sewage and possibly also by gas supply systems and reparation of local roads are the key themes mentioned in applications for and in interest in individual subsidy titles. Mayors of even the smallest municipalities, regardless of economic position and budget possibilities of municipalities, clearly prefer building of this very expensive infrastructure, often several times exceeding the annual budgets of municipalities¹.

Representatives of higher government bodies consider as essential above all stabilization of public administration, balanced municipal budgets and lawfulness of individual decisions of public administration bodies. This is evident for instance in control activities concerning municipalities (Act on Municipalities, 128/2000.)

Therefore, the key problem is how to define the factors influencing successfulness of

¹ The budget of a municipalities with less than 300 inhabitants is of 2 to 3 millions of CZK, costs of building a sewage system are 20 to 30 million of CZK in dependence of technical parameters.

municipalities. Czapiewski (2008) differentiates exogenous and endogenous factors of rural development. As exogenous factors of rural development, he understands those which cannot be directly influenced by the municipality and which results from its size, position in the settlement system and from the municipal property acquired in the past. Endogenous are those which can be directly influenced by the municipality, result from its internal structure, activities of its representatives or of other active inhabitants and which can be documented by individual municipalities. Endogenous factors were studied for instance by Pešta (2007), who proved on the example of two neighbouring municipalities a great importance of endogenous factors, if external factors are identical.

The whole circle of authors connected with the Programme of Rural Regeneration put a great stress exactly at internally conditioned factors of development and, within associated activities, back activities of municipalities and of their representatives. Blažek (2004) stresses motivation factors and mechanisms for promoting activities of rural population and the necessity of communication as the basic prerequisite for a successful planning of future development. Blažek formulates also specific approaches, standards or lifestyle in rural areas and, on the example of development of value criteria, differentiates the lifestyle in urban and rural areas.

Czapiewski (2006) defined the standards of success of development of rural municipalities as development complexity, development dynamism and relativity in comparison with other territorial units. Then he defined in total four basic factors of a successful development of rural municipalities situated at four imaginary apices of a square. These factors are:

- Economic success
- Social success
- Infrastructure success
- Environment success

The success of the whole municipality can be then defined as the imaginary balance on the intersection of the apices of this square. But his paper does not deal in detail how can “success” be understood in general or under the conditions of Polish countryside and which are the relations of conditionality between individual categories of success.

Evaluation of successfulness in general is very problematic. Successfulness can be considered as an abstract term, therefore there are not strict criteria for its clear definition. Certain subjectivity appears therefore in its determination.

Successfulness of a rural municipality can be considered from many points of view connected with definition of rural areas and of their functions. The issue of rural areas can be considered as a very large theme dealt with by different group of scientists – geographers, sociologists, city planners, landscape ecologists and others, while every branch considers it from a different point of view. There is not a single definition of the term “rural areas” and equally different are the views on their function.

Successfulness can be also considered as fulfilment of certain requirements ensuing from determination of functions of rural areas. It can be said that rural areas have an irreplaceable economic, social, cultural and also ecological significance. Views on their function are changing. In the past, agriculture was considered as the basic function of rural areas, now it can be housing, recreation, economic unit, place of social contacts, cultural and natural space (for instance according Herová, Varvažovská 2005). Functions of rural areas are described in detail also by Slepíčka (1989).

Delimitation of functions of rural areas is connected also with the problems they are facing. As successful can be considered the municipality which can overcome such problems. According to Bedrna (2005), the development of Czech rural areas was marked by two historical turns – 1948, when new social-economic changes occurred, and 1989, when there appeared the first efforts to re-establish the initial situation and to adapt the rural areas to the new conditions. “The first transformation had many negative effects, as changes of traditional structures and links of rural areas, disruption of property and social relations of the population, changes of functions and appearance of settlements and of landscape, destruction of diversity and of local crafts, products and traditions, a strong limitation of economic independence of rural areas on external system conditions ...” (Bedrna 2005, p. 21). In addition, problems of the west-European development (competition pressures, unemployment, depopulation, small political impact, etc.) began to appear in the Czech Republic after 1989 (Majerová 2005). The character of rural areas and of their processes in the modern world has been discussed in Europe. Majerová (2005) enumerates three spheres of standard problems mentioned in this connection – areas formed by the pressure of modern life (modern agricultural and residential areas), declining areas (migration from rural to urban areas and extensive farming) and remote areas (peripheral from the geographical point of view with poor settlement).

When evaluating the importance of governance of rural areas, a sensible shift has occurred in its perception. For instance Goodwin (1998) draws attention at a new form of territorial governance and stresses the broader role of public administration going from pre-school children care to safeguarding a decent existence of the oldest inhabitants of a rural municipality or region. As an example of the new approach to the good governance in rural areas, he mentions the Leader Incentive and related national or regional activities enabling mutual communication between public administration representatives, business sector and active citizens as well as common formulating of their interest in development of rural areas. Goodwin’s ideas were developed, among many others, also by MacKinnon, who, on the example of development of rural areas in Scotland, observes the bottom-up approach and confronts it with real results of his research into individual communities in Scotland. However, when formulating their conclusions, both authors proceed from British experience and consider as rural communities much greater units with internal endogenous resources for formulation of their own development strategies.

Based on stressing of the role of endogenous factors (Czapiewski 2008), or on very similarly perceived internal subjective factors (Blažek 2004), or on stressing the role of the new internal administration and significance of co-operation of individual subjects of local development (EU Leader Incentive, Goodwin), we can suppose that as successful will be considered exactly those municipalities where social and cultural life is rich and the activity of population high.

DEFINITION OF CRITERIA OF SUCCESSFULNESS

The following criteria were defined to explain the relation between the subsidies from the Programme of Rural Regeneration and the general successfulness of a municipality. The aim of this research was to answer the question how did the Programme of Rural Regeneration contribute to the successfulness of the municipality. For this purpose, municipalities

of the Vsetín district were evaluated according to the following criteria in view to find the most successful ones.

The choice of criteria was led by the effort to consider the successfulness of a municipality in a complex way. One of inspirations was the Programme of Rural Regeneration with its objectives leading to a complex renewal of rural areas. The Programme did not only concern the regeneration of the unkempt and often destroyed physical state of villages and landscape, but above all regeneration of social, cultural and economic life in rural areas (Perlín 1992). The aim of the Programme is not only to restore the initial situation, state or values existing in the rural areas before the two principal socio-economic transformations (1948 and 1989), but also to formulate new values of the rural way of living.

The choice of criteria was partly influenced by the problems the municipalities were facing and by their capacity to overcome them. According to the research done by the Sociological Laboratory of the Czech Agricultural University lead by Majerová (2003) among mayors of rural municipalities, the main social problems were unemployment, scarcity of jobs and a bad age structure. They also tried to include the currently most discussed condition of resource development that is activity of local human resources. Setting up conditions for activation of the human factor is the present EU slogan characterizing the efforts of the Union to increase the quality of life of rural population (European Conference on the Countryside – Leader 2005). When looking for successful municipalities, the stress was put upon the activities of local people which are beneficial not only for themselves but for all inhabitants, as well as upon their participation in matters concerning the municipality, its life and its future. Active inhabitants are the synonym for a successful municipality.

As successful was defined a municipality:

1. the population of which has been increasing and is relatively young (demographical indices);
2. where development activities are present (economic indices);
3. the appearance of which is pleasant (appearance of the municipality);
4. which is sufficiently equipped (equipment of the municipality);
5. where the life is rich (political activities of local population and cultural life in the municipality);
6. which works correctly (functionality of the municipality).

Demographical indices are related to problems considered by mayors of rural municipalities as the most serious ones. Demographical indices can reflect to a certain degree the attractiveness of the given municipality, especially for young people.

Indices of the group “economic activities” were aimed at changes in economic activities in the municipality, the development of which was also one of the aims of the Programme. According to the research by Majerová (2005), economic activities and a stable economic basis of the municipality are also considered by mayors as one of the most important development issues. Evaluation of the overall successfulness of a municipality is very difficult because of insufficient primary data. Definition of indices in this sphere is the most problematic. Not every rural municipality must necessarily have a production function, but it is important for it to ensure its economic development in a certain manner. This group of indices was used to compare economic activities in individual municipalities.

The appearance of the municipality, or of its central part, or the state of its representative buildings do credit of this municipality. A pleasantly looking municipality may reflect good

work of all components of the municipality and may increase its attractiveness in the region. As stated by Blažek: “The village square does credit of the municipality, but very often it is the least clear place of it, as it reflects, more than the rest of the village, different historical pressures and turns...” (Blažek 2004, p. 80). The appearance and aesthetical aspect of space can be considered as the simplest at the first sight visible consequences of the renewal of the municipality and of its successful development.

Existence or absence of technical or civic infrastructure can be considered as development issue. Some authors speak about investments into lacking equipment as about standard ensuring investments or “investments for liquidation of old burdens” (Perlín 2006). A successful municipality should ensure equipment corresponding to the status of rural municipality.

Activities of local people are vital for a sound development of a municipality. Promotion of participation of local people in the life of their municipality was also one of the aims of the Programme of Rural Regeneration and it is an EU priority. Therefore, activities of local people were taken into consideration when evaluating successful municipalities.

Indices concerning functionality of a municipality included the way of organisation and management of the municipality and those activities of its representatives, which are crucial for launching a successful development of a municipality. Active representatives should play the leading role in the development of the municipality. Stress was also put upon the integration of the municipality into the co-operation of municipalities.

The choice of individual variables was more difficult than delimitation of their spheres. Their informative value, as well as their availability and topicality had to be taken into consideration. Only basic municipal statistics are published on annual basis. When more detailed data are needed, it depends on databases administrators and especially on the regional office, how the annual statistics are published.

Specific research was carried on in rural municipalities of the Vsetín district. According to the OECD methodology, this district is a predominantly rural one with almost 33% of its inhabitants living in rural municipalities (Trnková, Trnka 2000). The Vsetín district is situated in the northern part of the Zlín Region at the border with the Slovak Republic. Its position, because of the westward orientation of the Czech Republic, is therefore not advantageous. An important characteristic is that the area was not affected by the transfer of German population. People who live there are stable and traditionalist. Out of the 59 municipalities of the district, all the 52 rural municipalities were selected for our research. An advantage of the district is its considerable differentiation of rural municipalities according to the number of inhabitants, which was used mainly when examining the influence of population size on the successfulness of a municipality.

Survey of individual variables for evaluation of successfulness in individual spheres:

Ad.1. Demographical indices

- index of change of the number of inhabitants (2005/1998)
- index of change of the of age index(2005/1998)
- average rough rate of increase due to migration (1998–2005)

Ad.2. Economic indices

- average rate of unemployment (2001–2004)
- number of companies (joint-stock, commercial, cooperative) per 1 inhabitant (2004)
- number of business subjects (physical persons) per 1 inhabitant (2004)

Ad.3. Appearance of the municipality

- state of the main road in the municipality and of its immediate surroundings (ditches, pavement)
- appearance and physical state of representative buildings in the municipality (municipal office, school, church)
- physical and aesthetical state of the central area in the municipality (state of small elements, green areas, information tables, general appearance)

Ad.4. Equipment of the municipality

- technical equipment – water and gas² supply, sewage system with a sewage treatment plant, sewage system without a sewage treatment plant (2004)
- civic equipment - school, library, public Internet, own website, playground, health centre (at least detached), cultural facility (2004)

Ad.5. Political activities of local people and cultural life in the municipality

- number of amateur associations in the municipality (2006)
- number of public events organized in the municipality (2006)
- number of political parties standing for elections in the municipality (2006)
- number of candidates per 1 inhabitant (2006)
- participation in local elections (2006)

Ad.6. Functionality

- number of EU projects in the municipality (2007)
- number of participations in associations of municipalities, foreign partnerships (2005)
- budget – index of development of capital expenditures per 1 inhabitant (2005/2000)
- index of development of non-tax incomes per 1 inhabitant (2005/2001)

Individual data were obtained both from public databases and from analysis of a selected group of municipalities, when the entire methodology of evaluation of successfulness of municipalities was tested. The only possibility how to ascertain the real physical state of a municipality is to proceed to field investigation. For the purpose of this research, field investigation was carried out from 17th to 19th of November, 2006, and previously delimited characteristics were observed in individual municipalities. Within three evaluation sub-groups, we monitored the state of the main road and of its immediate surroundings, the appearance and physical state of representative buildings (municipal office, school, church), the physical state and aesthetical aspect of the central area in the municipality. A unified evaluation scale was determined in advance.

Evaluation of activities of local population was done with the help of local newspapers published during one year (2006), or of data on the website of the given municipality. As all local newspapers or data on these indices were not published, the necessary data were completed by telephonic inquiries of representatives of the given municipalities. The data on participation in political life in the municipality were taken from the public database *volby.cz*.

Evaluation of a sound management of a municipality should be based on analysis of budgets of individual municipalities during the period 2000–2005. The problem was how to determine the criteria for evaluation of a successful management of a municipality. Can we consider as successful a municipality which has a monotonously slightly growing trend of balanced budget,

² Supplying with gas, although it is not the most convenient way of heating of rural municipalities, was also selected because of high costs of its installation within the Programme of Rural Regeneration.

but its expenditures are only those necessary for normal life of the municipality? Or is successful a municipality, which tries to invest, which leads to high oscillations in the budget volume and to differences in its expenditure part? In addition, municipalities are in different stages of management, some having already invested and the others only going to do so.

At first we wanted to observe the indebtedness of municipalities, but it was difficult to evaluate, as short-term indebtedness must not mean a bad management. The municipality could have used a credit for a larger investment, which it will pay during the following years without compromising its economy, or it might be a sum which burdens the municipality in the long-term perspective and prevents it from its further development. The Government of the Czech Republic approved on 14th of April, 2004, Resolution 346 on Control of indebtedness of municipalities and regions with the help of debt service index which is monitored annually. As limit of acceptable indebtedness was fixed the debt service index of less than 30 %, (for more details see www.mfcr.cz). Evaluation done in 2004, found 185 municipalities with debt service level higher than 30% (for more details see Eliáš 2004). In the whole Zlín Region, there were only 9 such indebted municipalities, therefore we did not proceed to evaluation of credit burden. Useful would be also an analysis of the property of municipalities, but finally this index was not chosen because of difficult collecting of data and evaluation.

RESEARCH RESULTS IN THE VSETÍN DISTRICT

Evaluation of the most successful municipalities in general (see Table 2) was done on the bases of sums of orders according to individual variables in all groups of successfulness criteria. A successful municipality is, according to our research, characterized by a good economic

Table 2. Evaluation of municipalities according to their overall successfulness after the given criteria

Municipalities according to their overall successfulness (+ number of inhabitants as to the 1st of January, 2006)					
The five best ones			The five worst ones		
1.	Francova Lhota	(1628)	38.	Oznice	(369)
2.	Zašová	(2810)	39.	Střítež nad Bečvou	(788)
3.	Dolní Bečva	(1799)	40.	Růžka	(897)
4.	Hutisko-Solanec	(1955)	41.	Valašská Senice	(488)
5.	Kateřince	(942)	42.	Prlov	(523)

Source of data: own calculations

base, by a pleasant appearance, good equipment and high activity of inhabitants, mainly in cultural life, and by a good functionality. Only in demographical characteristic, no relation with general successfulness was found (see Table 3).

Correlation analysis proved a relation existing between the overall successfulness of municipalities and the numerical size (Pearson's correlation coefficient -0.475 , significance 0.05). Our initial presumption was that the number of inhabitants is interrelated with the successfulness of a municipality, i.e. less inhabitants live in a municipality, more problems (mainly

Table 3. Correlation of sums of orders of studied characteristics

Evaluation group of characteristics	Statistics	Number of inhabitants in the municipality	Sum of orders according to the overall successfulness
Number of inhabitants in the municipality	Pearson Correlation	1	-.475(**)
	Sig. (2-tailed)	.	0
Sum of orders according to demographical indices	Pearson Correlation	0.116	0.269
	Sig. (2-tailed)	0.412	0.054
Sum of orders according to economic indices	Pearson Correlation	-0.18	.442(**)
	Sig. (2-tailed)	0.202	0.001
Sum of orders according to indices of appearance of the municipality	Pearson Correlation	-.610(**)	.489(**)
	Sig. (2-tailed)	0	0
Sum according to equipment indices	Pearson Correlation	-.635(**)	.684(**)
	Sig. (2-tailed)	0	0
Sum of orders according to indices of activities of inhabitants	Pearson Correlation	-0.169	.312(*)
	Sig. (2-tailed)	0.23	0.025
Sum of orders according to activities in political life of the municipality	Pearson Correlation	.349(*)	0.111
	Sig. (2-tailed)	0.011	0.433
Sum of orders according to activities in cultural life of the municipality	Pearson Correlation	-.604(**)	.437(**)
	Sig. (2-tailed)	0	0.001
Sum of orders according to indices of functionality of the municipality	Pearson Correlation	-0.161	.527(**)
	Sig. (2-tailed)	0.253	0
Sum of orders according to overall successfulness	Pearson Correlation	-.475(**)	1
	Sig. (2-tailed)	0	.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Source of data: own calculations

organizational, economic, subsistence) this municipality has and more difficult it is to cope with them. Owing to the above correlation, this fact was confirmed. Generally, successful municipalities had more inhabitants (see Table 2 and 3).

Correlation was found also in indices of equipment, appearance and activities of inhabitants (amateur associations and cultural events). In other observed characteristics, none correlation was found. Therefore, if a municipality looked nice, it was also well equipped and its population had a rich cultural life.

From the point of view of territorial distribution, there is a certain relation with the proximity of the regional centre and the state border (see Figure 1). Clusters of the overall most successful municipalities were situated near Vsetín and Rožnov pod Radhoštěm. Municipalities nearer the state border manifested worse characteristics.

CONCLUSION

The system of organization of territorial self-government in the Czech Republic faces many problems. The most serious is its dismemberment, as small municipalities struggle to ensure their economic viability and good governance. They are mostly rural municipalities manifesting nevertheless certain differences. General evaluation of successfulness is very difficult. It always depends on the view we have on the given issue.

The aim of this article was to examine the possibility of evaluation of successfulness of rural municipalities. It is only one example of evaluation trying to consider successfulness in a complex way. The used criteria were tested on the example of the Vsetín district, they were further completed by visual monitoring of individual rural municipalities during which also local sources of information were used. It can be said that, with certain modifications, they can be relevant also for other territories and for other purposes.

In our case, successfulness of a rural municipality was evaluated according to six evaluation groups of criteria – demographical, economic, appearance, equipment, activities of inhabitants and functionality of the municipality. Key problems of municipalities were defined and also activities of local human resources were included. The article presents the problems of selection of individual variables, their informative value and data availability.

Research done in the monitored territory proved that overall successfulness is conditioned by a good economic basis, pleasant appearance, good equipment, rich activities of population, mainly in cultural life, and functionality of the municipality. Demographical indices did not prove to contribute to the overall successfulness.

Key factors for successfulness of municipalities are above all the population size of the municipality (larger municipalities are more successful than the smaller ones), which again lead to reflections on reconsideration of the system of administrative organization in the Czech Republic, and the distance of the municipality from the regional centre.

We also found a correlation between activities of inhabitants, the appearance and the equipment of the municipality. The significance of activities of inhabitants is therefore undeniable.

When dividing factors of municipality development into internal and external ones, we can prove that external factors, and mainly the size of the municipality and its geographical position, are of key importance. When studying more in detail municipalities which have the same initial conditions, it was proved that the most important internal factors are the indices of economic basis of municipalities, their appearance and equipment and also activities of their inhabitants.

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SUSTAINABILITY AND SUCCESS – A CASE STUDY OF MAZOVIA REGION

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Abstract. Presented paper concentrates mainly on the question of determining the sustainability of development of rural areas of the Mazovian province in Poland. Conform to the concepts concerning the success areas and the sustainable development, it was assumed that the three basic indicators of the spatial structure of rural areas – economic, social and environmental – ought to attain similar, and at the same time high, values. The report present spatial differentiations as well as relations between three determined indicators.

Key words: success areas, sustainability, economy, demography, environment, rural areas, Mazovia, Poland

INTRODUCTION

Rural areas are a complex phenomenon, so their development has to range simultaneously many aspects: economical, social, natural, cultural and infrastructure one. When this condition is met, we can consider such a unit as an area of success and areas of sustainability. A balance of all spheres of civilization development is assumed for units like this.

Success areas should be considered as the areas where all indicators describing civilization development are relatively high and which are characterised by a constant progress in chosen measures in a given time. This definition assumes that a region where only one of the examined planes is highly developed while the other features reach values lower than the average cannot be recognized as the area of success. Dynamic perspective is the other important element of the definition. It assumes the constant increase of the examined measures. Very important feature of the area of success is their relativity, which in great extend depends on the reference point.

The above mentioned descriptions of areas of success is closely related with the term of sustainable development, which is widely described as balancing the fulfillment of human needs with the protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future. Very often sustainable development is defining as a confluence of three preoccupations – social, economic and environment.

A detailed survey of literature on the subject of success areas and the set of basic characteristics for the issue were provided in another report by the present author (Czapiewski 2006). The study here considered constitutes the very first attempt of an analytic approach to the issue of success areas and sustainable development. Fundamental definitions were made operational and first attempts of applying statistical methods were undertaken.

AIM OF PAPER

The report presented paper concentrates mainly on the question of determining the sustainability of development on rural areas of the Mazovian province in Poland. Conform to the concepts concerning the success areas and the sustainable development, described above, it was assumed that the three basic indicators of the spatial structure of rural areas – economic, social and environmental – ought to attain similar, and at the same time high, values. The primary research question of the report is: “do areas featuring high values of economic indicators also feature high values of social and ecological indicators?” The study area is constituted here by the countryside of the province of Mazovia, the region, which is characterized by the biggest functional add economic internal differentiation in Poland. The central city of the region, Warsaw, is surrounded by a vast territory of the agglomeration, having multi-functional character, while the peripheral borderland areas display a mono-functional (agricultural) character, and are much more sparsely populated. In terms of time, the analysis refers to the comparison between 1995 and 2005.

METHODOLOGY

Individual kinds of indicators were determined with following features (S – positive influence, D – negative influence).

Economical indicator

- (1) number of registered enterprises per 1000 inhabitants (S)
- (2) commune budget incomes per capita (S)
- (3) share of investment expenditures in total commune expenditures (S)

Demographical and social indicator

- (4) difference between number of man and woman in age of 20–29 years old (D)
- (5) number of children (3–6 years old) per one place in kindergarten (D)
- (6) number of people in post-economically-productive age per 100 people in pre-economically-productive (D)

Infrastructural and environmental indicator

- (7) share of inhabitants serviced by communal sewage treatment plants (S)
- (8) water-pipes length per 1 km of sewers (D)
- (9) number of permissions for house construction per 100 marriages taken in a given period (S)

All indicators in this paper were calculated on the basis of the following formulas (Parysek, Wojtasiewicz 1979):

$$W_s = \frac{1}{n} \sum_{j=1}^n y_{ij}$$

where: W_s – synthetic index, y_{ij} – standardised value of feature j in unit i , n – number of analysed features

Standardised value of feature j in unit i was determined as follows:

$$y_{ij} = \frac{x_j - x_{j\min.}}{S(x)} \quad (S) \quad y_{ij} = \frac{-(x_j - x_{j\min.})}{S(x)} \quad (D)$$

where: x_j – value of feature j in unit i , $x_{j\min.}$ – minimum value of feature j , $S(x)$ – standard deviation

Classification of all three indicators was carried out on the basis of arithmetic mean and standard deviation. Following five classes were distinguished (Table 1).

Table 1. Class determination way

Class	Way of class designation					Feature value
I			W	≥	$x + S(x)$	Very high
II	$x + S(x)$	>	W	≥	$x + \frac{1}{2}S(x)$	High
III	$x + \frac{1}{2}S(x)$	>	W	≥	$x - \frac{1}{2}S(x)$	Average
IV	$x - \frac{1}{2}S(x)$	>	W	≥	$x - S(x)$	Low
V	$x - S(x)$	>	W			Very low
where: W– described feature, x– arithmetic mean, S(x)– standard deviation						

Thanks to procedure described above, three middle intervals in each classification have the range equal to $\frac{2}{3}$ of standard deviation, and units with average values occur in the middle class.

The areas classified in the three highest classes (I, II and III) have been henceforth treated as the areas featuring advantageous development levels for each of the three indicators of spatial differentiation considered.

FINDINGS

SPATIAL DIFFERENTIATION OF INDICATORS

The analysis of values of the three indicators analysed shows both significant spatial differentiation and important changes over time. This is conditioned both by high dynamics of the transformation processes in the countries of Central-Eastern Europe, including Poland, the qualitative changes taking place on rural areas, and by the hard to assess individual involvement of the local authorities and the inhabitants. All these variables influence and shape the contemporary processes taking place on rural areas. In the case of some analyses, finding of explanation for the phenomena observed would require much deeper insight on a local level.

Three features describing enterprise of inhabitants and local authorities were used to describe the economical potential. The greatest density of enterprises occurs in towns, sub-urbia and tourist-attractive localities. Local authorities, apart from constant expenditures for education or public administration, have the possibility to invest. The most often they invest in public utilities – the share of funds allotted for that aim confirms the developmental character of these areas. The revenues of the local self-governmental authorities constitute also an evidence for the existing economic potential of the respective areas.

In the period 1995–2005 the number of businesses on rural areas of Mazovia increased almost twofold (from 27 per 1,000 inhabitants in 1995 to 52 in 2005), while the share of investment-oriented expenditures remained at a similar level (roughly 25%), and the evaluation of the budgetary revenues is difficult due to the absolute (nominal) character of the data available. Very interesting changes took place during the period analysed in terms of the spatial differentiation of the values of economic indicator (Figure 1). A distinct concentration occurred of the municipalities featuring the highest values of the indicator around the centre of the region – the city of Warsaw. The “core-periphery” scheme causes the establishment of the metropolitan areas that focus well-educated and enterprising people, are well equipped with infrastructure and are economically attractive. On the other hand, there are marginal and not-fully-subsidized areas where depopulation processes are strong and many unfavourable phenomena occur. Formation of strong centres at the cost of the periphery areas is a serious problem for the policy of regional development. It is important that the town development were accompanied by properly orientated progress in rural areas. On the remaining area of the region of Mazovia there were in 2005 only isolated municipalities characterised by high values of the economic development indicator, while in 1995 the pattern was much more diversified.

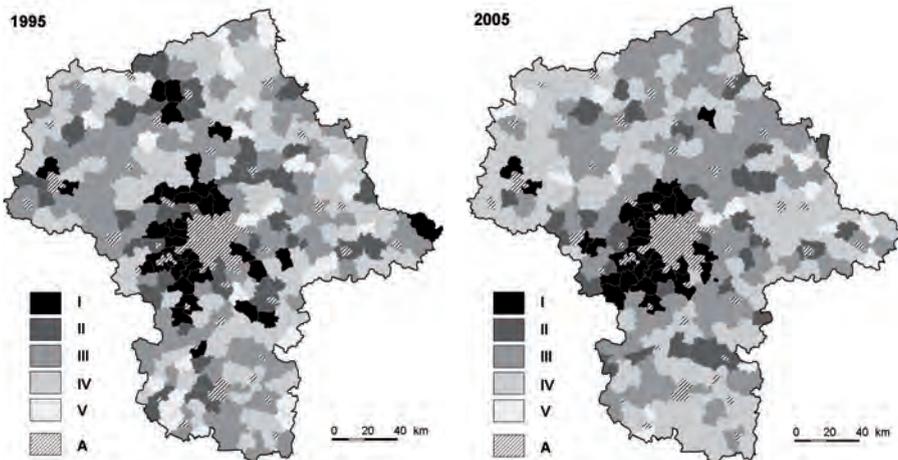


Figure 1. Spatial differentiation of the values of economic indicator on rural areas of Mazovia region in 1995 and 2005; A – towns; classes of economic development: I – very high, II – high, III – average, IV – low, V – very low

In the 1980s, the rural areas in Poland were still considered less attractive compared to towns. Rural areas were losing their young and educated population that left to seek jobs and residence in towns. However, this situation began to change in the 1990s when the former

socialist countries entered the political transition followed by the socio-economic change. The rural area as the place of permanent residence is normally attractive above all for persons whose life had been connected with the life in countryside in the past while the cost of living is also taken into account. However, only settlements with favoured geographical position (position in hinterland of big towns or position in easily accessible and tourist attractive regions) are attractive for migrants.

The socio-demographic conditioning is to a certain degree associated with the economic setting. The migratory outflow of persons from the younger age groups out of the areas of a definite economic stagnation causes relative ageing of the societies on these areas. Yet, a significant migration-related population loss may lead to disadvantageous relations in terms of the number of females and males in marrying age (i.e. 20–29 years of age). The demographic processes influence and shape the development or decline of the selected elements of social infrastructure (in particular, the number of places in the kindergartens).

During the period analysed disadvantageous changes took place in the demographic structure on the rural areas of Mazovia – the ratio of persons in the post-productive age increased from 58 per 100 persons in pre-productive age in 1995 to 69 in 2005. In addition, the number of places in the kindergartens dropped by more than 10%, and the gender ratio remained on an almost unchanged level. With respect to the socio-demographic indicator the least changes between the two years analysed were observed, reflected through the value of the correlation coefficient, $r = 0.70$. The highest values of the indicator were observed in the suburban zones of the biggest urban centres of the region – first of all of Warsaw, but also of Radom, Płock and Ostrołęka (Figure 2).

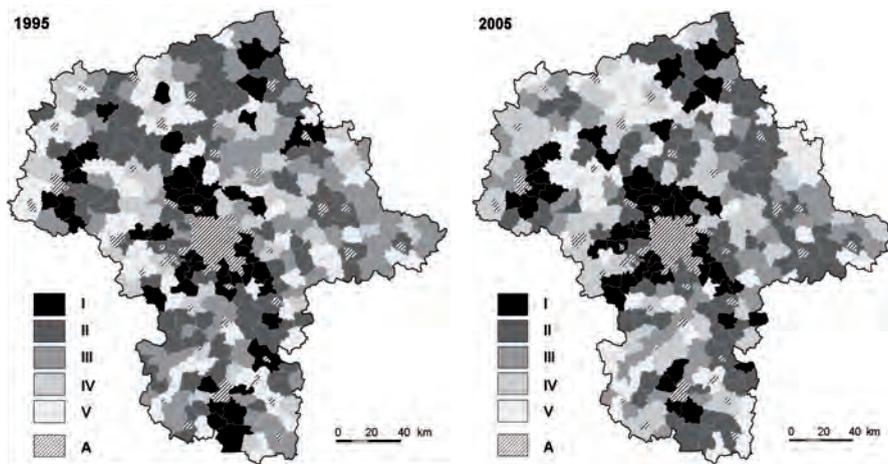


Figure 2. Spatial differentiation of the values of socio-demographical indicator on rural areas of Mazovia region in 1995 and 2005; A – towns; classes of economic development: I – very high, II – high, III – average, IV – low, V – very low

Infrastructural and environmental indicator was determined with three features that characterise technical infrastructure in a complex way. Water and sewerage system installations, gas facilities and telephone connection in the house obviously raise living conditions. Another advantage of area well equipped in infrastructure is greater ability of encouraging business-

men to invest in that region. As a result of investments, new jobs are created, local budgets has bigger income, people's wealth increases, and accompanying base and services develop – according to the principle of circular cumulative causality presented by Myrdal (1957). Good equipment with infrastructure enhances the quality of the natural environment, but under the condition of functioning of all three elements: water supply, sewage and water treatment. The number of newly built apartments witnesses both to the infrastructural development and to the economic potential of the given region, as well as to the migration behaviour of the population.

The biggest positive changes on the rural areas of Mazovia in the period 1995–2005 took place in the domain of infrastructure-related conditions. The percentage share of persons serviced by the water treatment plants increased from 4% to 16%, the length of the water supply network per 1 kilometre of the sewage network decreased from 18 to 10 kilometres while the number of newly constructed dwellings increased from 30 per 100 marriages to 61. The changes observed should be evaluated very positively, but they have been also characterised by a high spatial variability – the coefficient of correlation between 1995 and 2005 amounted to $r = 0.49$. The best values of the indicator of infrastructural-environmental conditioning in 2005 have been observed both in the suburban zones of large urban centres and in the groups of municipalities, which do not dispose of the thus advantageous location conditions (Figure 3).

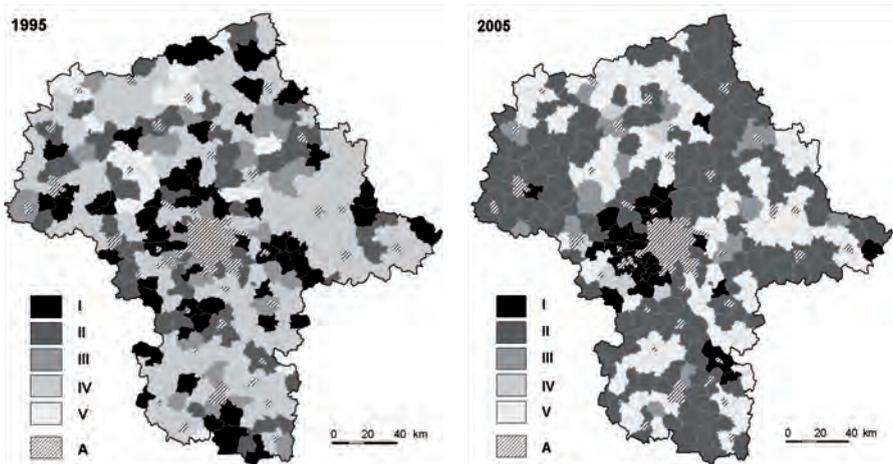


Figure 3. Spatial differentiation of the values of infrastructural and environmental indicator on rural areas of Mazovia region in 1995 and 2005; A – towns; classes of economic development: I – very high, II – high, III – average, IV – low, V – very low

RELATIONS BETWEEN INDICATORS

In 1995 there were 73 municipalities (26%) of the province of Mazovia, which featured high values of all the three indicators analysed (classes I, II and III), i.e. the economic, the socio-demographic and the infrastructural-environmental. Besides, in another 21% of municipalities high values of the economic indicator and of one of the remaining indicators have

been noted. These areas formed more or less compact territories around the biggest towns of the region – Warsaw, Płock, Ostrołęka and Radom (Figure 4). The magnitude of the thus formed circle was largely conditioned by the magnitude of the respective centre – the bigger the city the broader the zone of the positive development tendencies. The remaining areas were characterised by a diversified combination of indicators, yet the most frequently encountered types were either low values of all the three indicators or high values of only the socio-demographic indicator (14% each of these). In 2005 a different situation in terms of spatial differentiation of the rural areas in Mazovia with respect to the sustainability of development has been observed. A compact area of the highest values of all the three indicators around Warsaw took clearly shape. In the western direction this belt encompasses the third ring of the municipalities surrounding Warsaw (within the distance from the centre of the city of some 50 km). On the other hand, the zones of the positive development around the subregional centres of Mazovia almost entirely disappeared. High values of all the indicators were still noted around a number of smaller towns, which feature high development-related values.

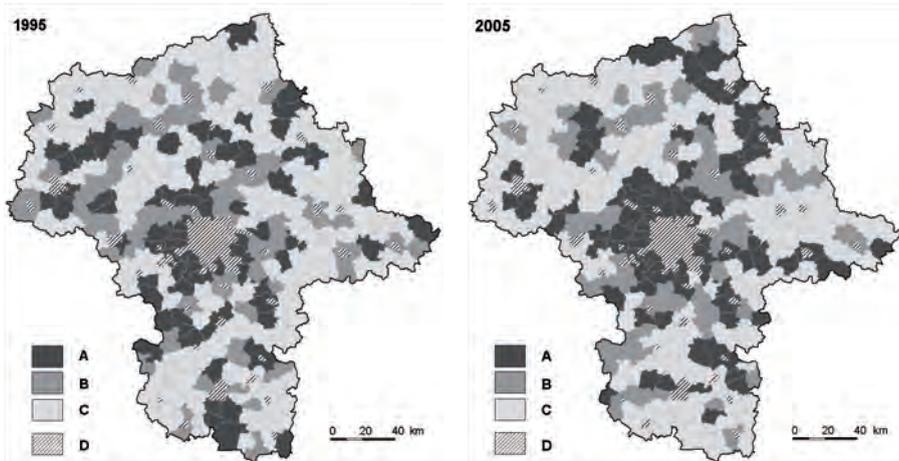


Figure 4. Spatial differentiation of the rural areas of Mazovia with respect to sustainability of development in 1995 and in 2005. A – areas featuring high values of all the three indicators, B – areas featuring high values of the economic indicator and of one of the remaining indicators, C – other rural areas, D – towns

Comparison of the results for 1995 and 2005 allowed for identification of the success areas in Mazovia. In accordance with the earlier assumptions the success areas were identified with the municipalities, which are characterised by the high values of all the three analysed indicators and their evolution over time has been consistent. At the same time, these areas are characterised by a high level of sustainability of development.

Like before, the strongest concentration of areas featuring the highest values of the development indicators characterised the suburban zone of Warsaw (Figure 5). Besides, in the space of the region yet a number of groups of municipalities or single administrative units were identified, featuring equally high values of the indicators. The spatial differentiation identified is associated with the particular characteristics of the areas delimited (functioning of an essential manufacturing plant, high social activity of the authorities and inhabitants, etc.).

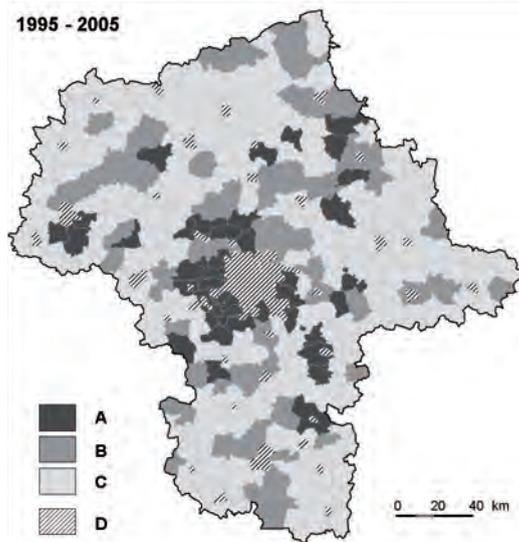


Figure 5. Spatial differentiation of success areas on Mazovia region; A – areas featuring high values of all the three indicators in 1995 and 2005, B – areas featuring high values of all the three indicators in 1995 or 2005 and high values of two indicators in 1995 or 2005, C – other rural areas, D – towns

The delimited success areas in Mazovia encompass only slightly more than $\frac{1}{3}$ of all the municipalities of the province and a similar share of the area (Table 2). Yet, this area is inhabited by almost half of the population living on the rural areas of Mazovia, which means that these areas are among the most densely populated in the region. The demographic changes between 1995 and 2005 are also quite characteristic. While during this period the total population number of the province increased by not quite 1%, on the success areas A (high values of

Table 2. Basic characteristics of delimited rural areas of Mazovia region

	Number of communes	Surface (sq. km)	Number of inhabitants 1995	Number of inhabitants 2005	Population density 2005	Percentage of total population 2005	Changes of number of population (1995=100)
Successful communes – type A	41	4,099	361,818	409,770	100.0	21.1%	113.3
Successful communes – type B	58	8,204	519,867	530,677	64.7	27.3%	102.1
Others communes	180	21,501	1,044,244	1,002,836	46.6	51.6%	96.0
Communes of Mazovia region	279	33,804	1,925,929	1,943,283	57.5	100.0%	100.9

Source: own calculation based on data from Central Statistic Office.

all the three indicators in both of the limit years of the period) this increase amounted to more than 13%! In the same time the number of inhabitants of the municipalities situated outside of the success areas delimited dropped by 4%.

Resulting from the analyses conducted an increase was noted of the strength of dependence between the values of the three indicators analysed, characterising communes, between the year 1995 and 2005 (Table 3). Thus, while in 1995 the mean value of the correlation coefficient was at around $r = 0.3$, it rose by the year 2005 to the level of $r = 0.4$.

Table 3. Linear correlation coefficient values between the three indicators analysed for 1995 and 2005

Relation between indicators	1995	2005
Economical – socio-demographical	0.29	0.39
Economical – infrastructural and environmental	0.34	0.44
Socio-demographical – infrastructural and environmental	0.30	0.38

Source: own calculation.

DISCUSSION

The changes observed can be evaluated in both positive and negative categories. The data acquired witness to the increase of sustainability of development – an increasing number of municipalities are characterised by similar values of all the indicators defining the primary planes of the civilisational development. Thus, for instance, in 1995 there were 10% of municipalities characterised uniquely by the high values of the economic indicator, with low values of the remaining indicators, while in 2005 such a setting characterised 7% of them. Additionally, it should be emphasised that just seven municipalities were characterised by a decisive domination of the economic development over the social and infrastructural development, in both 1995 and 2005. Yet, on the other hand, the values observed are the evidence of the appearance of the increasingly distinct differences between the success areas and the remaining ones. The municipalities with relatively high values of the economic indicator tried to even out the level of the remaining elements. Then, the communes featuring lower endo- and exogenous development potential increased the distance from the best units in the region.

The regional differences observed result from a high number of variables, conditioning in a direct and indirect manner the contemporary processes taking place on rural areas. Their development depends definitely upon the influence exerted on them by a number of exogenous variables, but increasingly often high significance of the internal conditions is underlined, such as human and social capital, investment climate and living standards. High spatial differentiation makes the planners and decision makers face constantly the development dilemma – spatial effectiveness or spatial equity. The former model assumes the increase of regional differentiation, but with emergence of the cores and the centres of growth capable of more effective use of means and more effective competition on the European scale. On the other hand, in the latter model bigger emphasis is placed on the evening out of the development differences and the inflow of bigger means to the less developed regions. Both the results obtained and the course of the contemporary development processes as well as the policies implemented

show the domination of effectiveness over equity. That is also why the endogenous conditions appear to be increasingly important development factors on rural areas situated far from large agglomerations and transport corridors.

CONCLUSION

The primary research question of the study reported was the determination of the sustainability of development of the rural areas in Mazovia. When answering the question thus posed, we should state that the area analysed is characterised by a quite high degree of equilibration of the indicators considered. In 1995, among all the municipalities characterised by the high values of the economic indicator, 45% featured also high values of the other two indicators, while 18% had an opposite situation. On the other hand, in 2005, more than 51% of municipalities featuring high values of the economic indicator displayed also high values of the socio-demographic and environmental-infrastructure indicators, with the share of communes featuring solely high values of the economic indicator having dropped to not quite 14%. The values obtained and the tendencies observed may indicate that the principles of sustainable development are being applied over the area under study to an increasing degree.

The analyses conducted constituted an introduction to more detailed investigations of the author into the issue of success areas in the countryside, with special attention devoted to the endogenous factors. The intention is to show the differentiation and the dynamics of transformations and to indicate a number of conditioning variables, influencing the results obtained (including spatial and communication-wise accessibility, levels of social and human capital, functional differentiation, activity of local leaders). Yet, in spite of some limitations, the report shows the spatial dimension of the fundamental processes taking place on rural areas of the region of Mazovia.

ACKNOWLEDGMENT

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BUSINESSES BASED ON LOCAL INITIATIVE IN RURAL AREAS IN HUNGARY

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Abstract. This paper presented changes in rural areas in Hungary after political change in 1990. This process started around the capital city in the 1980s, and expanded to the whole of Hungary after the privatization of the formerly state-owned flats. It was the period, when a middle class with good financial positions emerged and accepting the extra work of market building were able to keep their entrepreneurial elite position. At this paper author introduced three models of the best practices of rural development and make important conclusion.

Key words: Hungary, rural areas, rural development, local initiative, market relations, model

INTRODUCTION

In the socialist era there was full employment in Hungary, which soon ceased to exist after the political change (in 1990). In the decade and a half that have passed since then, the employment possibilities for the citizens living in the countryside have developed rather differently. Around Budapest, the large Hungarian cities and some of the middle towns, significant suburbanisation processes have taken place. This process started around the capital city in the 1980s, and expanded to the whole of Hungary after the privatisation of the formerly state-owned flats, in the early and mid-1990s. The social composition of the population moving from the towns to the villages is quite mixed. The middle class moved to the villages on the vicinity of the towns. They usually have the job in the town, and in the last decade or two, chose the village as a place of residence, a cause of the green areas and the comfort of the flat.

The farther a village is from the urban centres with an adequate number of jobs, the smaller the chance for the local inhabitants to get good jobs in the proximity of their residence. It is especially true for those areas that had depended more than the average on agriculture or socialist heavy industry before the political change. We do have to appreciate those businesses that can serve as “best practices of rural development” in such rural areas.

The essay was written on three such success stories: The three best practices and that models (Figure 1) can serve as examples to be followed for others.

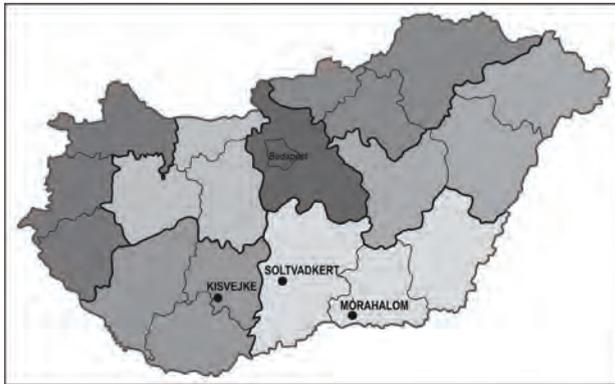


Figure 1. The three best practices model of rural development in Hungary

THE KISVEJKE MODEL

The Quick Response Project, by a joint initiative of the USDOL (United States Department of Labour) and the Ministry of Labour of Hungary, started in 1994 in Hungary. The project, which was supported by the United States Agency for International Development (USAID), operated from 1994 to 1999 and had a double objective. To develop:

1. a system suitable for addressing the problems of job downsizing caused by privatisation and restructuring; and
2. a bottom-up micro-regional economic development model.

One member of the staff of the Tolna County Job Centre participated, among other things, in the Kisvejke project as an external expert. The external expert was the initiator and the coordinator of the meetings and workshops organised under the name “Winter Nights”. The results achieved were featured in the volume of the 6th Village Conference, and the summary of the project is also based on this essay (Nagy 2003).

Kisvejke is one village, located 40 kilometres away from the seat of Tolna County, Szekszárd. In the early 1990’s the agricultural co-operative went bankrupt and the jobs were gone. People were in a hopeless situation. They felt it was impossible to do anything in Kisvejke. The leader of the project in 1996 contacted 50–60 people who could be potential participants in the development of the local economy. Following several meetings, discussions and so-called workshops they decided that they would turn the micro-region into a region of fruit production. In order to realise this goal, some of them planted fruit trees. Trainings (e.g. on the trimming of the trees), field trips and excursions were organised for them. Among the participants of the project, a very good, almost friendly relationship developed as they got to know each other more and more. They had a common destiny and the task to be solved was also the same.

This was followed by the creation and dissemination of their defined objectives: those who had participated in the workshops visited the nearby villages and informed the major part of the inhabitants about the planned developments in the micro-region. During these visits they

persuaded more and more people to join in the planting of fruit trees.

Meanwhile the Ministry of Agriculture and Rural Development announced a support scheme for planting vineyards and orchards, with a maximum of 40–50% support for all investments. The Kiscejke community applied for this support and applied the contribution to the costs of the planting to create approximately 250 hectares of new orchards. The landscape of the micro-region strikingly changed; there had only been plough lands in the hilly area before, now there are beautiful orchards of 2, 4, 5 or 20 hectares. The smallest private plot was half a hectare; the biggest one reached 20 hectares. Those who work in agriculture are usually more suspicious about new things than the average. This was the same in Kiscejke, but as the orchards started to yield, it was not necessary to talk to the people about the restructuring in agriculture. They saw from their personal examples and revenues what agricultural restructuring actually was.

In 1997, the Association of the Fruit Producers of Kiscejke was founded. The Association was awarded support for building a cold storage house financed by the 1997 Phare Rural Development Programme. This cold storage house was very important for the marketing of the fruit. Before fruit had been “sold from the trees”. After the cold storage house was built, the crop was transported there, where it was sorted and packaged. It was very important because of two reasons. First this created new jobs in the micro-region, second they could sell the fruit when the prices were high.

The successful launch and operation of the project suggested that things were going well and no further external assistance was needed.

After a few successful years, however, the expert had to see that the processes should still be closely followed. It had to be ensured that the development and the open democratic processes should not stop. The relationships among the people should stay natural and co-operative. People should pay attention to each other and local solidarity should not be lost. If the participants of the project are not continuously prepared for the occasional problems, and the individuals do not know what their task in the community is, they expect others to make decisions for them – despite the fact that it is the individual that has to get the information, make the decision and act in each situation. If, for example, people understand and are aware of the economic situation, they cannot get cheated; but if they are not, somebody can easily gain a monopoly situation that deteriorates the inner relationships. The case was handled by the re-launch of the discussions and by continuously preparing the people to be informed on the local issues, to solve their problems and assist each other, instead of using one another.

THE SOLTVADEKERT MODEL

The giant village Soltvadkert was depopulated during the Turkish conquest. After the Turks were expelled, the depopulated village was re-settled with Germans and Slovaks, who were given support to start farming. In the 19th century the village community founded a purchasing society, and together they bought a total of ten thousand hectares of land from the landlord. This action strengthened the cohesion of the inhabitants and allowed everyone in the village to get a piece of land according to their financial means. This led very soon to the emerging of a goods producing middle- and petty peasant bourgeois class. In addition, Soltvadkert had low

quality sand soils, which made the population, especially after the phylloxera epidemic, to be evolved with viticulture and fruit production. In the past, a good farmer was somebody, who cultivated his vineyards good. It means, that ethnic or religious belonging wasn't important, it was only important to cultivate the vineyard successful.

Although the communist agricultural policy after 1948 eliminated the bourgeois peasant class, the foundation of "semi-kolhoz farms"¹ allowed the re-start of the bourgeois development for a minority of the inhabitants (Szelényi 1992). A special feature of Soltvadkert is that the plough lands were collectively cultivated, but the vineyards remained private property, cultivated by the farmers.

The collectivisation turned out to have one positive effect: the holdings were immediately specialised. In the 1970s the majority of the agricultural intellectuals became full-time agricultural farmers in Soltvadkert. The other people, like many people in Hungary, worked on two farms – in the co-operative and on the private farms. They were part-time agricultural farmers. They followed the full-time agricultural farmers some in production some in marketing.

As a result of these processes, a middle class with good financial positions emerged as soon as in the socialist period, a layer that made use of both their contacts and capital. This middle class with enough capital was able to invest both for production and consumption purposes (Fertő et al. 1990).

In the late 1970s and early 1980s an entrepreneurial elite emerged in Soltvadkert. Following the political change, those who accepted the extra work of market building were able to keep their entrepreneurial elite position. The example of the parents may have been helpful –some had already found the market for their own wines in the 1960s and there were entrepreneurs who could start their own business with the sales network inherited from the parents. The entrepreneurial elite was enlarged by new entrepreneurs as well, who had pursued viticulture together with animal keeping (pigs and geese) before the political change and for whom making wine had only been a supplementary income, or who had been employees (typically in professions requiring engineering or technical qualifications). Using the opportunities offered by the political change, they became new full-time family viticulture and wine producing entrepreneurs in the nineties (Schwarcz 2000–2001). They had the necessary professional skills and had built out good market relations. Both entrepreneurial elites have their own ways, and using their own capital assets and relationships they have an important integrating role on the local market: they purchase a large amount of grapes and wine from the Soltvadkert producers and sell the wine on the national markets. Their businesses are very well equipped with machinery, they continuously reinvest their incomes into production and they are constantly making plans for acquiring more and larger machinery and transport vehicles and for making quality wines.

After the political change the model of double employment that had been so typical in Soltvadkert before almost completely stopped. The number of those who cultivated vineyards besides full-time jobs drastically decreased. Nevertheless, the share of agricultural entrepreneurs in the settlement, exceed by far the national and the micro-regional average. After the political change, more and more people chose viticulture and wine production, toge-

¹ In Hungary, the total collectivisation of agriculture, including lands took place in 1959–1961, during which some exceptions were made, some organisations were not collectivised. Such organisations were among other things the so-called "semi-kolhoz farms" (szakszövetkezet), which spread especially in the South Great Plain. In these associations, some of the land – especially the orchards and the vineyards – were not integrated into joint farming, they were left to the owners who were able to continue their former farming practices on them.

ther with the marketing of wine, as the primary source of living.

In Soltvadkert former “semi-kolhoz farms” continued to exist after the political change meanwhile it changed into a joint-stock company. It existed with decreased lands, less members and employees. Several people took their lands back or left the organisation, for example the new entrepreneurs mentioned above. The “semi-kolhoz farms” lost its former position as the main organisation of the farmers. This position was taken over by the old and the new entrepreneurial elite, depending on their individual skills and market positions.

THE MÓRAHALOM MODEL

Mórahalom became an independent settlement in 1950, during the large-scale reform of the administrative structure of Hungary (formerly it was a centre of the scattered farms in the Szeged Alsótanya area), then it was given town rank in 1989. From 1949 to 1990, the population living on the outskirts (in the scattered farms) fell from 80% to less than 30%. The speed of the development of the settlement was similar to the rapidity of development of agriculture in adapting to the market economy after the political change. The roots of this rapid and successful transformation can be found in the busy and hard working small peasant community, in the collaboration of the different generations living as one family, in the survival of the association and some elements of the farmer mentality. All these factors alleviated not only rearrangement but also re-start (Duró 2000–2001).

It is very important that after the political change – as opposed to Soltvadkert – the “semi-kolhoz farms” was liquidated, and after 1992 approximately 1,500 individual farmers started – or rather continued – the vegetable growing and animal keeping launched decades before, on 3 to 5 hectares on the average. These farmers had to be made competitive in the changed conditions of market economy, which by no means was an easy and routine task. The machinery was adequate and people had the necessary skills for their work, i.e. the conditions were given for economical production and making products of excellent quality. The farmers were still unsatisfied, because they were not able to sell their products as had been done through the “semi-kolhoz farms”, before the political change. When the farmers entered the market, either as buyers (when they purchased the necessary means for production) or sellers (when they wanted to market their foods produced), they found themselves alone and in a defenceless situation (Nógrádi 1997). This was the moment when the mayor², who had peasant origins and had just come back from Denmark, where he saw of the necessity of assisting the farmers. With his help the local government founded the Department of Agriculture and Businesses, where, building on the trust of the private farmers, they made the organisational frameworks for new co-operation. In the beginning the family farmers could only accept co-operation if the new organisation, considering the historical experiences of the recent past, did not become as co-operative. In 1994 they created the Joint Agricultural and Business Society of Mórahalom³, with 35 founding

² The mayor, keeping his position, became the chairman of the South Great Plain Regional Development Council and then a member of the Parliament representing the micro-region.

³ In the beginning the Society sustained itself from the membership fees and did not have liquid capital for the financing of the purchases. Purchases of raw materials were done from the previously gathered money of the members. The members were informed of the day of shipment, they transported the goods home with their own vehicles and stored the goods in their own homes.

members. The main activity of the society, in addition to the information and exchange of experience of the farmers, was the coordination of purchases. This was mostly restricted to the joint large-scale purchase of fertilisers and seeds, where in case of paying in cash, savings up to 20% were possible. Joint purchases were extremely successful, which gave the co-operation further momentum. The members of the society saw that a much bigger problem than purchasing was the organisation of sales, so the next step was made in the field of marketing. The society decided to establish the Mórakert Purchasing and Service Co-operative of Mórahalom (Mórakert = Moragarden) in 1995. When the farmers felt the direct financial advantages of being organised, they had no more objections to using the name “co-operative”. The number of the founding members of the Moragarden was 52. The co-operative continued to exist and the two organisations operated parallel to each other. The Moragarden became a non-profit organisation created for the integration of the producers, the purchasing of the products necessary for production and the sales of the goods produced. In order to make a significant progress in the field of sales, a change of attitude had to be achieved, as the members were obliged to sell their vegetables to the association even if the price was a forint or two lower than the actual market price. Also, for the launch of sales it was necessary that the farmers accepted the production of the plants that the association recommended. The farmers could spend all of their time on production whereas the co-operative sought the marketing channels. The Moragarden purchased the goods on the spot and re-sold it in large amounts. The Moragarden sold the goods to the exporters and to the Hungarian market. Later, when the multinational retail chains appeared in Hungary, they became the main buyers from the Moragarden. In order to provide a marketable supply of goods, a cold storage house was built soon, together with a vegetable sorter a storage and a packaging facility. The organisation of the processing of the products also started. The financial background of the investments was raised from EU and Hungarian tenders and the contributions of the members. This way the members considered the assets of the association as their own property. The moral and financial support of the local government of the town Mórahalom has been a stable background for the Moragarden since the beginning (Nógrádi 1997). In addition the mayor and the chief executive of Moragarden⁴ who was an employee of the local government in the beginning, had invaluable merits in creating mutual trust and dialogue among the farmers, which led to a kind of new collaboration in the micro-region.

The developments were continuous. For example the construction of the Agro-industrial Park was launched in 1997 on approximately 15 hectares, which accommodated, among other things, the cold storage house and warehouse of the Moragarden, the wooden crates manufacturing part of the Harena Plc. and the vegetable processing plant of the Mórapríma. This latter is a specialised local producers, trade and service association founded in 1999, selling the potatoes and vegetable produced in a ready-to-cook condition primarily to schools, hospitals and other such large consumers. The Harena Economic Development and Integration Plc. was founded in 2000. It is responsible for the coordination of the new type associations, its members include the existing associations and also the Local Government of Mórahalom Town.

In 2000 the Moragarden, as the second such organisation in Hungary, was declared a vegetable and fruit producer and sales organisation, a sort of producer group. Meanwhile the number

⁴ The interviewees of Annamária Duró told that when a young man in jeans came as the would-be chief executive and told them about his plans for the future of the association, even the founding members did not believe him. Later, when they saw the success, they grew so fond of him that they cannot imagine the Mórakert without him.

of members grew from 52 to 750 by 2007. The members live in the 15 settlements surrounding Mórahalom (Figure 2).



Figure 2. A group of members of Moragarden

In 2005 the Bácskakert, an organisation created by the apple producers of Jánoshalma, Érsekhalma and Baja, and the peach association of Zsombó were integrated into the Moragarden. Now the Moragarden (with its headquarters in Mórahalom) integrates a significant part of the producers of south Bács-Kiskun county, and southwest Csongrád county, and it has become the biggest producer group in Hungary.

Mórahalom is an atypical Hungarian model in the sense that 90% of the population is more or less linked to agriculture and 1,800 families involved in agricultural production. This is 17% more than at the time of the political change.

CONCLUSIONS

In the three introduced model of the best practices of rural development I would like to make the following conclusions:

1. The introduced businesses were built on labour-intensive agriculture. Where these kinds of agriculture are developing, there are daily job opportunities for the unskilled and lowly educated poor people. The most important issue of settlement policy has been the provision of work opportunities for the poor unemployed layers, and this is a problem successfully solved by the settlements demonstrated in the study.

2. The bottom-up economic development model consisting with the top down economic development model is a successful model. So it's not enough to use only the bottom up development model in cases of the underdevelopment micro-regions. It means that human resources are very important in the transition period in Hungary. As human resources could be everybody such as mayor, chief executive of the businesses leader of program.

3. Usually, people think that successful rural development needs only the capital (money). But my research experiences show that the capital is not enough (Figure 3).

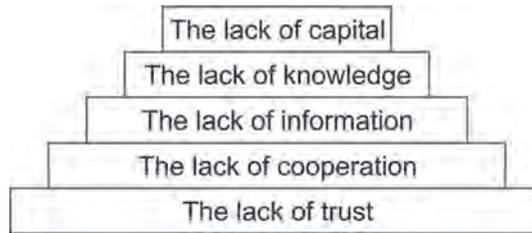


Figure 3. The pyramid of lacks
Source: Köles 1999

In the underdeveloped micro-regions, there is a lack of capital, but also a lack of trust, cooperation, information and knowledge. The settlement I show, sold out the lacks and other settlements have to do the same way.

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POSSIBILITIES FOR THE MULTIFUNCTIONAL DEVELOPMENT OF RURAL REGIONS IN THE CZECH BORDERLAND

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Abstract. In the past rural space was investigated preliminary as an agricultural area. Now, the countryside should be studied as a multifunctional space. The Czech borderland is peripheral because of the distance from centres, mountain positions and consequences of the post-war population exchange. Poorer qualification structure of population is the main problem of the rural borderland. Future challenges for the rural borderland are as follows: dwelling within suburbanization and counter-urbanization processes, landscape maintenance and protection, tourism, forestry, agriculture and water management, other productive and non-productive branches. Possibilities of compensating the peripheral position by cross-border co-operation are the next question.

Key words: rural regions, borderland, multi-functionality, Czechia

INTRODUCTION

Countryside is a part of geographic space which was neglected in the past. It is true that it is not a territory where progress takes place but, on the other hand, the countryside represents a prevailing part of the territories of most European countries including the Czech Republic. Former works of geographic research perceived the countryside mainly as an area for agricultural production. This attitude was also supported in the former socialistic countries by the thesis about a dominant position of the economy.

This attitude is gradually changing under the influence of reality and due to the adoption of theoretical and methodological knowledge from the western countries, where the countryside had been transformed some time ago. Geography discovers the countryside as a space for the life of local residents, for the landscape regeneration and maintenance, and for the development of non-production agricultural and non-agricultural activities (Woods 2005; Bański 2005). On the other hand, such a perception of the countryside clearly requires the use of geographical methodology (supplemented by methodologies of other disciplines) for its research. However, as many times before, the countryside started being first examined by experts in

a number of other disciplines, who are often provided only with partial methodological tools, but who comment upon the countryside as a whole. Will geography miss even this chance to prove its necessity for the society?

The countryside is as a matter of course not uniform even within the small territory of the Czech Republic. It is divided into several types, the most problematic of which being the peripheral countryside which is typically located in the borderland, namely in its dissected areas with poor transport conditions. The paper was prepared with respect to this type of regions.

CHANGES OF THE CZECH COUNTRYSIDE: FROM AGRICULTURE TO MULTIFUNCTIONAL USE

Countryside is usually defined as non-urban space. Various statistic definitions are used in practise, which are usually based on a lower number of inhabitants in the rural settlements. However, it is becoming increasingly obvious that the previous definitions will have to be reassessed. Particularly around large cities a uniform urbanised space is emerging, where the border between city and countryside becomes ever less distinct. With respect to the character of this paper, we understand the countryside to a great extent just intuitively, which is not too far from the sociological definition, which considers as countryside those localities in which people consider themselves being in the country. However, in this paper we do not need to deal in detail with the definition of the countryside, as in the peripheral regions their rural character cannot be doubted about.

The decisive point in the countryside development during the previous regime was to ensure food security for the country itself and for the socialistic block. The methods included concentration of production on the basis of collectivisation and nationalisation, which also created conditions for industrialisation, which means mechanisation and chemicalisation of production. The applied tool was a central plan, in which the production quotas were prescribed. Differences between favourable and unfavourable natural conditions were levelled by a system of subsidies with no regard to values of the countryside and the environment. Abstracting from political and ideological aspects, the regime succeeded in creating relatively prosperous agriculture which was a basis for major social transformation of the countryside.

The situation has changed at present. The Czech agriculture, particularly in regions where natural conditions are less favourable, is not very competitive compared to the massively subsidised agriculture of the European Union and the agriculture in developing countries with minimum labour costs. Fore grounded are other functions of agriculture: landscape maintenance, preservation of a certain employment level in this industry for social reasons and so on. For the future, it is also possible to consider a role of agriculture in the preservation of energy supplies. Even in this case it will be however necessary to resolve the issue of effectiveness of this type of enterprise if it is not subsidised.

Within the framework of suburbanisation and counter-urbanisation processes, it is not only housing that moves to the countryside but also some activities of the secondary and tertiary sectors. These are often installations that require considerable operating premises with only occasional visits by customers (furniture shops, building materials shops, second-hand car

shops and so on). Sometimes it can be a remaining part of the so-called auxiliary production of the former co-operative farms or activities related to the processing of primary products (especially wood processing). Some other services for people living in the countryside are developing, for examples services for drivers or some social services related to the ageing of rural population. On the contrary, a number of services disappear from the countryside, for example schools, due to the decreasing number of children, cinemas due to the competition represented by television and home cinemas, or some retail shops due to the competition represented by hypermarkets.

The countryside is perceived as a space with the less affected environment and closer relation to nature. This entails an emphasis on the development of tourism, agro-tourism, eco-tourism and so on. The actual situation is such that most of the accommodation capacities in rural areas are represented by individual cottages and weekend houses. Cottagers have saved a major part of the rural housing stock which would otherwise probably fell into disrepair.

A major part of municipal and industrial waste is usually disposed in the country where many water resources exist. Therefore, a part of technical infrastructure ensuring the operation of towns is located here. Despite its image of little polluted space, the countryside has to face some environmental problems. These are mainly the consequences of intensive agricultural activities, such as mechanisation and chemicalisation. The individual passenger car transport starts to show its negative consequences and municipal waste includes more plastics and detergents due to its changed structure.

A certain problem of the countryside is the fact that a major part of agricultural as well as non-agricultural plants is owned by capital-strong town inhabitants whose relation to local environment, landscape and social system is indifferent. Moreover, the profit from these plants including a greater part of taxes goes outside the countryside. Therefore, doing business in the countryside is not always beneficial for the countryside.

The way of living has been greatly changing for rural inhabitants. The technical infrastructure in the country has improved. Water supply and sewerage systems are common, a major part of the countryside is connected to gas, municipal waste disposal is organised. Access to the Internet and mobile telephone networks becomes a rather common thing. A reverse side of this progress is the increasing price of housing in the country and a greater dependence of rural households on the technical networks. Problems with the technical infrastructure have very small settlements where the construction of standard technical networks is inefficient and where alternative ways must be looked for.

Housing is a separate chapter of the rural development. The share of rural population is generally increasing in the Czech Republic, not only in the immediate vicinity of large towns but also in peripheral regions. As a matter of course, the situation of individual rural settlements is differentiated in dependence on transport services, specific attractiveness, area preparedness for construction works, human factors. In terms of statistics, settlements endangered by depopulation are those with less than 200 inhabitants. However, not even this rule holds without exception. Especially some villages situated in recreational areas have recently recorded an increasing number of inhabitants.

A question remains the changing structure of rural population. The hitherto experience shows that the countryside is left by young and educated people who try to find a better ground for their capabilities in cities and in the world. On the other hand, it shows that people past

their working age in many cases prefer moving from towns to the countryside. In this way, it is at the same time the population ageing and the relative worsening of its educational structure that show along with the qualitative decrease. However, the conclusions should not be generalised even in this case. Especially in the hinterlands of large cities the population structure may improve as this is where families with children and young people who work in the towns but for whom getting flats is too expensive are heading to. Nevertheless, it cannot be stated unambiguously that living in the country is cheaper. The cost of living depends on the structure of household's expenses. For example, foodstuffs may be markedly cheaper than in the country side due to the competition between hypermarkets.

What should be also taken into account is the change in the rural population way of living. Formerly the countryside inhabitants working in agriculture spent most of their time in their villages as they lived there, worked there and established social contacts there. Holiday was long an unknown term for them and travelling to greater distances was restricted by the former transport possibilities. This was the situation until about the middle of the last century. The present country dwellers are mobile, often working in towns where they also go for shopping, entertainment and for other opportunities while going abroad for holiday. It is therefore a question of how much time the residents registered in rural municipalities actually spend in the country.

RURAL REGIONS IN THE CZECH BORDERLAND – THEIR PARTICULARITIES AND CHALLENGES

Regarding the size and shape of the Czech Republic, border regions cover not a negligible portion of its area. A great part of the Czech state border (with the exception of South Moravia and the Ostrava basin) is created by a natural barrier, represented by less penetrable mountain ranges. This increases the peripheral character of the borderland, which is thus given not only by the distance from central regions of the country but also by the more complicated and time demanding accessibility. Following the changes in the character of the Czech borderlines, some programmes of investigation were introduced (e.g. Jeřábek, Dokoupil and Havlíček 2004).

Consequences of the post-war ethnic population exchange in a greater part of the borderland (except for the new Slovak border) represent a typical Czech problem. The original German population is far from having been replaced by the Slavonic (or Hungarian and Greek) population in the original quantity. Some villages had to give way to coal exploitation and to the establishment of military zones. However, in most cases the newly peopled localities were not economically attractive enough to be settled with the original number of inhabitants. This was not even the intention of the central government which was aware of the fact that the pre-war inclination of the original inhabitants towards Nazism resulted to a certain extent also from the economic peripherality of the borderland.

In the borderland that was added new settlers, the relation of people to the land and to the local community did not develop strong, typical of other rural areas at that time. A specific social climate was created, combining disadvantages of the urban environment with its anonymity and uprooting people from their traditional rural environment with its lack of developmental impulses. The adverse impacts of this development have to a certain extent per-

sisted until today. On the other hand, a small population base was formed in the populated borderland, which has been to a certain extent reproduced so far. Therefore, the demographic characteristics of the additionally populated municipalities are as a rule more favourable than those of municipalities inland.

Not the whole Czech borderland is of rural character. Exceptions are the regions of Ostrava and north-western Bohemia, where the coal exploitation and extraction of minerals have given rise to heavy industry. As a result of this, the regions became centres of mass immigration over the past two centuries. Not only large towns and cities developed in these two regions, but entire urbanised areas. These sections of the Czech border have also their own problems consisting in the consequences of restructured economy and polluted environment. However, they cannot be considered marginal. Particularly the region of Ostrava with three universities and other quaternary functions has a sufficient own potential for growth in spite of the fact that it is remote in terms of transport.

Most of other borderland regions are considered rural, although at a local level there are towns with more than 20 thousand inhabitants sporadically occurring also in the vicinity of the state border (Cheb, Znojmo, Břeclav, Hodonín). A greater part of the state border is formed by mountain ranges, which was considered an advantage at historic times but nowadays the physical barrier further deepens the problem of border regions peripherality which is given not only by distance from the centre but also by poor terrain permeability and complicated road pattern. Exceptions are southern and south-eastern borders, i.e. a section of the state border with Austria and the southernmost part of the state border with Slovakia. These regions are of flat relief with soils suitable for agriculture and vine-growing.

Although the corner of the Czech-Slovak-Austrian boundary is of rural character, it cannot be considered marginal thanks to the open terrain, good transport connection and existence of large rural communes with a sufficiently sized local market which made it possible to retain local production and services. Other parts of the borderland can be considered more or less marginal.

While the demographic situation of the Czech borderland is not expressively unfavourable and the unemployment rate rather reflects the structural transformation of old industrial regions, the main identified social problem is a worse qualification structure of the population. Measured by the share of persons above 15 years of age with education higher than secondary, all 110 border micro-regions (including urbanised micro-regions) are below the Czech average. Micro-regions with very small centres are significantly below this average.

From the economic point of view, the main problem of the Czech rural borderland is the lack of capital, both local and extraneous. Investors are not too interested to invest their money in regions with poor transport accessibility.

However, peripherality is not always a negative characteristic of a region. Remoteness, worse accessibility as well as the existence of the Iron Curtain in the past resulted in a relatively better condition of the environment. Borderland regions include a great part of large-scale protected landscape areas. The relatively well-preserved nature is one of the competitive advantages of the Czech rural borderland and potential for a possible further development of tourism. However, it must also be stated that conflicts arise between nature conservation and developmental interests of borderland communes and business entities.

Many municipalities can see their prospect in the development of tourism. It has to be

however strongly warned that one-sided orientation to tourism may rather do harm to the border microregions. The empirical research has not identified so far a single micro-region that could live exclusively on tourism. If this would happen in extreme cases, the fact might result in landscape devastation by tourism and in subsequent decline of this industry. Tourism is also a branch that is subject to fashion. The importance of individual destinations may therefore be greatly changing.

Agriculture needs to be saved in the rural periphery for landscape maintenance and employment of a small population part. It is also necessary to retain the local industry which reflects worsened qualification level of the labour force. It is useful to develop the sector of services, which is undersized. With respect to the worsening population age structure and the quality of rural landscape it would be advantageous to develop social services in particular. The role of tourism will be undoubtedly increasing in the connexion with life values moving from purely material consumption towards leisure time amount and quality.

Housing in the country develops also in the borderland regions already today and calls for the creation of suitable conditions. It is certainly not any longer the living in houses with agricultural functions but rather in detached houses of urban type, situated in the rural environment. The today's people want to live in the country with having the nature at hand together with all technical conveniences of living in the town. This is why old country houses are being reconstructed to suit the current needs.

CROSS-BOUNDARY RELATIONS: A BARRIER OR COOPERATION?

The question that offers itself is whether opening the state border may potentially open new possibilities and potential for the borderland (see Gorzym-Wilkowski 2005; Lados 2005). The point is whether cooperation with the border regions of neighbouring countries could, to a certain extent, overcome the peripherality from the national point of view. Although a vast majority of the border regions is peripheral also on the other side of the border, in some cases there are more important centres on the other side of the border or such centres could be established through the cross-boundary cooperation.

The existing experience, not only on the Czech side, is not too promising. Although there are many examples of cooperation between large and middle-size towns across the state borders, such cooperation has not been observed at the level of rural regions. The only exception is perhaps the joint nature conservation and landscape protection, since in a number of cases the large-scale protected areas have their counterparts on the other side of the border and their administrators closely cooperate. Discussed is cooperation in building technical infrastructure (roads, bridges, water supply systems etc.). If companies with capital investment from neighbouring countries emerge at the border, their headquarters are often located in remote centres, not immediately in the neighbouring borderland.

On the other hand, shopping tourism thrives making use of different prices on the opposite side of the border. The territorial reach of such a cross-boundary relation is determined by areas where transport costs would not exceed the advantage of lower prices of goods or services on the other side of the border. In a certain period, differences between the prices of services and goods between the Czech Republic and Austria were so pronounced that

Austrian entrepreneurs running their business near the Czech border feared bankruptcies. It is however obvious that the prices in the neighbouring country affect prices in the Czech borderland towards their levelling. The market also flourishes due to changes in the legislation or due to different observance of law in the neighbouring countries. Along the western border there are tens of Vietnamese markets with the fakes of branded goods (particularly known in this respect is the region of Cheb). Special types of tourism are sexual tourism developing in the Saxon borderland and abortion tourism in the Polish borderland.

This also applies to the labour market which is however restricted by protective measures adopted by individual countries. This is why a black labour market may be developing, which is however not typical of the Czech borderland. On the other hand, it is very convenient for German (or Austrian) citizens living in the Czech borderland to work in Germany at a local labour price and to live in the Czech Republic at the Czech costs of housing and services.

A certain hope was laid on the creation of euro-regions which have gradually covered the whole Czech borderland. The establishment of euro-regions was quite understandably often motivated by efforts to win the European money rather than by interest in the co-operation with foreign partners. Besides, the main cooperation logically takes place between larger centres of euro-regions, which are usually situated farther from the border than directly between rural borderland micro-regions. However, the euro-regions fulfil one cardinal function which is mutual learning of people on the two sides of the border, overcoming mistrust, development of interpersonal relations, better orientation in the neighbouring country, gradual overcoming of language barriers.

It appears that this is exactly the objective of the development of cross-boundary cooperation in these days. Each section of the borderland has logically its specific features, given among other things also by their historic development, degree of marginality and border permeability. Creation of functional cross-boundary micro-regions of economic cooperation is more a vision for the future. Should we look for analogies with the inland, we would have to be sceptical. As a rule, there are no viable micro-regions established on the boundary of the spheres of influence of larger centres. However, the borderland may have somewhat different options. The point is that by removing the state border the so far unused potential may be activated in individual cases. In addition, the international, and to a certain extent intercultural cooperation may also bring increased motivation.

CONCLUSION

The intersection between the development of rural micro-regions on the Czech internal periphery and particularities of the development in the Czech borderland represents the present situation of the Czech borderland countryside and starting points for estimating the future development. Monitoring of the borderland situation will continue standing in the centre of research focus. Much needed is the cooperation with geographers from neighbouring countries, which might elucidate the issue and its perception from the other side. An indicator to best signal the changes and to differentiate the rural borderland seems to be the proportion between the qualification structure of rural borderland and inland populations as well as between individual micro-regions of the rural borderland.

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SAPARD FUND AS A DEVELOPMENT FACTOR FOR RURAL AREAS IN BULGARIA

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Abstract. The rural areas in Bulgaria include over 80% of the country's territory and over 40% of its population according to the applied national definition. With respect to the sums, which Bulgaria can get from SAPARD for the period 2000-2006 it ranks third after Poland and Romania.

This investigation is based on selected parameters, presented as normalized mean values. The study demonstrates significant differences between the planning regions in the absorption level of funds from SAPARD Program in Bulgaria. On the basis of this investigation on SAPARD Program implementation in Bulgaria and of the investigation conducted by Rudnicki (2006) for Poland, a comparison is made on the way the SAPARD funds are used in the two countries.

Key words: Bulgaria, rural areas, EU financial support, chance for development

The current development of the rural areas in Bulgaria, is closely related with the possibilities for socio-economic progress, with the changes that occurred in the 1990s, and with the processes of transformation and European integration. Two definitions have been applied to delineate their territorial extension. According to the OECD definition, the rural areas include the whole NUTS 3. In terms of the national definition by SAPARD Program, used for rural development policy and political intervention, the rural areas incorporate smaller territorial units – municipalities (LAU 1) in which there is not a settlement with more than 30 thousand inhabitants. Therefore, differences are observed in the number of municipalities and settlements, included in the rural regions, as well as in the share of population and territory (Table 1).

The rural areas in Bulgaria include over 80% of the country's territory and over 40% of its population according to the applied national definition. The demographic situation in the rural areas is associated with the adverse demographic processes, going on during the recent decades. The population drop is a result of a continuous and aggravating negative natural and migration increase. Emigrants are mainly people in working age. In 1992–2001 the population decrease in the rural areas (11.8%) is twice as high as the average for the country (6.6%). The natural increase in the villages became negative in the mid-1970s and

Table 1. Rural regions in Bulgaria

Type of regions (number)	Regions NUTS3	Municipalities (number) (31.12. 2004)	Settlements (number)			Population		Territory	
			Total	Urban	Villages	Th. people	Share from total population of the country (%)	Sq. km	Share from total territory of the country (%)
Definition by OECD									
Predominantly rural regions	20	193	4266	183	4083	4502.5	58.0	84885	76.5
Intermediate regions	7	70	1029	59	970	2037.3	26.3	24768	22.3
Predominantly urban regions	1	1	38	4	34	1221.1	15.7	1349	1.2
National definition by Program SAPARD									
Rural	N/A	233	4157	200	3957	3232.2	41.6	90277	81.3
Urban	N/A	31	1176	46	1130	4528.9	58.4	20725	18.7
Total	28	264	5333	246	5087	7761.0	100	111002	100

Source: *Natsionalen strategicheski plan za razvitiie na selskite rayoni 2007-2013 godina*, Prilozhenia, 2006.

since then it has steadily tended to be far more unfavourable as compared to the national one. In the rural areas (by the national definition) it is -8.2‰ (2001–2004); its values are negative in all planning regions¹ (Figure 1), though widely varying from one territorial unit to another, and only for the villages it is -12.4‰ (2006). The rural areas are characterized by their ongoing age structure degradation – in 2004 27.2% of the people are above working age and in some planning regions this share is even 30% (Figure 2). These processes have resulted in depopulation over large areas in the country. The demographic processes will continue to adversely affect the social and economic development of the rural areas in Bulgaria.

The services have the greatest share in the structure of the gross value added (55.4% in 2004) and employment (40%) of the predominantly rural regions² (*Godishen doklad...*, 2007). In the service sector operate the big part of the companies, mainly in retail trade and catering. The quality of technical infrastructure in the rural areas has deteriorated significantly, due to under-investment in infrastructure development and maintenance. Industry contributes with about 30% to the GVA and employment. The SME density in rural areas (26 companies per 1000 inhabitants) is much lower than in urban regions (36 companies, 2004). The agriculture participates with a relatively small share – 15.6% of the production and 30% of the employed in these regions, but the latter produce almost two thirds of Bulgaria's agricultural output. Agriculture is an important sector of the rural areas' economy and one of the priority sectors of the present-day Bulgarian economy. In all planning regions (NUTS 2) there are favourable agro-ecological con-

¹ In 1999 six planning regions were outlined in the country which embrace from 3 (Northwestern, Southeastern region) to 6 (South Central, Northeastern region) administrative districts.

² There is no information about GDP and GVA by LAU1, which makes it impossible to demonstrate the GVA structure for the rural areas by the national definition.

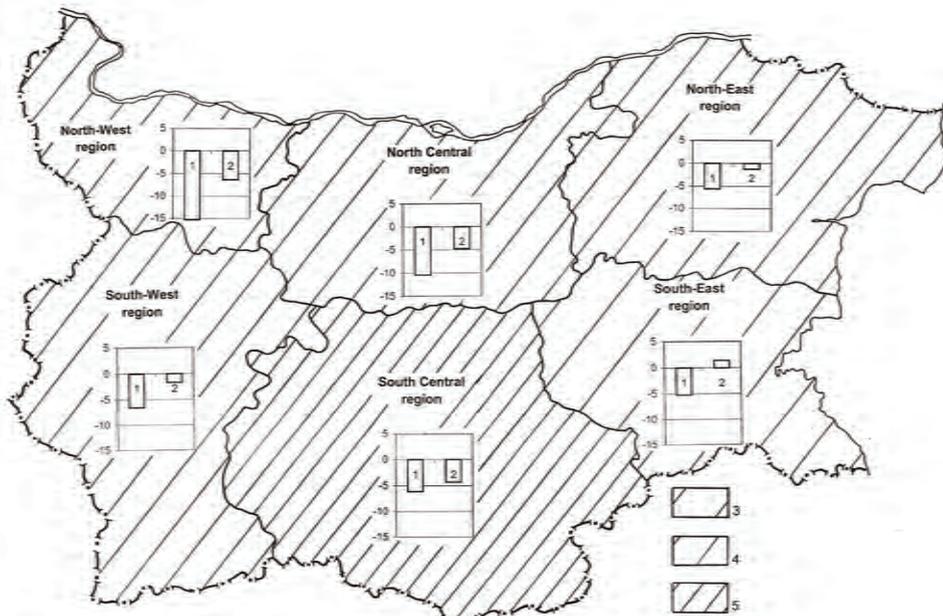


Figure 1. Natural and migration increasing of population in rural areas in Bulgaria (%o, 2004)
 1 – natural increasing; 2 – migration increasing; Rural population density:
 3 – less 30 people; 4 – 30.1 – 40; 5 – more than 40 people

Source: *Natsionalen strategicheski plan za razvitiie na selskite rayoni 2007–2013 godina*, Prilozhenia, 2006.

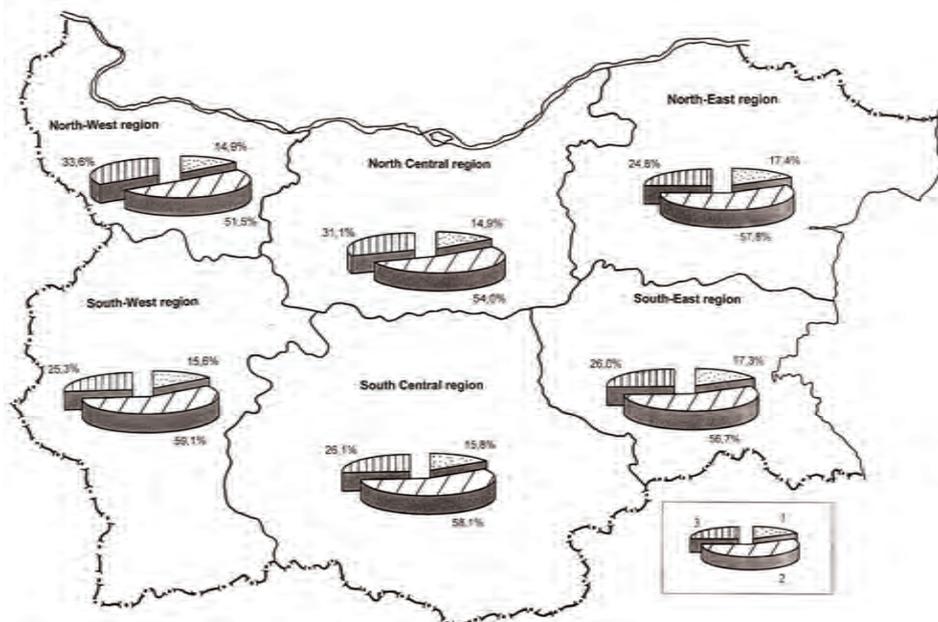


Figure 2. Age structure of population in rural areas in Bulgaria (%o, 2004)

1 – population under working age; 2 – population at working age; 3 – population over working age
 Source: *Natsionalen strategicheski plan za razvitiie na selskite rayoni 2007–2013 godina*, Prilozhenia, 2006.

ditions for its development. The North-East and the North Central regions are notable for their largest UAA area (Figure 3) but the highest is the share of the GVA in the South Central region where both the number of farms (Table 2) and of people employed in agriculture is the greatest.



Figure 3. Rural areas by planning regions in Bulgaria

1 – share from rural areas' territory (%); 2 – share from rural areas' population (%); 3 – share from utilized agricultural area (%); 4 – share from number of farms (%); 5 – share from GVA in agriculture for region (%); 6 – share from employed in agriculture (%).

Sources: *Natsionalen strategicheski plan za razvitiie na selskite rayoni 2007-2013 godina*, Prilozhenia, 2006; *Rezultati ot prebrojavaneto na zemedelskite stopanstva v Bulgaria prez 2003 godina*, 2005; *Statisticheski Godishnik 2005*.

Table 2. Some selected indicators for rural areas in Bulgaria by planning regions

Planning region	GDP per capita (2004, BGN)	GVA in Agriculture and forestry per capita*	Number of farms (Thousands)	Share of smallest farms (less than 2 ESU)	Share of biggest farms (more than 16 ESU)	Size of farms	
						UAA of 1 farm (ha)	Economic units
North-West	4023	1170	66.6	95.3	0.7	4.2	1.3
North Central	3890	1041	100.9	93.4	1.0	6.1	2.0
North-East	4140	1312	119.6	88.7	1.4	8.2	2.4
South-East	4190	1094	73.9	91.3	1.1	5.8	1.8
South Central	4012	1148	191.7	91.6	0.7	2.6	1.4
South-West	7274	902	112.9	95.9	0.3	1.3	0.8
Bulgaria-total	4919	1111	665.6	92.4	0.8	4.4	1.6

** GVA in agriculture and forestry per capita for rural areas' population (BGN, 2004)

Sources: *Statisticheski Godishnik 2006*, *Natsionalen strategicheski plan za razvitiie na selskite rayoni 2007-2013 godina*, Prilozhenia, 2006.

For the last two decades, the agriculture developed at slow rates and until the year of 2001 the agricultural output of the country was less than that during 1989–1991. In recent years, owing to various reasons and factors, the agricultural development has remained unstable against the background of the GDP and GVA steady increase in the whole economy (Figure 4).

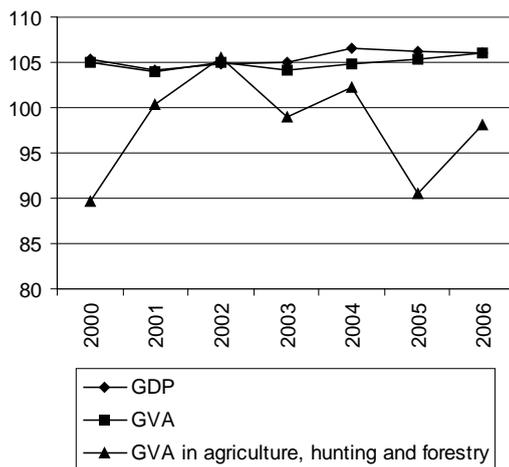


Figure 4. Volume indices of gross domestic product and value added in Bulgarian economy (preceding year=100)

Sources: *Statisticheski godishnik 2005*, *Statisticheski spravochnik 2007*.

Two objectives were set in the National Agriculture and Rural Development Plan (2000-2006). The first objective of the plan focuses on the promotion of efficient and sustainable agricultural production and a competitive food-processing sector, capable of reaching the EU standards. The second objective centres on the sustainable rural development, consistent with the best international environmental practices by providing alternative employment opportunities, economic diversification, rehabilitation and development of infrastructure. The implementation of the above strategic actions integrated in four priority areas (sub-programs), (Table 3).

At this stage considerable investments are needed for the development of rural areas, and particularly for the development of agriculture, for farmers' support, for improvements in the farm produce processing (including food-processing industry), for tourism, for infrastructure maintenance and construction, etc. The local authorities have still limited financial possibilities to invest in rural areas. The investments in agriculture (both national and foreign) are insufficient. Expenditures on acquisition of tangible fixed assets and acquired tangible fixed assets show a steady up-ward trend (Figure 5), but they constitute just about 2-4% of these ones in Bulgarian economy (1999–2005). The foreign direct investments (FDI) are also inadequate (Figure 6) – during 1998–2005 only 0.3% of FDI, which flowed into Bulgarian economy, were allocated for agriculture.

There is a “comparatively low investment activity in agriculture which can be explained with the restricted funds at the disposal of the farmers” (*Agraren доклад...*, 2006, p. 2). The latter have poor chances to invest their own capitals as a result of the transformations that took place in Bulgarian farming in the early 1990s of the bigger and deeper changes in the rural areas of Bulgaria, and their economy during the same period, than in the Central European

Table 3. Priorities and measures under Program SAPARD in Bulgaria

Priorities	Measures
1. Improvement of the production, processing and marketing of agricultural and forestry products, processing and marketing of fishery products in compliance with EU acquis; promotion of environmentally-friendly farming and environmental protection	1.1. Investments in agricultural holdings
	1.2. Improving processing and marketing of agricultural and fishery products
	1.4. Forestry: Afforestation of agricultural areas, investment in forest holdings, processing and marketing of forestry products
	1.5. Setting up producer groups
2. Integrated rural development aimed at protecting and strengthening rural economies and communities	2.1. Development and diversification of economic activities, providing for multiple activities and alternative income
	2.2. Renovation and development of villages and the protection and conservation of the rural heritage
	2.3. Development and improvement of rural infrastructure
3. Investment in human resources – vocational training for agricultural producers and other persons working in the agricultural sector, involved in the agricultural production, forestry and diversification of activities in the rural areas	3.1. Improvement of vocational training
4. Technical assistance	4.1. Technical assistance

Source: *National Agriculture and Rural Development Plan (2000-2006)*.

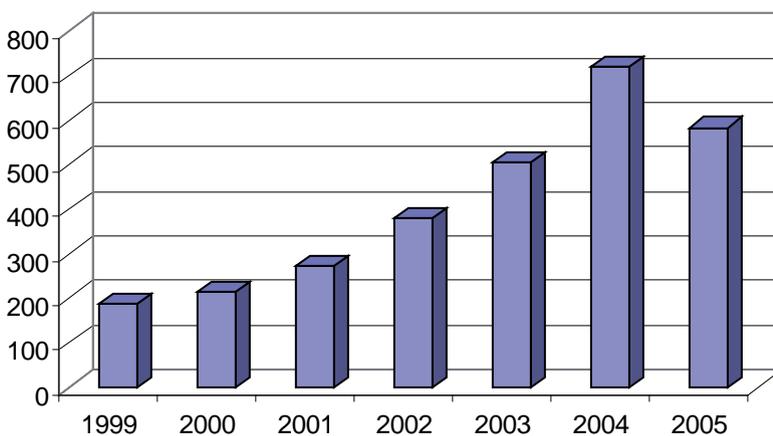


Figure 5. Expenditure on acquisition of tangible fixed assets and acquired tangible fixed assets (Millions Levs)

Source: *Statisticheski Godishnik for years 2000-2006*.

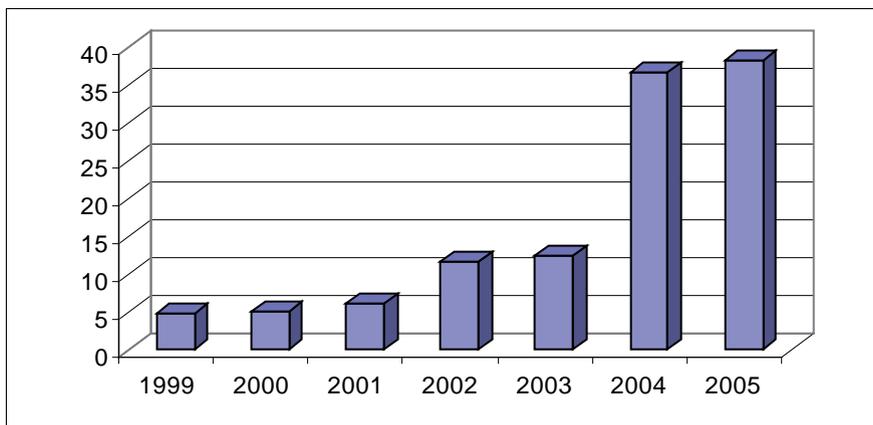


Figure 6. FDI in agriculture, forestry and fishing (Millions U.S.dolars)
Source: *Statisticheski Godishnik for years 2000–2006*.

countries in transition of the longer and less successful transformation process, of the significant fragmentation of land and farms, and extremely, unfavourable structure of farms (Table 2).

The financial support of the farm producers in Bulgaria was negligible as compared to that in the EU countries or other nations in transition; what is more, in 1991–1997 a reverse trend towards confiscation of part of the incomes was observed. “The insignificant support is the main cause for the markedly extensive type of production. Bulgaria is a typical example of a country which is poor not because its agriculture is underdeveloped but quite the contrary – the agriculture is underdeveloped because the country is poor” (Popov 2005). In the following years alongside with their own additional investments, which the farms will use for their development, the investment credits and subsidies are expected to go up. The state support by the State Fund “Agriculture” increased. The budget of the Fund grew 8 times – from 22 million leva to 160 million leva (2001–2004). In the future, financial support is to be given to the small farms and to the farms whose production is partly marketable as there are perspectives for their development (*Natsionalen... 2006*) and to the farm producers, who strictly observe the quality standards. “The creation of better conditions for demand and supply of investments requires that the Bulgarian government should introduce and completely apply the principles of the EU agrarian policy before the country becomes an EU full member” (Petkov 2005). The significant growth of foreign investments, directed to agro-industrial sector, is expected to be one of the most important advantages from Bulgaria’s integration with the EU (Simova 2002).

EU financial support is considered to be one of the main investment sources for the rural areas and agriculture in Bulgaria. Since 2000 under the PHARE, ISPA and SAPARD Programs about 250-300 million EUR has been annually granted for accession preparation (Figure 7). The direct subsidies from the structural funds have roughly been 44 million EUR.

Bulgaria was the first candidate member country, which in May 2001 was partially accredited for its SAPARD Agency, and since 2001 this program has been an extra source of financing and maintaining the agriculture (Figure 8). With respect to the sums, which Bulgaria can get from SAPARD (about 55 million EUR annually and 364 million EUR for the period 2000–2006) it ranks third after Poland and Romania. This support does not replace the national subsidies, earmarked to promote the development of agriculture and of the rural

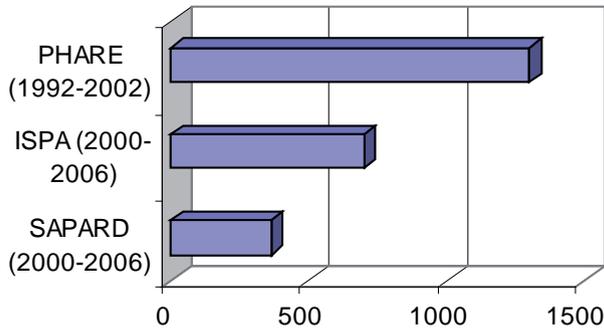


Figure 7. Financial support from EU Programs to Bulgaria (Milion EUR)

regions. In 2003 the SAPARD Bulgarian Agency was authorized to implement 9 out of the 11 measures, envisaged in the program (*Redoven...* 2003). The pre-accession funds under the SAPARD Program are considered to be a decisive factor for obtaining sustainable development in the rural regions (*Agraren...* 2005). For the period 2007–2009 Bulgaria can receive 733 million EUR to encourage the advance of these regions. Other economic sectors (tourism, manufacturing industries, crafts, etc.) will also contribute a lot to the development of agriculture and of rural regions and to the higher standard of living in them. Therefore, it is very important to fully manage the funds, granted for this purpose, as well as to increase the national investments.

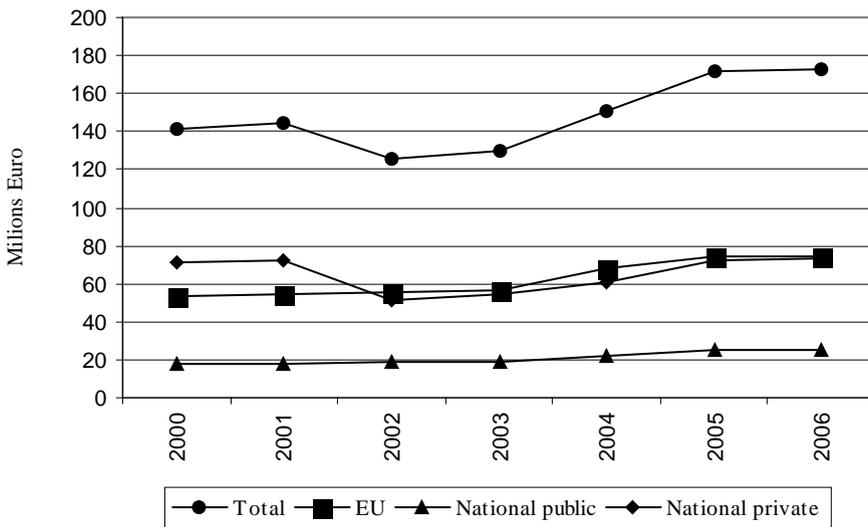


Figure 8. Breakdown of SAPARD funds in Bulgaria
Source: Ministry of Agriculture and Forestry.

The data analysis on financial support until the end of 2006 demonstrates significant differences between the planning regions (Table 4). The South Central and North-East regions are remarkable for the greatest number of approved projects and the most impressive financial support. They offer very good agro-ecological conditions for agricultural activities (Dobrudja, the Upper Thracian Lowland, etc.). These are regions with traditionally well developed farming. The South Central region is characterized by its labour intensive agriculture (vegetables, fruits, tobacco, etc.) and farms which are not large. The agriculture of North-East region is non-intensive (cereals, etc.) and the farms are larger – they have a higher percentage of the total number of farms (Table 2). These regions include both districts, which are actively involved in the implementation of the SAPARD Program (Plovdiv, Dobrich) and districts which are rather passive (Kardjali). The biggest number of projects is recorded in the districts of Plovdiv, Dobrich, and Burgas whereas the smallest one – in the districts of Kardjali, Pernik and Vidin. The biggest financial support has been given to the districts of Plovdiv, Burgas, Stara Zagora and Dobrich, and the smallest one – to those of Gabrovo, Pernik and Kardjali.

Table 4. Geographical distribution of SAPARD financial support in Bulgaria (31.12.2006)

NUTS 2 (planning regions)	Beneficients*		Public subsidies (national and EU)**	
	Number	%	Millions BGL	%
North-West	139	4.9	87.3	6.7
North Central	455	16.1	168.7	13.1
North-East	688	24.3	306.2	23.8
South-East	369	13.0	171.8	13.3
South Central	808	28.5	355.6	27.6
South-West	374	13.2	197.9	15.4
Bulgaria-total	2833	100	1287.6	100

* Any double counting of a single beneficiary simultaneously from several measures and a single beneficiary simultaneously registered in several areas shall be avoided

** on the base of primarily contracts with beneficiaries

Source: *Godishen доклад za izpunenie na programa SAPARD w Republika Bulgaria v perioda 1.01.2006-31.12.2006.*

The author has made an attempt to assess the impact of SAPARD financial support by NUTS 2 on the basis of the available data and the methodology, worked out by Rudnicki (2006), who has carried out investigations on SAPARD implementation in Poland.

The analysis and distribution of the individual measures (Table 5) set out two priorities in Bulgaria. More than half of the approved projects in the country are under Measure 1.1. Investments in Agricultural Holdings. The main objective of this measure is the growth of incomes from agricultural activities, the improvement of the living and working conditions for the agricultural producers as well as the better utilization of human resources (Godishen доклад... 2007). It supports private investments in viticulture and in the production of milk, meat, fruits, and vegetables. This is the most important measure for five of the six NUTS 2, with percentage share from 66.9% (North-West region) to 84.9% (North-East region). Measure 2.1. Development and Diversification of Economic Activities is the main one only for the South-West region (47.1%). The major objective of this measure is to support the integrated development of rural communities by funding private initiatives, generating additional

income and guaranteeing efficient rural economy, better employment opportunity and living standard and reduced migration. It supports investments by private operators in rural tourism, local craftsmanship and agro-industry, wood-processing, carpentry and bio-fuels, mushrooms production, processing of essential oil plants, herbs, mushrooms, etc.

Table 5. Approved projects by planning regions – number and structure by measures

Regions	Number	Share of measures from total number of projects approved (%)										
		1.	1.1.	1.2.	1.4.	1.5.	2.	2.1.	2.2.	2.3.	3.1.	4.1.
North-West	139	66.9	50.3	16.6			33.1	21.6	6.5	5		
North Central	455	69.7	59.1	9.7	0.9		30	25.9	2.4	2		
North-East	688	84.9	75.8	8.7	0.3	0.1	15.1	10.3	2	2.8		
South-East	369	75	63	11.4	0.3	0.3	25	22	2.2	0.8		
South Central	808	69.7	54.1	14.4	1	0.2	30.3	26.1	2.7	1.5		
South-West	374	42.6	20.1	19.3	2.9	0.3	57.4	47.1	5	1.3	0.8	3.2
Bulgaria-total	2833	70.3	56.6	12.6	0.9	0.2	29.3	24.3	3.1	1.8	0.1	0.4

* Any double counting of a single beneficiary simultaneously from several measures and a single beneficiary simultaneously registered in several areas shall be avoided

Source: Author calculation on data from: *Godishen доклад za izpunenie na programa SAPARD w Republika Bulgaria v perioda 1.01.2006–31.12.2006.*

This investigation is based on selected parameters for assessment of regional differences in the absorption level of funds from SAPARD Program: number of approved projects per 10 000 people in the rural areas, number of approved projects per 10 000 ha UAA, financial support per capita of the rural areas' population, financial support per 1 ha UAA, financial support as a percentage share from GDP of the region. The above mentioned parameters have been subjected to mathematical operations (normalization of index value, calculation of standard deviation) and have been presented as normalized mean values. "The integral index, calculated in this way, is assumed to be a determinant for the absorption level of SAPARD Fund which allows to make a distinction between the absorption level by regions" (Rudnicki 2006, p. 26).

Table 6. Indexes of financial support absorption by planning regions

Regions	Number of projects		Financial support			Integral index
	Per 10000 persons	Per 10000 ha UAA	BGL/ 1 person*	BGL/ 1 ha UAA	in % of GDP	
North-West	4.8	5.0	397	316	4.3	-3.24
North Central	8.8	7.4	328	276	3.7	-2.69
North-East	11.8	7.0	525	369	5.8	+2.97
South-East	10.2	8.8	476	409	5.2	+1.53
South Central	9.1	16.6	403	732	4.6	+1.48
South-West	6.2	26.4	330	1400	1.3	-0.04
Average for Bulgaria-total	8.8	9.7	398	442	3.3	-

* rural areas' population

Source: Author calculation on data from: *Godishen doklad za izpunenie na programa SAPARD w Republika Bulgaria v perioda 1.01.2006-31.12.2006* and data from National Statistical Institute.

The existing differences between the individual regions make distinguishable four levels of absorption: very low (with integral index value lower than -2.0), average (value of integral index about 0), high (integral index value 1–2) and very high (integral index 2–4). The North-West and the North Central region have been provided the smallest financial support. With respect to its economy the North-West region is considered to be the least developed one. It is remarkable for its drastic depopulation and population aging but at the same time most of it is endowed with favourable natural conditions for farming and tourism. Quite unexpectedly, the North Central region is also included in this group. It has good soil and agro-climatic conditions, enough arable land and relatively well developed manufacturing industries. It is also suitable for rural tourism and has preserved some traditional crafts in the mountain zone. The South-West region is notable for its average absorption level. The agriculturally better developed regions throughout the country have been more active in the implementation of the SAPARD Program and have received the biggest financial support. The South Central and South-East regions have a high absorption level while the North-East region has the very high one.

On the basis of this investigation on SAPARD Program implementation in Bulgaria and of the investigation conducted by Rudnicki (2006) for Poland, a comparison is made on the way the SAPARD funds are used in the two countries. More active in terms of project proposals is Poland – the number of approved projects per 10 000 people (16.5) is twice as big as that in Bulgaria (8.8). Besides, a much greater concentration of funds can be observed in Bulgaria – the financial resources, allocated and approved for 1 project, are 4 times greater as compared to Poland (re-estimated in EUR). On the average, the support for one person and 1 ha in Bulgaria is twice as high as that in Poland.

In conformity with the specific conditions for agricultural development and the abilities and demands of farmers and communities, different objectives have been set in the two countries and relevant measures have been defined for their achievement. The analysis on the scope of the applied measures in Poland and Bulgaria demonstrates that three of them are identical and this article centres particularly on them. In Bulgaria the measure Renovation and Development of Villages and Protection and Conservation of the Rural Heritage is widely applied whereas in Poland there is not such a measure. Some of the measures are not used in Poland, e.g. Environmental Protection in Agriculture and Afforestation; others such as Improvement of Vocational Training and Technical Assistance have not been included in the Rudnicki's investigation. The measure Development and improvement of Rural Infrastructure has a much wider scope in Poland.

In both countries most of the approved projects are directed towards Investments in Agricultural Holdings (Table 7). Development and Diversification of Economic Activities ranks second in Bulgaria as well as in Poland by the numbers of projects. The next measure in Bulgaria is Improving Processing and Marketing of Agriculture and Fishery Products and in Poland – the Development and Improvement of Rural Infrastructure. As for the financial support, most of the funds in Bulgaria are concentrated in Improving Processing and Marketing of Agricultural and Fishery Products and in Investments in Agricultural Holdings, in Poland – in Development and Improvement of Rural Infrastructure and Improving Processing and Marketing of Agricultural and Fishery Products.

Unlike Bulgaria, where the absorption indexes by territorial units significantly differ from

one another, in Poland they show close resemblance. As it is underlined in the Annual Report on SAPARD Program Implementation in the Republic of Bulgaria for the period January 1st – December 31st, 2006, “the regional uneven distribution of the measures enhanced the disparities among the different planning regions...; the less developed regions also received smaller amounts of funds. The same applies to individual applicants...” (*Godishen доклад...* 2007, p. 30).

Table 7. Relationships between SAPARD Programme measures in Bulgaria and Poland

Measures	Number of projects		Financial support	
	Bulgaria	Poland	Bulgaria	Poland
Investments in Agricultural Holdings	56.6	50.1	34.2	13.3
Development and Diversification of Economic Activities	24.3	24.1	12.9	9.1
Improving Processing and Marketing of Agricultural and Fishery Products	12.6	5.7	35.5	35.3
Development and Improvement of Rural Infrastructure		20.0		42.1
Renovation and development of villages and the protection and conservation of the rural heritage	3.1		9.0	

Source: Author calculation on data from: *Godishen доклад za izpunenie na programa SAPARD w Republika Bulgaria v perioda 1.01.2006-31.12.2006*; Rudnicki (2006).

According to the assessment made in the Agrarian доклад (2006), it can be admitted that as a whole the SAPARD Program has had considerable results related to investments aiming at: better sanitary conditions and health care for the animals; more efficient environmental protection and observing the phyto-sanitary requirements when growing permanent crops; encouraging the investments in agriculture; developing confidence in the European Programs; accumulating administrative experience in implementing the Program; preparing Bulgaria for the successful management of the funds within the framework of the New agricultural fund for development of the EU rural areas. Survey data, collected in the framework of the SAPARD mid-term evaluation up-date (in the end of 2006 – author’s notes), show that 89% of the respondents stated they wouldn’t have made the same investment, 30% wouldn’t have made any investment at all and only 7%, mostly manufacturers, would have made the same investment....; about 80% of the respondents pointed that they have made additional investments as a result of SAPARD financing. SAPARD-supported agricultural holdings and companies are net employment creators; only 24% had a reduction in the number of employees after the investment while more than 75% increased their labour force after the investment; about 88% of them have increased their average salaries (*Godishen доклад...* 2007, p. 30). In addition, an institutional system of control and monitoring, a special institutional system for common agrarian policy implementation, etc., have been created.

In the course of implementing the EU common agricultural policy, the financial support of the rural regions and agriculture will continue in the next years. The EU contribution of additional payments to the direct payments is 145.47 million EUR by current price for the period 2007–2009. The expected funds to be absorbed during the programming period 2007–2013 in Bulgaria will amount to 3242 million EUR of which 2609 million will come from the European

Agricultural Fund for Rural Development and 633 million from national co-financing (*Godishen доклад...* 2007). This financial support will promote the accomplishment of 3 strategic objectives as defined in the Rural Development Program (2007–2013). 42% from the total budget is allocated for the first objective, which will encourage productivity growth and competitiveness of agriculture, food processing industry and forestry sector and thus will contribute to the Lisbon strategic objectives on economic growth. For the measures, associated with the second objective – the preservation of natural resources and the improvement of countryside – is allocated 27% of the total budget. For job opportunity diversification and improvement of the quality of life in rural areas is earmarked 31%.

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**SUSTAINABILITY AND LAND PROTECTION –
– CHALLENGES FOR RURAL AREAS**

HERITAGE IN LANDSCAPE OR LANDSCAPE AS HERITAGE – THE CASE OF LANDSCAPE CHANGE MANAGEMENT IN PROTECTED AND DEVELOPMENT AREAS IN CZECHIA

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Abstract. According to recent development, landscape is not only object of scientific studies, but it is being included in planning policy and practice as well. Along with this emerges the strong sense of landscape as heritage constituting the identity of people on different hierarchical levels. However, should be the management of landscape as heritage treated as inherent part of spatial (physical, regional) planning or restricted only to so called natural or landscape protected areas? The discussion builds on examples from Czechia with the main emphasis on spatial relationships among areas devoted to cultural and natural heritage protection as well as areas dedicated to protection and development.

Keywords: landscape heritage; areal preservation; landscape management; areal development; spatial planning; historical geography; Czechia

INTRODUCTION

Landscape attracts nowadays a lot of attention not only in scientific research, but also in physical, spatial, regional or even landscape planning policy and practice (Sklenička 2003; Selman 2006). Among these it is not only treated as sum of objects and processes (Emmelin 1996), scenery (among others see von Haaren 2002; Krause 2001; Steinitz 2001) or symbol (Cosgrove 1998; Robertson, Richards 2003), system, ecosystem, geosystem or complex geographical system (Demek 1974; Forman, Godron 1993; Lipský 1998; Míchal 1994; Hampl 2000), area, territory, contested territory or taskscape (see Ingold 1993; Olwig 1996; compare with Hägerstrand 1970, 1989 and 1995). It is considered as a specific type of heritage as well (see European Landscape Convention; The World Heritage Convention; Lowenthal 1999; Phillips 1998; compare with Chromý, Jeleček 2005). However, this notion of landscape as heritage places before us many questions we are not always able to answer. What do we mean by landscape heritage? Is it worth of recognizing at all? Should it be protected only in selected areas or should it be preserved as a whole? What is the difference between landscapes in delimited protected areas and landscapes anywhere else? Moreover, many other questions may arise. Especially,

if we discuss the aims, means and practice of landscape heritage protection and management (see Daugstad, Grytli 1999; Farmer 1995; Howard 2003; Lowenthal 1975, 1978, 1985; Lynch 1972, 2004; Negussie 2004). Can landscape heritage be protected only through management of certain landscape elements (see definition of “landscape protection” formulated in European Landscape Convention), since its nature is complex and multihistoric (Daugstad, Grytli 1999; Hampl 2000; Löw, Míchal 2003)?

And it is namely the landscape heritage protection and management as represented by areal preservation practice in particular and its connection to landscape change management as well as areal development, that lies in the middle of our concern in this article. At first the meaning and content of landscape heritage is being discussed. Then we will turn on to current understanding of areal preservation as a form of landscape heritage protection and its relationship to areal development. However, we do not see current understanding of areal preservation as sufficient and unproblematic, so it is being discussed more closely and its alternative definition is being proposed as well.

LANDSCAPE AS HERITAGE: SHORT DISCUSSION

Always we are able to find something from the past that survives, something we have to cope with, whether it remains in minority or not. Inevitably there is present some past that shapes our future (Antrop 1997; Marcucci 2000; Třeščík 2003), although it is not always recognised and has to be created or discovered (Lowenthal 1975, 1985) through the highly selective process (Wishart 1997). And through this process comes heritage to its existence as well.

Heritage includes “everything that people want to save, from clean air to morris dancing, including material culture and nature” (Howard 2003, p. 1). However it is not stable, it changes through time and “moves through discovery or formation, inventory, designation, protection, renovation, commodification and, sometimes, destruction” (Howard 2003, p. 86). Although destruction should not only mean loss of its existence in terms of violence (for example when the favourite cup is broken), but we can also change our heritage, start to appreciate new things instead of the previous ones, leaving them behind (for example of shifting attitudes towards preservation of certain elements see Negussie 2004). Just as the not favoured past is condemned to vanish. The heritage we preserve is inevitably multihistoric, even if it is constructed from components among which those from one period of time prevail or are treated as the most valuable (the problem discussed for example by Daugstad, Grytli 1999). Our heritage is unseparable from our past, it is deeply rooted in it. It is our heritage, whether good or bad, through which our past directs our future steps (Lowenthal 1985). Thus our identity, which can be also geographically defined (Chromý 2003; Paasi 1986), is built on our heritage so strongly, that without it we would have no stable points to form our identity around. If there were no such points, then the surrounding world would appear to us as everchanging unapproachable fuzziness unsuitable to live in. And it is for this need of stable points in space and time we have to protect something we are able to constitute our identity around. And landscape we live in may be one of these.

Landscape is an entity, it is a whole (Naveh 2000), which has its form, function and value (Selman 2006) and is functioning and changing through time. The view of landscape developed

widely by historical geographers and landscape historians and archaeologists, see Darby 1953; Butlin 1993; Baker 2003; Gojda 2000; Bičík, Jeleček, Štěpánek 2001; Muir 2003; Williams 1989; later being discussed also in landscape ecology and planning, see Antrop 1998; Bürgi, Hersperger, Schneeberger 2004; Lipský 1995; Niewójt 2007; Wood, Handley 2001. Landscape has a material substance and shapes directly as well as indirectly our decisions about future actions, restricts and offers opportunities for them (Hägerstrand 1970, 1989; Pred 1984).

Landscape is as much a part of the objective reality as it is a cultural (subjective) concept. In the terms of objectivity landscape is often defined simply as “visual expression of the sum of objects and processes in a given locality at a given time” (Emmelin 1996:16). The territory, system, ecosystem or geosystem (approaches widely accepted in so called discipline of landscape ecology; among others Demek 1974; Forman, Godron 1993; Lipský 1998; Sklenička 2003) or complex geographical system (Hampl 2000). In terms of subjectivity landscape is often defined as perceived scenery or symbol shaping our identity (Cosgrove 1985, 1998; Robertson, Richards 2003). For example, Granö (1997, p. 22 cited in Jones 2003, p. 81–82) defined it as “the total sensory effect, which a piece of land or the sky above it arouses in us (...) the whole perceived environment, not only as a perceived entity but also, and mainly, as an experiential environment”, which as compared to proximate field of vision (proximity), is a distant field of environment perceived dominantly by sight, hence it is not always perceivable, requiring a certain minimum distance and lightning (Granö 1997 cited in Jones 2003, p. 82–83). Daniels and Cosgrove (1988, p. 1 cited in Ingold 1993, p. 154) even argue that landscape is solely “a cultural image, a pictorial way of representing or symbolising surroundings”.

However, landscape is not merely a scenery, “something separate from us” (von Haaren 2002:73; this approach being mostly developed by architects and planners, among others see Krause 2001; Steinitz 2001) and it is neither only culture, nor it is similar to nature as well (Ingold 1993). For Olwig (1996, p. 630–631) it is neither territory nor scenery, instead “it can also be conceived as a nexus of community, justice, nature, and environmental equity, a contested territory” (compare to concept of taskscape by Ingold 1993; see also Hägerstrand 1970, 1989 and 1995; Pred 1984). Landscape is an inseparable part of our everyday environment, in which we have to act and live. We are inseparable part of the landscape we live in, though we are able to distinguish ourselves from it at the same moment (Tress B., Tress G. 2001). “And through living in it, the landscape becomes a part of us, just as we are a part of it” (Ingold 1993, p. 154).

Landscape is then a perceived entity within which and with which we interact through our everyday practice. Since it is being recognised it becomes a more or less favourable part of our heritage, something important to and/or for us. Thus landscape, as this way connected to quality of our life, needs protection, management and planning (European Landscape Convention). European Landscape Convention then defines several terms connected to this need, such as landscape quality objective, landscape protection, landscape management and landscape planning. However, since landscape protection is in terms of the European Landscape Convention being defined as “actions to conserve and maintain the significant or characteristic features of a landscape” and landscape management as “action (...) to ensure the regular upkeep of a landscape, so as to guide and harmonise changes”, what is their relationship? Is it appropriate to define landscape protection so nearly? Isn't it so that in management and

planning policy and practice landscape should be rather treated as a framework (Selman 2006) than as a specific object? Furthermore, since landscape may be treated as a whole (Naveh 2000), more than the sum of its parts, do we really protect landscape through protection of significant and characteristic features, its parts?

AREAL PRESERVATION AND AREAL DEVELOPMENT, NECESSARILY IN OPPOSITION?

One significant form of landscape protection is areal preservation. This may be, in contemporary understanding, defined as a more or less successful management of certain characteristics or elements in particular areas selected and delimited for its protection, which may be according to the purpose of their designation divided into several categories (eg. natural or cultural, large or small, devoted to overall character or elements protection). Those areas are usually defined by particular laws. For the case of Czechia these are especially the law on care of historical monuments (Zákon č. 20/1987 Sb.) for cultural heritage areas and the law on protection of nature and landscape (Zákon č. 114/1992 Sb.) for natural heritage areas. Natural heritage areas are bigger in its extent and may involve whole landscapes whereas cultural heritage areas take only a small part of it generally. Since protected areas are believed to have some exceptional heritage value, which is worth of protection, areal preservation is then usually thought of as a range of activities proposed and guaranteed by special institutions created to guarantee the fulfillment of the protected area designation objectives and may be sometimes perceived as being connected with posing unnecessary restrictions on areal development. And as connected to landscape protection, management and planning, it may be argued that this way defined and practiced areal preservation is the protection of heritage in landscape rather than the protection of landscape as heritage.

In general, as a opposition to protected areas, development areas and axes are usually being distinguished. In the case of Czechia these were recently proposed and defined by government in the so called Spatial Development Policy of the Czech Republic (Politika územního rozvoje České republiky). Main purpose of this document is to define priorities of spatial planning on national level. According to this document the territory of Czechia is divided into four types of areas on the level of districts of municipalities with extended competencies: 1) development areas, 2) development axes, 3) specific areas and 4) other areas (see Figure 1). Among these, development areas and axes in particular were defined as territories devoted to concentration of activities of national and international importance, so character and values of other areas may be maintained. But what is then the relationship between cultural and natural heritage areas and development areas and axes?

At first simple typology of areal preservation importance on the level of districts of municipalities with extended competencies was made. On the same level development areas and axes were delimited (see above), so later both typologies could be compared. The proposed typology of areal preservation importance was based on data about delimitation of selected protected areas of natural as well as cultural heritage. For each municipality the importance of areal preservation was calculated, its value being based on protected areas density and its percentage share of area of certain municipality. This way the overall evaluation of areal preserva-

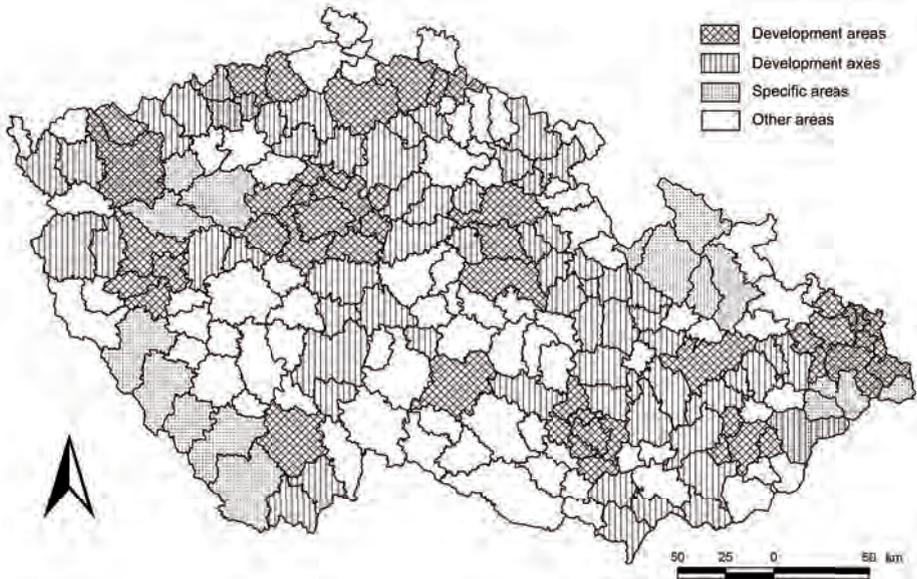


Figure 1. Types of areas as proposed in Spatial Development Policy of the Czech Republic, districts of municipalities with extended competencies, Czechia, 2007

Source: Politika územního rozvoje České republiky

tion importance (see Figure 2) as well as the comparison of importance of cultural and natural heritage areal preservation (see Figure 3) was made for each district of municipality.

However, for several reasons the results of the typology should be interpreted very carefully. The selection of certain protected areas the typology was based on may seem quite arbitrary. The typology does not say anything about the goals of protection and how they are being fulfilled in chosen protected areas. This may vary greatly among them. Thus we should treat the typology rather as mean than the result of our research. Certainly this typology needs further discussion which will be later conducted through the research in selected case study areas.

In the next step, the typology of municipalities based on areal preservation importance was compared with delimitation of development areas and axes explained above. Results of this comparison are shown in Figure 2 and 3. There may be found development areas and axes where areal preservation is very important as well as those in which it is not so important (see Figure 2). However, where there is areal preservation important in development areas and axes it is mainly represented by cultural heritage protection or the importance of cultural and natural heritage areal preservation is similar (compare Figure 2 and 3). The districts where there is the main goal of areal preservation the natural heritage protection are mainly those areas that are outside the development areas and axes (see Figure 3). And since natural protected areas may involve whole landscapes whereas cultural heritage areas are small in its extent, take only small part of particular landscape as we have stated above, does it mean that landscape in development areas and axes is worthless? Moreover, may this landscape become a “lost landscape” (in terms of Arnesen 1998)?

We argue that there may and should be another definition and understanding of areal preservation proposed. Any landscape has some (heritage) value and may be worth of protec-

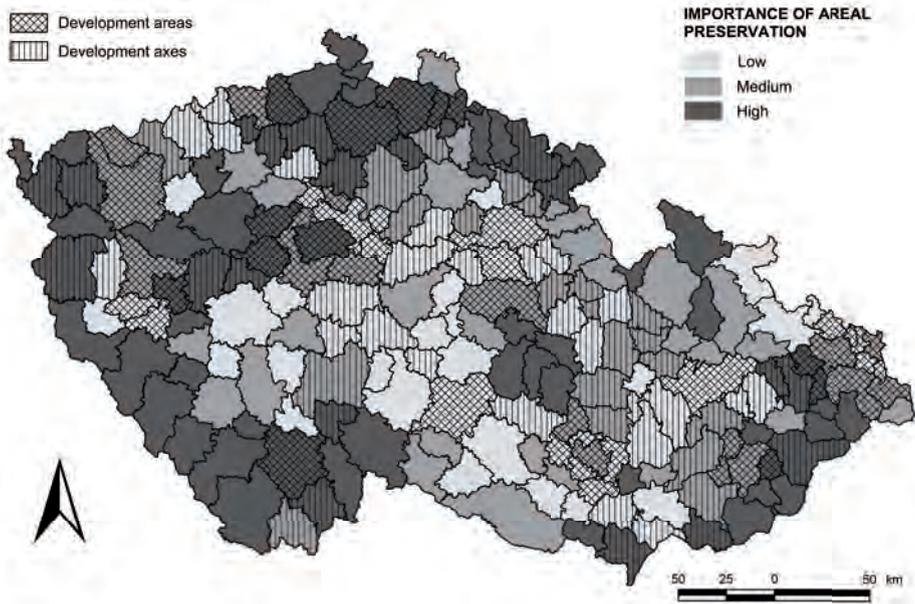


Figure 2. Overall importance of areal preservation compared to development areas and axes, districts of municipalities with extended competencies, Czechia, 2007
Source: Authors

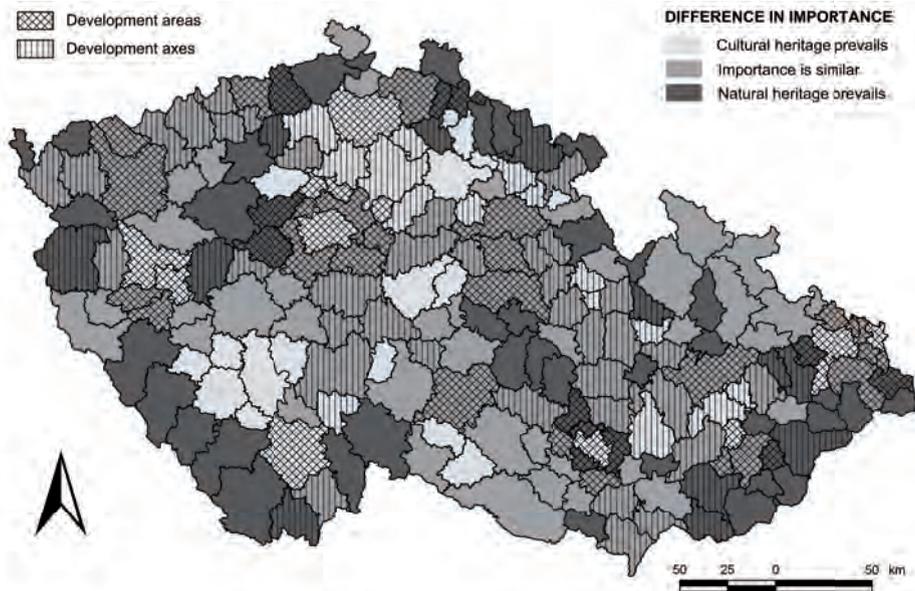


Figure 3. Difference in natural and cultural heritage areal preservation importance compared to development areas and axes, districts of municipalities with extended competencies, Czechia, 2007
Source: Authors

tion (see for example European Landscape Convention), thus areal preservation should not be connected only with selected protected areas (Selman 2006). Instead it should be regarded as an inherent part of management and regulation of changes in landscape as a whole, being directly applied through protected areas designation (Powell, Selman, Wragg 2002; Selman 2006) and indirectly through other tools used in (spatial, physical, regional or landscape or anyhow it may be called; see Hall 1992) planning policy and practice. Whereas direct tools, the designated protected areas itself, are used for protection of particular part(s) or character(s) of landscape(s) guaranteed by state, by indirect tools are meant all the other tools which were not primarily created for the purpose of protection. Although being defined for different purposes, for example in Czechia they are both used separately under its own institutions and modes of application, these tools are or should be used together in practice.

Understood as this, areal preservation embraces not only particular activities or tools, but also attitudes towards our everyday environment, landscape we live in. This definition being not so far from the concept of “environmental humility” once suggested by Relph (1981) or the opinion of Míchal (2001), who stressed the need for definite change of attitude from conservation to management in areal preservation, expansion of the protection of nature and landscape on “growing the nature”, and most importantly, simultaneous care for natural and cultural values of landscape as human environment.

CONCLUSION

Landscape heritage is (or at least should be treated as) a synthesis of both, natural as well as cultural heritage (Löw, Míchal 2003; Míchal 2001; Naveh 2000). Areal preservation is one of the main tools of landscape heritage and landscape changes management. So, it should not be concentrated merely on conservation (of the character of some area for example), it should be rather a tool for and inherent part of areal development. An attitude towards management of landscape as a whole, because it is important in areas that are not exposed to some kind of development as well as in those that are exposed. All landscapes are in some sense cultural, so there is and always will be constant desire for cooperation between cultural and natural heritage protection practice as well as their cooperation with other actors involved in areal development. But since there are no sufficient general rules for distinguishing valuable landscapes (Lowenthal 1978) and hardly ever will be, the ways how to bring landscape protection into practice will be always under discussion (Daugstad, Grytli 1999; Farmer 1995; Phillips 1998; Palang, Kaur, Alumäe, Jürimäe 1999; Selman 2006).

Their still remain some considerable questions for which it is necessary to seek the answer through the constant process of negotiation. For example, how important is and should be areal preservation in areal development and landscape management? Are there any opportunities for cooperation between areal cultural heritage and natural heritage protection? What are their similarities and differences? And at last the question we should see as the most important. Does, or at least may, areal preservation positively affect regional development and future landscape changes in certain area as a platform for cooperation, or is it rather a source of conflicts?

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SPATIAL CONFLICTS OF LAND-USE CHANGES ON THE RURAL AREAS OF SOUTH GREAT PLAIN REGION

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Abstract. The research – which is the base of this paper – examines the effects of different social, economical and ecological driving factors of the land use changes at the border areas of the South Great Plain Region. The multidimensional model is used to analyze interactions at the landscape-scale hereby it helps to understand the dynamic of the changes, and also contributes to develop “best-practices” at the landscape-planning. The different kind of land use conflicts depend of the target of spatial planning. This paper tries to present the methods and the semi-results, which can be used to examine the problems.

Key words: Land use change, Land use conflicts, multidimensional model, driving forces

INTRODUCTION

There are several reasons that land use has been one of the main issue in the last decade. The EU's Lisbon Strategy is heavily based on the economy concepts of innovation, the “learning economy” and the social and environmental renewal. In this context the local governments are suffering from more and more fiscal problems of the increased service demands that come with development. Several problems and conflicts grow up when new road are being constructing or at housing activities. Using nature resources and nature conservation activities have also big impact on the land use. The permanent changes of EU and national policy mainly have an affect on the agricultural areas.

The community efforts to address land use in South Great Plain are increasing. All of them are manifest in the different type of national and local land use planning and policy. This is the main reason of the increased attention to the land use and land use change.

Another aspect of the landscape research today is how a land use type of a given area suits the land capability and what sort of social activities can be placed with the minimum risk. Human are – as determinative factors of the landscape – have more and more influence on

the functioning and shaping of the landscape. The changes by the human activities explain the necessity of the research, as nowadays it is evident that people play important part in shaping the land.

The goal of the research is to explore the antropogen-technogen process in the landscape as driving forces which are choose by the aspect of the nature-society interaction and also to get to know the structure and function of the landscape.

The aim of the study is to introduce some problems of the land use by a new spatial explicit model.

STUDY AREA

The South Great Plain Region (SGPR) is the largest one in Hungary, located in the south eastern part of the country covered by Bács-Kiskun, Békés and Csongrád counties (Figure 1). Most of the territory is flat – no more than 200 m above sea level – and rich in diverse natural assets and landscape. The region covers an area of 18 339 km², which is 19.7% of the total area of Hungary.

The South Great Plain Region has a continental climate and the region enjoy more sunshine than anywhere else in Hungary. It is also one of the dries regions of the country. Annual

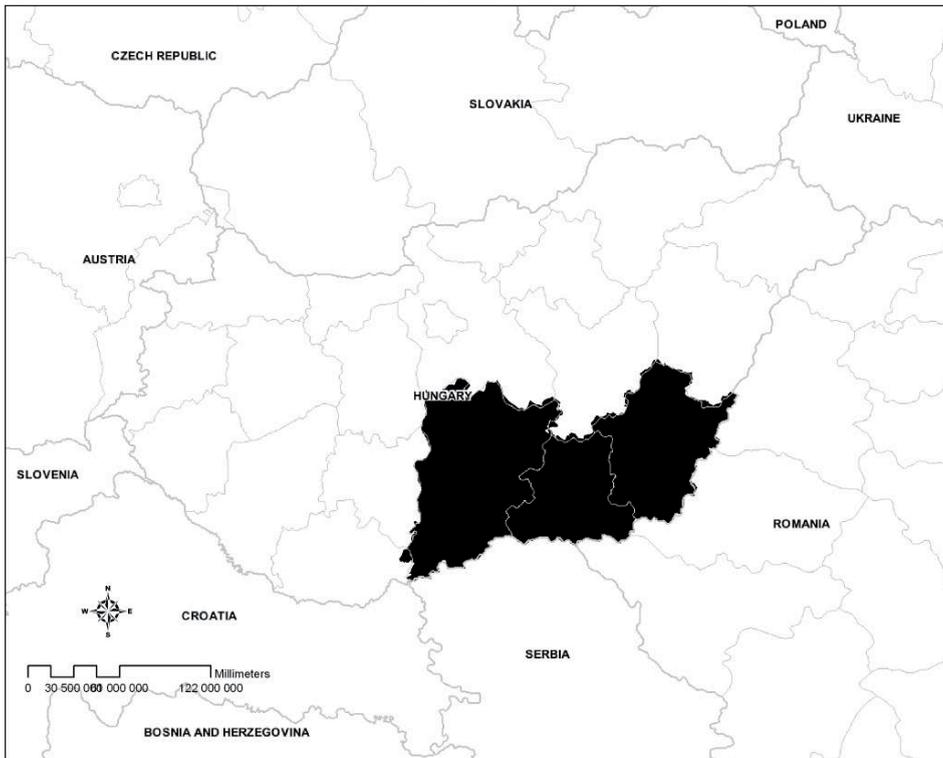


Figure 1. Study area

rainfall is around 600 mm in the southern part of the Danube Valley and in the south east, but as low as 500–550 mm in the Kiskunság area. Comparing to the last third of the last century, the yearly fall decreased by more than 110 mm in the southern areas along the state border, which intensifies the 100 – 150 mm water shortfall which is typical in this region's climate.

The outstanding quality of the soil in the territory of Békés and Csongrád counties plays a significant role in the economic life of the region. In this region the 66% of the 1.6 million hectares agricultural area is cropland. In terms of the physical attributes of agricultural land, it is likely that the expected impacts of climate change (draught, decline in the groundwater level, warm winters) will affect the whole region.

Most of the land of the region is suitable for agricultural use: in the year of 2005 83% of the total area was agricultural land of which 76% was cropland¹. 88% – of cropland was private property. The structure of the landscape is mainly mosaic and characterized by low proportion of forest and pastures.

13.4% of Hungary's population (1,355,000) live here; the population density is 74 people/km². Given the number of municipalities (254 being the smallest number within one region compared with the rest of the country) and the size of the region (this is Hungary's largest region) the South Great Plain Region has the lowest density of municipalities in Hungary. However with it's 47 towns, it is still the second most urbanized area of the country after the North Great Plain Region. At the beginning of 2006, 65% of the population of Bács-Kiskun County lived in towns, while this rate was almost 71% in Békés County and 74% in Csongrád County. Apart from a few exceptions (e.g. the county town of Kecskemét and Mórahalom, which is part of the suburban area of Szeged) the urban population is decreasing at a similar rate as the region's overall population. The urban population is decreasing as the region's overall population.

Among the 25 statistical micro-regions of the South Great Plain, 7 belongs to the group of the 48 most disadvantaged micro-regions in Hungary, there are 157 backward settlements and 13 important settlements from tourism aspects.

LAND USE DYNAMIC

Landscape change does happen when gradually the land cover transforms to a new dominant type and also causes structural change (Antrop 2003). Another landscape will be formed when the new forms of land use demand larger fields, special treatment of the soil, terrain levelling, removal of hedgerows and new enlarged roads. Change refers to the alteration of the structure and function of the land-use mosaic through time, caused by changes in the distribution of the population (e.g. urbanization) and changes in the biophysical conditions (e.g. climate change or soil degradation). Change and continuity are also related to speed and magnitude of the overall land use and land organization. A good example is land abandonment in Europe which is due to severe changes in agricultural economics. This includes forest converted to agriculture, agricultural lands converted to suburban development, suburban development converted to urban areas (Sanderson et al. 2002).

In SGPR between 1990 and 2004 14% of the total land cover change affected arable land and 52% of this land abandonment covered by pasture and homogeneous land cover types.

¹ Data based on Corine Land Cover 2000 and Hungarian Central Statistical Office 2006.

There are two important questions concerning land abandonment: where will it happen if no policy actions are set and which areas will be more or less affected if e.g. subsidies are increased or decreased? The identification of risk zones may help planners at local, regional and national levels, to focus their activities on problem areas and to differentiate strategies between low-potential and high-potential areas. In highly human-influenced landscapes certain processes (e.g.: land abandonment) must be planned and its methods must be explicit and replicable. The spatial organization of the composing elements is a key to describe the functions and processes within a landscape. If the composition changes their connecting relationships will change too, since the functioning of a landscape and its structure are intimately related (Forman and Godron 1986; Dramstad et al. 1996; Antrop 2000; Turner et al. 2001; Nagendra et al. 2004).

Summarise the above mentioned facts we could get the answer for the question: why agricultural land use so important? Because 87% of the land cover change of the SGP between 1990 and 2000 are covered by agricultural areas.

The professional literature calls the social-economical, organisational and environmental factors of the land cover changes driving factors of changes (Adger, Brown 1994; Blaikie et al. 1994; Turner and Meyer 1994). On the one hand these driving factors are the direct impacts of the physical environment (deforestation, urbanisation, cultivation (Turner and Meyer 1994)) on the other hand these factors mean landscape modification activities of the individual or social groups (Blaikie et al 1994; Geist, Lambin 2002).

The driver factors of land use change have influence on their environment from local to regional level. The local economical structures, the accessibility of nature resources, the corruption, the properties and the different local laws are the direct impacts. The regional and local driving forces are more dynamic and flexible like global ones, moreover these more depend on the characteristic of the narrow environment.

Root causes of the changes could not explain the change itself fully. These forces permanently interacting and only analyse in the context of the social, economical and environmental aspects (Turner, Meyer 1994, p. 262). Furthermore the interactions between land use changes and landscape pattern are more and more intensive (Gallopín 1991).

Changes in the land use also includes their possible consequences which can be positive or even negative, depending on the affected group (individual, community, group of people). These kind of consequences can result in conflict situations.

Agriculture is shaping the land. Special conflict situations can evolve different objectives of land use like human versus nature, agriculture vs. nature conservation, infrastructure development vs. semi-natural areas, tourism vs. protected areas. Landscape structure and biodiversity highly depend on the methods, the character and the intensity of farming systems.

When the interplay between these two types of factors results in land use change, this can feedback on the macro-scale conditions, e.g., through changes in the supply demand characteristics of an agricultural product. On the other hand, a land-use change at a particular location can also affect characteristics of the location of change itself, e.g., through erosion or nutrient depletion. These processes will affect future land-use options at that location. In this paper I focus on feedbacks at this local scale, while macro-scale processes are only implemented as scenario conditions, disregarding the feedback of land-use change on macro-scale processes.

DATA AND METHODS

Currently, we are lacking methodologies which incorporate processes of human settlement and agriculture and the natural forces that have created a landscape into spatial planning. Based on a review of literature dealing with the explanatory factors of land-use patterns (Turner II et al. 1995; Kaimowitz and Angelsen 1998) a large set of factors were selected that are possible predictors of the land-use pattern in Hungary, especially in the SGPR. For these factors spatially explicit information was collected.

In this paper I will examine the possible effects of the spatial policy generated macro-factors on the rural areas of Hungary especially in the agriculture sector.

There are several trends and scenarios in the agriculture are based on the objectives and priorities of the national Strategic Plans. In the Hungarian agriculture and rural development policy² have two main strategic goals which handle the rural areas: the first is about the spatial conservation and development the natural heritage of the landscape, it means strengthening of landscape identity, moreover revitalization of the human-landscape linkages, rehabilitation of the degraded areas, biocultivation, nature-friendly economy activities, traditional agriculture, ecotourism and natureparks. The second objective is strengthening the local cultural heritage and social identity. In the National Spatial Development Concept³ the rural area means: Natural environment, high portion of green areas, low pressure of the economy and the population; It has mainly agricultural, touristic, ecological and residential functions.

Many social and economic data are only available for certain administrative levels. What is needed is a regionalisation of statistics through an integration of various types of information (measurements, sample data, areal data). The data based on statistics are valid for 2004. Most data were derived from agricultural and demographic statistics or surveys, linked to administrative boundaries in a Geographical Information System. Biophysical data were derived from digitised maps, land use types were derived from CORINE Land Cover 2000 database.

The CLUE-s (Conversion of Land Use and its Effects) model is a land-use change model that has already been used and validated in a wide range of applications (Veldkamp et al. 2001; Verburg and Veldkamp 2004). The model is especially useful for assessments of changes in complex spatial patterns of land-use change because of the explicit attention that is given to linkages between the temporal and spatial dynamics of land-use change. CLUE-S is a spatial analysing tool to examine the different scenarios driven land use changes (Verburg et al. 2002, Verburg and Veldkamp 2004 and Verburg et al. 2004).

The model consists of two modules: a non-spatial demand-module and an allocation-module, which is a spatial allocation procedure (Figure 2). The first step was to analyse of the aggregated demands of all land use type, the second step was to allocate the driving factors of land use change and the third step was the raster based GIS spatial analysis of land use changes related to different land use demand.

The input dataset of the demand-module was different type of database of alternative models. It consisted several statistical-administrative data, result of researches, empirical data and dataset of social-economical scenarios gathered in GIS.

The allocation-module are featured by the explanatory factors of the spatial policy

² New Hungary Rural Development Strategic Plan 2007-2013 (ÚMVT)

³ New National Spatial Development Concept, 2005

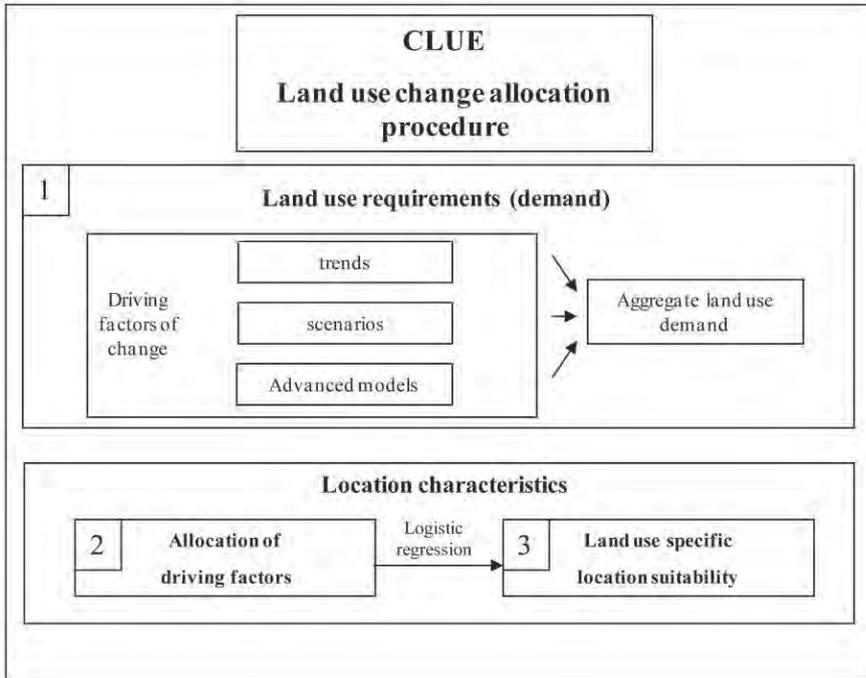


Figure 2. Structure of the model
 Source: Verburg et al. 2002

which is the main parameter of the location suitability. Analysing of this suitability is highly affected by the land use specific bio-physical and social-economical factors, giving chance to allocate the most suitable area for a certain land use type. The spatial development policy and the different property situations have also influence on the spatial patterns of land use. These are very important input factors of the model especially when we examine the rules of land use restrictions.

The land use specific location suitability is the combination of empirical, spatial analytical and dynamic models (Figure 3). The empirical analysis helps to understand the relationship between the location of certain land use and the factors that determine the land use type, and to predict the possible future dominance of these land use types. All of these “rules” and demands could refine by the regulations of decision-mechanism.

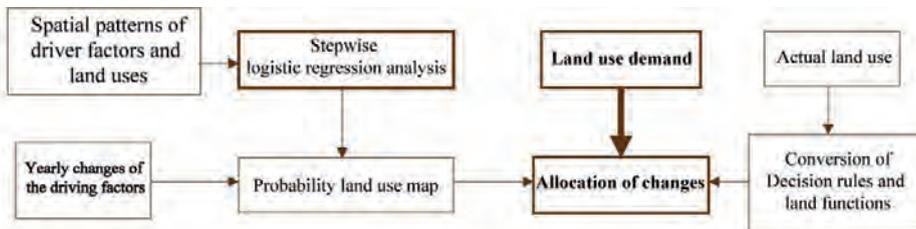


Figure 3. Land use specific location suitability
 Source: Verburg et al. 2002

The allocation-module calculates the parameters with determines the different land use types in different time-step (e.g. one yer). The location characteristic is based upon a spatial analysis of the complex interaction between land use, socio-economic conditions and bio-physical constrains. By the base assumption, the most probable occurrence of a certain land use type is where the suitability factor is the highest. A stepwise regression procedure is used to identify the biophysical and socio-economic factors that contribute significantly to the explanation of the variability in landuse distribution. In this way it is possible to distinguish which factors have relevance for the spatial pattern of land use. The regression model is used to calculate the cover percentage of the different land-use types under the biophysical and socio-economic conditions in a certain grid cell. It is also possible to predict different land use situations based on different scenarios (Figure 4)

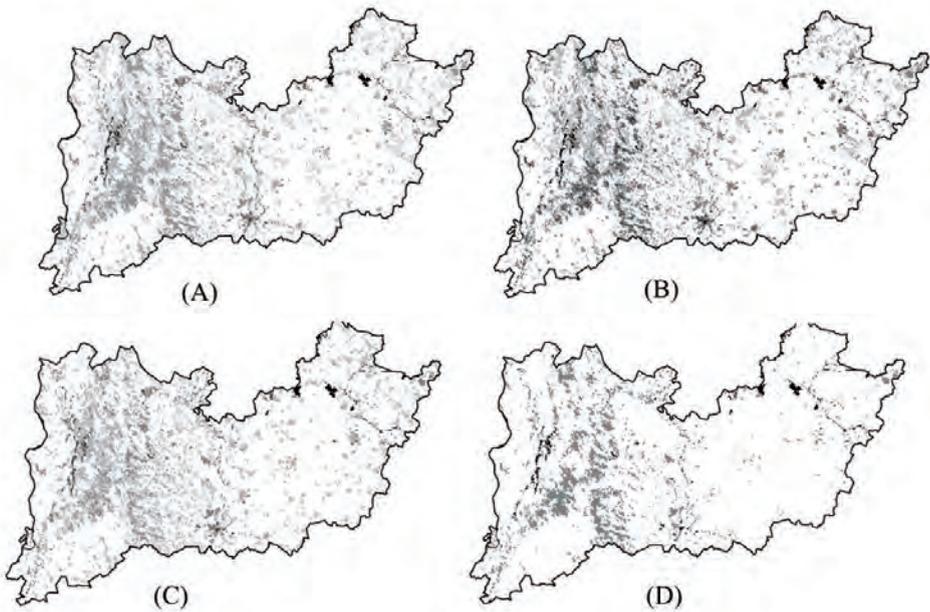


Figure 4. Probability land-use map

(A) Land use at the null point of the simulation (2007); (B) Base-line scenario (2020);
Nature conservation scenario (2020); (C) agro-environmental scenario (2020)

Thanks for the high resolution of the pixels, the model can be used both continental and national level. The CLUE-S model (Verburg et al. 2002) is a more detailed version of the method (small-scale) where the regional processes are well monitored.

RESULTS

In this chapter I present a short overview of the semi-results of the overall research in connection with the land use requirements and the allocating procedure of the driving forces.

At the first step of the allocation procedure in context of the Gold crown value of the land in SGPR⁴, we have to aggregate our dataset directly to the agricultural areas (Figure 5). The result is that 50% of the agricultural land has good and excellent quality. This is the bio-physical and economical capability of the land. On the other hand, producing bioenergy is one of the most subsidized activities in the EU and Hungary as well. In the agriculture sector, it means that most of the crop land will convert into biomass production.

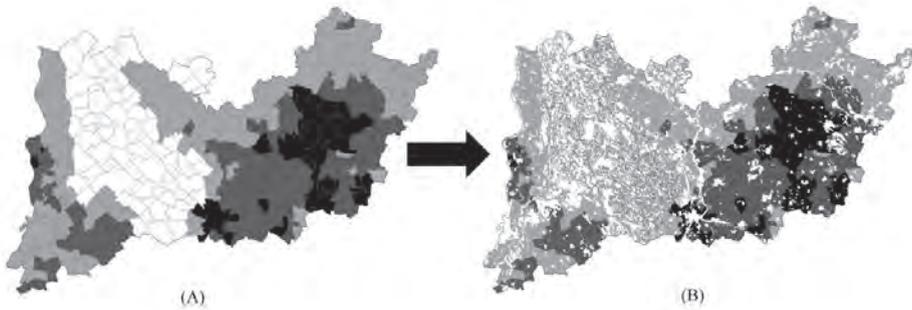


Figure 5. (A) Gold Crown value of the land by micro-regions
(B) Gold Crown value of the land by agriculture land

In the next step, if we examine the bio-physical and economical factors driven land use process at a lower spatial level (Csongrád county) where the proportion of the valuable areas are high, Figure 6 gives the arable lands of the county having optimal biomass potential.

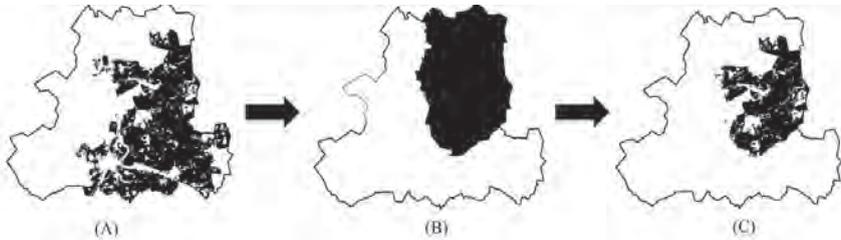


Figure 6. (A) good and extra good quality of agricultural areas; (B) biomass production (dark colour is the highest); (C) optimal biomass production areas

Although a certain location may have suitable conditions for a number of land cover types (e.g. arable land for biomass production) its available land area is limited. This is a competition between the land cover types. For example, the nature conservation activities are highly modifying the land use of a certain area (Figure 7). These areas are potential conflict areas that emerge from the agriculture and the nature conservation land use competition. Competition between the land-use types is implemented by modifying the changes in land-use types according to the competitive strength of the different land-use types. The competitive strength depends on both the difference between present cover and future cover and the change in demand.

⁴ The quality of soil is measured in Gold crown value (GC). The scale ranges from the poor (5-15 GC) medium quality (15-25 GC) good quality (25-35 GC) to excellent quality (35 > GC); net incomes of a land unit (productivity, laying, cultivating possibility).

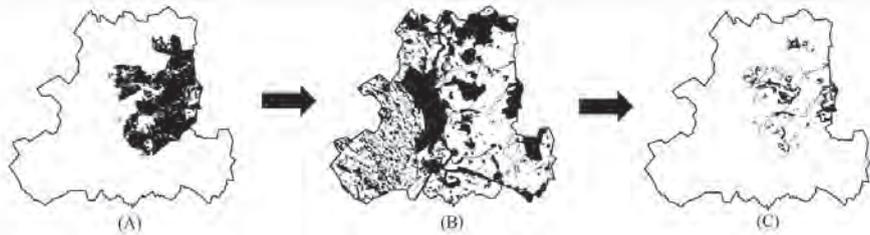


Figure 7. (A) optimal biomass production areas; (B) nature protected areas; (C) potential conflict areas

Another conflict situation could arise from the competition between arable land and areas characterised by important turistical activities (Figure 8). Two of the 13 turistical important bath-places (Gyomaendrőd and Orosháza) are affected by high biomass potential arable land, which means these municipalities somehow have to deal the land use competition between agricultural and turistical point of view.

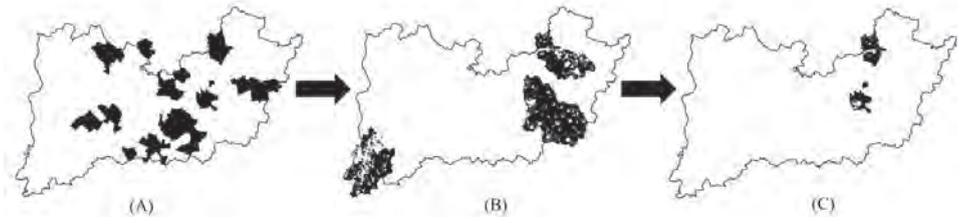


Figure 8. (A) Important regional turistical areas; (B) High potential biomass production; (C) potential conflict areas

The presented examples show the present situation of land cover and land use. If we are able to set thresholds for these spatial conflicts, we have the tools at hand for determining a rational use of existing resources that anticipates the possible longterm effects on the environment of the decisions taken.

The demand for agricultural products, as well as for other land use types, e.g. turistical areas, is a major determinant of the relative competitive power of the individual land use types. This demand needs to be allocated by changing the relative cover of land use types in the individual grid cells. The determinants of the competitive advantage of the different land use types are studied by relating the actual land use distribution to a number of biophysical and socio-economic parameters which are generally considered to be determinants of, or proxies for, the land use distribution. These relations are quantified by a stepwise multiple regression procedure. Upon changes in one of the determining factors the most likely new relative land use configuration can be calculated from these multiple regression equations. As all land use types are simulated synchronously, and total available land area is restricted, competition will determine the ultimate change based on the relative change in demand for the land use types and the relative advantage of the local situation. The changes that are calculated for the coarse grid are used to promote changes at the nested detailed scale. All changes are simulated with one year intervals. A more detailed description of the allocation methodology and model sensitivity will be given in the PhD thesis.

DISCUSSION

The land-use change research sequence was presented where we subdivided a common sequence of methods for land-use studies into four phases: the problem identification phase, the system description phase, the design phase and the implementation phase. Results from studies in the problem identification phase, e.g. trends and projections of land demand, are a direct input for the simulations. These simulations provide insights in the functioning of the land-use system, therefore they belong to the system description phase. Resulting land-use change trajectories are useful inputs for the design phase. Studies in the design phase commonly result in static realisations of optimised land-use configurations (often obtained by linear programming models) that can only be realised in a distant future (Figure 9).

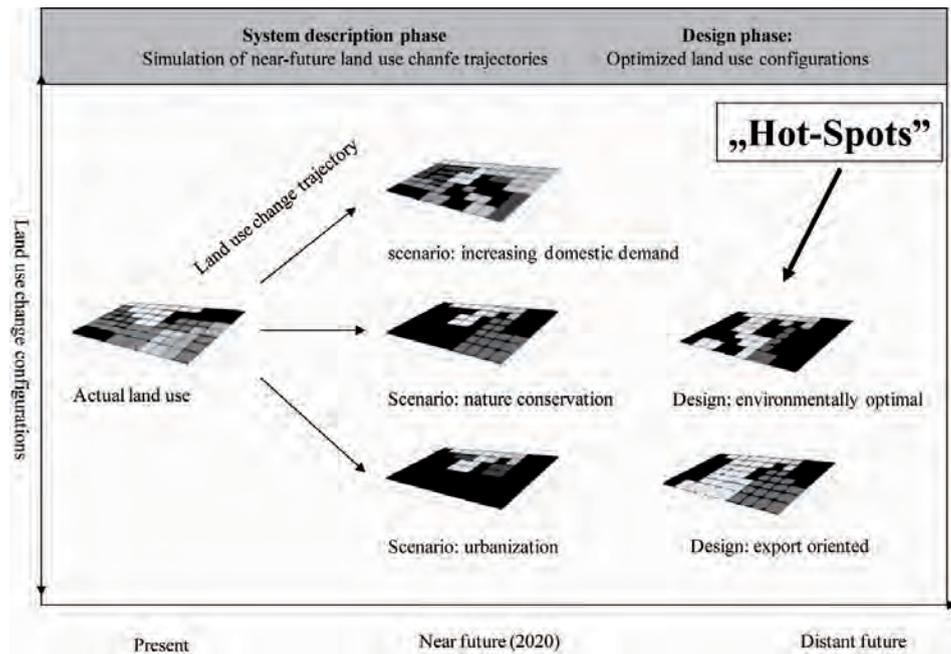


Figure 9. Land use change analyse

Source: Verburg et al. 2002

Comparing the developments to the optimised land-use configurations helps to indicate locations and conditions that constrain the implementation of the designed land-use alternatives. Evaluation of model runs for different scenarios, including different land-use policies, indicates which conditions cause land-use change trajectories that lead towards the desired land-use configuration. Furthermore, this confrontation with near-future developments might lead to a more realistic definition of the objectives of the linear programming and prototyping models. Identified ‘hot-spots’ of land-use change can help to focus on research belonging to the design phase to the appropriate areas and land-use systems.

CONCLUSIONS

The CLUE modeling framework can be used to explore the pattern of land use change for different development pathways. The user can e.g. specify different demands for land use types as well as different population growth distributions. The resulting patterns can be used to identify “hot spots” of land use change and assess the possible impacts on natural and human resources. The scenario results could show that the change into a more urban society is not taking place at equal pace over SGPR.

It is essential that the ecological, socio-cultural and economic values of the landscape be fully taken into account in planning and decision-making how can the importance of natural and semi-natural landscapes be expressed more fully in socio-economic and monetary terms, and how can this information be used in analyzing trade-offs between land use options?

The study for South Great Plain describes where ‘hot-spots’ of land-use dynamics are probable for a series of different scenarios including variations in urbanisation rate, protection of national parks and biophysical feedback.

The tools that make up the CLUE modelling framework are developed with the objective to:

- Provide insight into the spatial variability of land use and its determinants
- Indicate which (proximate) factors determine the spatial distribution of land use
- Account for the scale-dependency of these relations
- Indicate potential near-future ‘hot-spots’ of land-use change for realistic scenarios

This type of quantitative, spatial modelling is complementary to empirical observations of rates of land-use change, descriptive studies and non-spatial economic models. Local-scale, descriptive case-studies can provide important insights which are presently difficult to capture in quantitative models, and can inspire model builders to include new elements in their models. Regional-scale modelling exercises, such as presented in this paper, can integrate results from different disciplines and identify the need for new fields of research adding up to a better understanding of land use change and its drivers. Understandings of land use drivers, patterns and sensitivities thus obtained, will enable scientists to support the evaluation of land use policies and associated impacts.

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LAND PRICING MECHANISMS FOR SUSTAINABLE AGRICULTURAL LAND USE PLANNING IN UKRAINE

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Abstract. Agricultural land market development is among the top priorities for state agrarian policy in the Ukraine. Land lease rates play an essential role in guiding land allocation, improving land use efficiency, determining rural welfare. Thus, fair lease rent is a key question of land market reform in the Ukraine. In this paper, we develop a methodology for land lease evaluation. It estimates minimum and maximum fair conditions both – for the lessors and the lessees. The minimum rate allows landowners to achieve sufficient profitability of land assets. The maximum rate has to be sufficiently low for land operators to allow for profitability of crop production. The proposed methodology is a new conceptual approach for agricultural land pricing in Ukraine.

Key words: agricultural developments, rural welfare, efficient lease rates

INTRODUCTION

Agricultural land market development is among the top priorities for state agrarian policy in the Ukraine. Land reform in Ukraine began with the transformation of ownership of agricultural land. In 1990, the Parliament of Ukraine passed the resolution On land Reform (no. 563-XII, December), which proclaimed the redistribution or as it was called “the repatriation” of state lands with their simultaneous transfer to peasants (private family farms) in possession for life and subject to various inheritance conditions, and in permanent possession to collective agricultural enterprises (CAE). The latter were created on the basis of soviet type corporate farms. In other words, virtually all land including degraded land and the land taken

out from production use, was distributed to peasants and CAE members in the form of land parcels.

However, in 2001, the Land Code imposed a moratorium on all agricultural land sales. The main reason was the poor development of land market mechanisms and low land prices, which inevitably would result in a concentration of land in the hands of rich individuals. There was a number of positive socio-economic arguments to defend this action. For example, in the opinion of experts, one of the important benefits of postponing land sales was to give the new and inexperienced landowners a possibility to acquire better knowledge of their assets and thus to prevent inappropriate land transactions and irreversible regrets. Indeed, in the Ukraine with a long state monopoly on land resources, there existed no “appropriate pricing procedures” as well as no rigorous and transparent regulatory system to deal with land appraisal and land transfers on all levels.

In the developed countries, existing land market mechanisms allow to ensure land integrity and transformation of land into the most productive agricultural enterprises. In this sense, establishment of a land moratorium in the Ukraine, although a well defended step, in the long-run may lead to several negative consequences as, e.g., land fragmentation, unless leases are sufficiently long. Land tenants possessing comprehensive long-term property rights to agricultural land tend to exert more efforts in ensuring long-term sustainability of land use.

In the absence of land sales, the land market in the Ukraine is represented primarily by the practices of land leases. Properly designed land leases can serve as powerful market instruments for guiding land allocation and improving land use efficiency. In the Ukraine, they are also an important element of rural welfare, especially of many rural households who lease out their land as they have no means to cultivate it. For them, the rentals received become a vital source of income, which is often not guaranteed by wage earnings. Rental arrangements can significantly impact on the risks and returns of land operators. Both, landowners and producers have to understand the structure of rentals and how they may affect their performance. In the Ukraine, a number of limitations related to existing land lease arrangement have already been identified. Among the most important are the following:

1. The majority of land leases are only short-term. Presently, land lease contracts with a duration less than five years account for approximately 60%.

2. There are major risks associated with land use and profitability of agriculture; there is a lack of appropriate regulations and market/banking instruments for ensuring the rights of lessees and minimizing their risks; absence of such instruments is a primary reason for engaging only in short-term agreements.

3. Because of predominantly short lease contracts, there are no clear incentives for lessees to use the land effectively and to make long-term investments.

4. Because of the inefficient agricultural land market structure, low lease rates, the share of agricultural production gradually reduces, rural welfare decline, agricultural labour seeks new non-farm income opportunities, unless the markets for land rental work well, this is likely to lead to land under-utilization.

5. As some land market practitioners argue, presently the land rental market in the Ukraine lacks transparency and has high administrative costs.

In this situation, properly designed land lease rates can improve functioning of agricultural markets. According to economic theory, perfect equilibrium lease rates occur when supply

of land equates with the demand. The question is how to attain these equilibrium prices. This is a key problem especially when markets are distorted and investments into agriculture are associated with many risks.

Currently, because of poor experience and lack of transparency in land market operations, also due to the absence of practical guidelines for the design of market/financial instruments, the agricultural land lease rates in the Ukraine are based on old and rather simple principles of land appraisal. The existing lease rents are determined as a small percentage of the value calculated by normative monetary agricultural land evaluation (NMLE). Often it is not more than 100 hryvny/ (about 15 Euro) per hectare per year, without a rigorous assessment of land/soil physical properties nor economic conditions and market trends, land location, distance to markets, etc. A similar approach of setting lease rates as a percentage of land value is adopted in many countries, for example, in the US or Australia. However, there the rates are adjusted with respect to market changes: when markets boom, land values rise and lease rates rise as well. When returns are poor, demand falls and land values and lease rates also fall.

Such an adjustment mechanism is not available in the Ukraine. For example, current agricultural production in the Ukraine is characterized by a growing importance of corporate farms producing highly profitable cash crops such as sunflower and rapeseed. Yet, land lease rates are set very low, while the corporate farmers earn high profits producing cash crops. The existing principles for setting lease rents are not flexible and do not reflect the market situation and profitability of land use.

In this paper we focus on how to determine fair land lease rates reflecting the earning “potential” of the land, which in the situation of the land Moratorium is a key question to encompass agricultural development and land reform in the Ukraine. In Section 2, we give a brief overview of some existing EU practices to define land lease rates. Although they are based on different principles and, in this sense, be incomparable, the reviewed procedures still give additional insights as to which factors are considered important for land appraisal procedures. Section 3 summarizes the currently existing approach used to determine land lease rates in the Ukraine and proposes a methodology to inform negotiations for setting fair land lease rates both for lessors and lessees. Section 4 presents numerical results and summarizes derived policy recommendations. Clearly, the proposed methodology still requires further development into a broader modelling framework incorporating realistic agricultural market principles and mechanisms. Therefore, the conclusions highlight the need for extensions of the discussed approach, in particular, toward explicit treatment of inherent uncertainties and risks.

EXISTING PRACTICES TO DETERMINE LEASE RATES

In many countries of Central and Eastern Europe land leases are a popular form of land market transactions. The way in which land rents are defined determines the net economic return to land, based on which land prices are estimated. However, if land rents are not defined properly, and thus do not respond to market opportunities, land prices will reflect this misperception and induce an inefficient land allocation (Trivelli 1997).

Land prices and rents defined by the Polish governmental agencies are based on land pro-

ductivity, specifically in terms of the potential production of wheat or rye (quintals) that can be obtained per hectare. Land prices are calculated based on land productivity for agricultural purposes, capital gains, due to speculative forces are not included in the prices. Generally, land prices reflect the value of land based on its physical conditions for a fixed technology and average weather conditions. Land prices are calculated based on agricultural net income. Hence, land is valued as a productive factor only and not as an asset. However, land prices and rents are essentially determined also by the access to markets (the location of a parcel).

Land prices in Hungary are defined on the basis of net agricultural income that can be obtained per hectare. Agricultural net income is measured in Gold Crowns per agricultural land unit. Presently, land prices are mostly related to soil fertility, accessibility and irrigation opportunities of the plot.

Rent levels for agricultural lands in Romania are stated very often as a percentage of gross production or as a higher percentage of net income which turns out to be equivalent. Most common rent levels are in the range of 20 to 30 percent of gross crop production (Duncan, Prosterman 2000).

The amounts paid for land lease vary in Slovakia. The largest lessor of land in Slovakia is the Slovak Land Fund determining the price of lease for, at least, 1% of the land price according to the bonited soil ecological unit (BPEJ). Other agricultural landowners negotiating with the tenants contractual lease prices which fall between 1.5–3% of the price of agricultural land according to the BPEJ (Bandlerova, Marisova 2003).

The government defines administratively a set of land prices based on land characteristics in Czech and Slovak Republics. There are 42 categories, that define the type of land. The land categories are formed by a code and the major categories included in this land code are: climate in the region and soil conditions, soil thickness, slope, and stone contents. There is no consideration of location in determining land prices. In the Czech Republic private land can be traded for a market set price. However, the administrative price is still used as a reference. The administrative land price is calculated assuming a representative set of crops that could be produced in each land category. Based on these crops and on average yields per hectare, an estimate of the net agricultural income is derived by calculating the total value of the production less the total (average) input cost. Land taxes are deducted from this net income in order to obtain the net agricultural rent (Voltr 1997).

There are two sets of land prices in Slovenia: market prices and administrative prices. Market prices are set freely in the market. Administrative prices are determined based on land quality, location and product orientation. These prices vary significantly from one region to another and are revised by state agencies, not only to improve the methodology, but to compare them with current market prices.

LAND LEASE RENT IN UKRAINE: PRESENT SITUATION

In the Ukraine, the existing lease rents are about 1–2% of the value determined by normative monetary agricultural land evaluation (NMLE), (often not more than 100 hryvny/ (about 15 Euro) per hectare per year). The existing methodology includes the following steps to calculate NMLE indicator:

$$\text{NMLE} = \text{TRI} * \text{SP} * \text{CP} \quad (1)$$

NMLE – Normative Monetary Land Evaluation

TRI – Total Rental Income (kg)

SP – Selling Price (UAH/kg)

CP – Capitalization Period (33 years)

Total Rental Income:

$$\text{TRI} = \text{ARI} + \text{DRI}$$

ARI – Absolute Rental Income (kg)

$$\text{ARI} = 160 \text{ kg}$$

DRI – Differential Rental Income (kg)

Differential Rental Income:

$$\text{DRI} = (\text{Y} * \text{SP} - \text{PC} - \text{PC} * \text{PN}) / \text{SP} \quad (2)$$

Y – yield (kg) (in wheat, in all agricultural zones)

SP – Selling Price (UAH per kg)

PC – Production Costs per ha

PN – Profitability Norm (coefficient)

In formula (2), Y corresponds to wheat yield used for land evaluation. In case of market demand for cash crops and their high profitability, wheat can no longer serve as an adequate determinant of land value. As an alternative (practiced in many developed countries, e.g., US), the lease rate may be calculated according to formula (1) adjusted by the share of cash crops in production.

According to (1), NMLE indicators were calculated for the territory of the Ukraine on the level of regions. The indicators then allowed to define rental rates for agricultural land in Ukraine. According to Ukrainian legislation the lowest possible rate of rentals has to be at least 1.5% of NMLE. This regulation is often ignored by land operators and actual rental rates are equal to 1–2% of NMLE.

The level of 1.5% of NMLE as the lowest permissible rental rate is very subjective and the existing methodology for calculation of NMLE is out dated because of several disadvantages:

- 1986–1990 data are used for calculations of rental income;
- considerable changes in bio-productivity of soils during last 10–15 years;
- considerable macroeconomic changes in Ukraine during last two decades;
- methodology leaves out several important factors, for example location of land plots, distance to the markets and processing facilities, etc.

Figure 1 compares Ukrainian regions in terms of their NMLEs. The highest estimate is calculated for the Crimean region and the lowers for Zhitomirskij (6542) region.

In summary, the approach based on NMLE has a number of important limitations with far reaching implications for land lease markets and rural areas:

- The approach does not include market conditions and optimal production portfolios at each location. Formula (2) uses wheat yield as the determinant of rental incomes, which causes essential disparities in land values between regions. For example, while central regions indeed specialize in wheat/cereals, southern regions are famous for their fruit, grape and wine production. For them, it is rational to adjust the NMLE with respect to these agricultural commodities, which are typically higher priced than wheat.

- Lease rates derived according to formula (1) are not flexible to incorporate land/crops supply-demand fluctuations.
- Profitability of crops is not reflected in formula (1). For example, if production is oriented towards sun-flower and rapeseed the earnings of land operators are much higher than lease rents based on wheat yields.

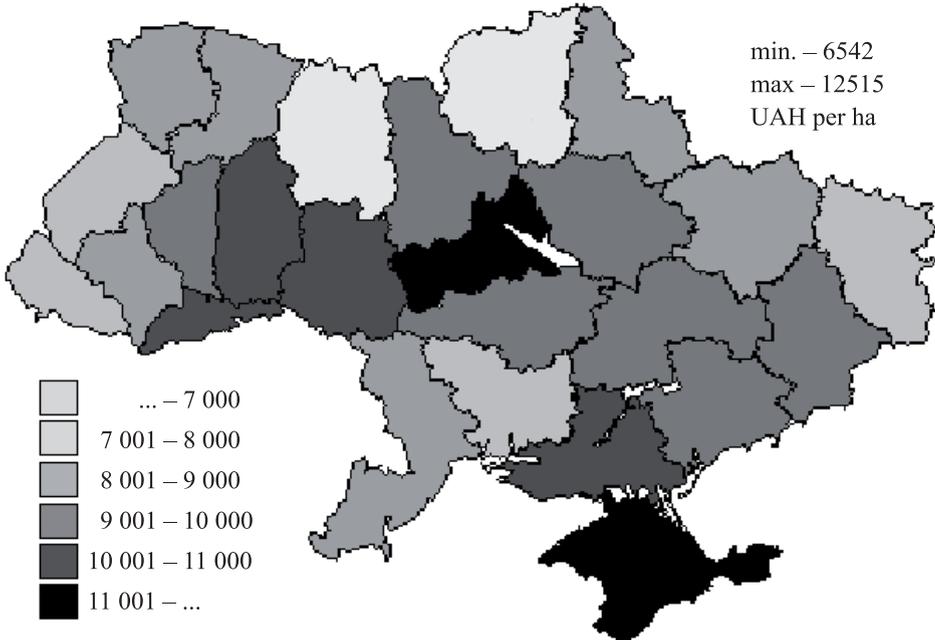


Figure 1. NMLE indicators, Ukrainian Hryvnas per ha (100 € = 672 UAH)

Accounting for the limitations listed above it is important to define principles for estimation of “fair” equilibrium-type lease rates based on appropriate land values and economic/market conditions. It may be impossible to define exact prices for each land plot, because both market prices and lease payments for agricultural land, depend on many market, and non-market factors, but for the purpose of state agrarian policy it is necessary to develop principles which would allow to estimate minimum or/and maximum land lease rates for different agricultural areas and land types.

In the next section, we develop a methodology to estimate minimum and maximum “fair” conditions both for lessors and lessees. The minimum rate is defined in a way that landowners can achieve sufficient profitability of land assets. The maximum rate, on the other hand, has to be sufficiently low for land operators to allow for profitability of crop production. The important aspect of the proposed approach is that it allows to account for the optimal mixture of crops, sustainable crop rotation, crop profitability and prices, lessors incomes, lessees earnings, etc.

APPROACH TO DEFINE MINIMAL AND MAXIMAL RATES FOR RENTALS

TWO-CRITERIA APPROACH

The goal of defining critical (minimal and maximal) ranges for lease rates is to design land market instruments that would allow in an efficient way to bargain about agricultural land. This is a challenging task especially for the Ukraine in the absence of history and experience of private agricultural farming (as in most other developed countries) and well-established regulations for land sales. Landowners have to know the lowest and highest possible value of their land parcels to avoid detrimental outcomes and unfavourable contracts with lessees.

Thus, the proposed methodology includes two criteria: of landowners and of lessees. A lesser is interested in renting out land at the highest possible rate, while lessees would like to use the land at the lowest possible rate. Issues of supply-demand may not be very relevant for the Ukraine, where more than 20% of agricultural lands are underutilized. Many parcels are not used by current landowners, but also they are not demanded by tenants because of high expenditures and risks inherent to agricultural production. Expenditures are primarily associated with investments into machinery, melioration, fertilization, storage capacities, repairs, warehouses, etc. The risks of farming are still high and investments often do not pay-off.

From the viewpoint of a landowner, the rent has to be not too low to achieve sufficient profitability of land assets:

$$R > V \cdot R, \quad (3)$$

where V defines the land value and R is capitalization (interest) rate. Here, we use an estimate the minimal land value V equal to $\min R \cdot t$, where $\min R$ is derived according to formula (1), $t=33$ is an ad hoc value defining the period of land utilization.

On the other hand, maximal lease rates from the viewpoint of land operators should not be too high to allow sufficient profitability of agricultural business to create incentives for future sustainable land use:

$$NR/TC > k \quad (4)$$

$$\text{or } (GR - TC)/TC > k$$

where NR defines net return, equal to $NR = (GR - TC)$, where GR is gross return, and TC the total cost of production, k is a coefficient or norm of profitability. This coefficient is different for different regions or different specializations of agriculture but let us assume $k = 1.25$ for enterprises oriented on sustainable agricultural production with combination of profitable and non-profitable crops or animals.

This simplified approach identifies key factors underlying the procedure for calculation of agricultural land lease rates. Conditions (3) and (4) are formulated in a deterministic way. A main challenge of future research will be to account for uncertainties of the factors included in the formulas. Issues related to the implications of uncertainties on the lease rates are beyond the scope of this paper. It is, however, worth mentioning that shapes and magnitudes of uncertainties alone can have decisive impacts on land value and lease rates. In fact, uncertainties may require substantial structural adjustment of the conditions defined in (3) and (4).

NUMERICAL EXPERIMENTS: MINIMAL AND MAXIMAL LEASE RATES

In this section, we illustrate the proposed approach and initiate some uncertainty discussions with the numerical examples. According to formulas (3) and (4), minimal and maximal land lease

rates are calculated for the territory of Ukraine on the level of Ukrainian regions. The results are aggregated to higher level administrative units (oblast) and visualized in Figures 2 and 3.

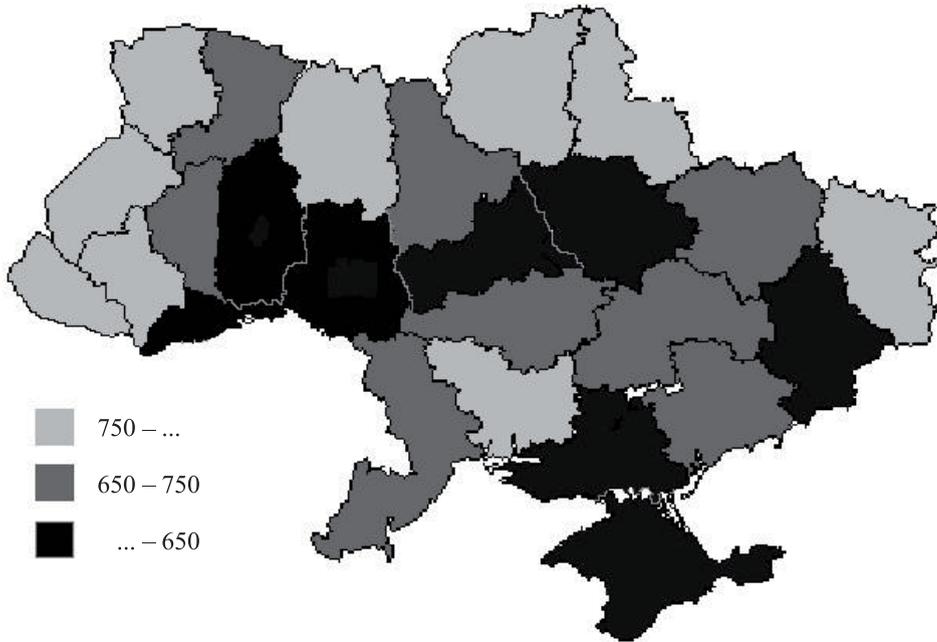


Figure 2. Calculated average min rent level, Ukrainian Hryvnas per ha (100 € = 672 UAH)

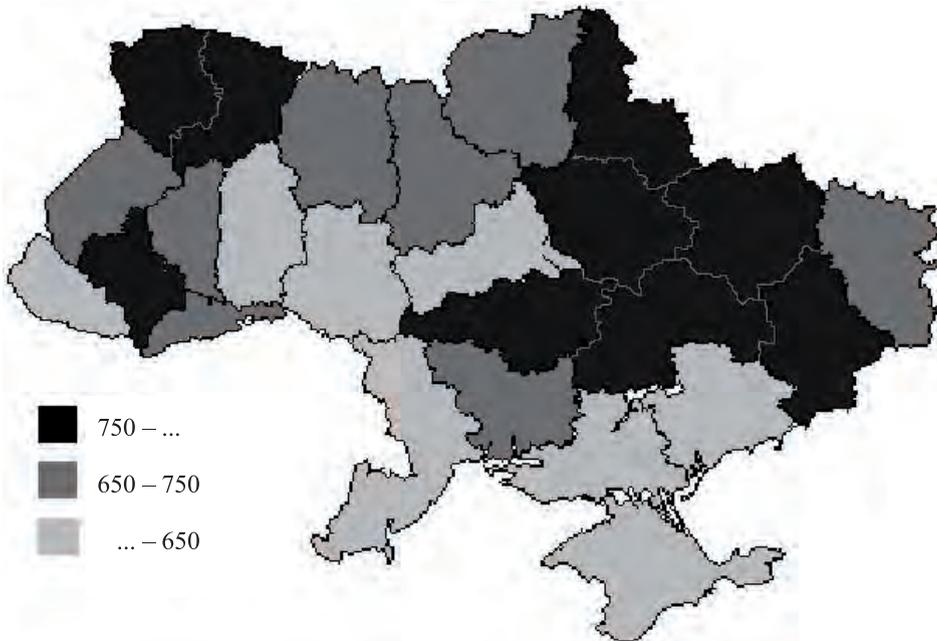


Figure 3. Calculated average max rent level, Ukrainian Hryvnas per ha (100 € = 672 UAH)

Comparison of derived minimal and maximal land lease rates shows some disproportions at the regional level. In some locations, minimal levels are higher than maximal levels (see Figure 4), which can be explained by the low real profitability of agriculture in those regions due to prices, costs, or/and other circumstances.

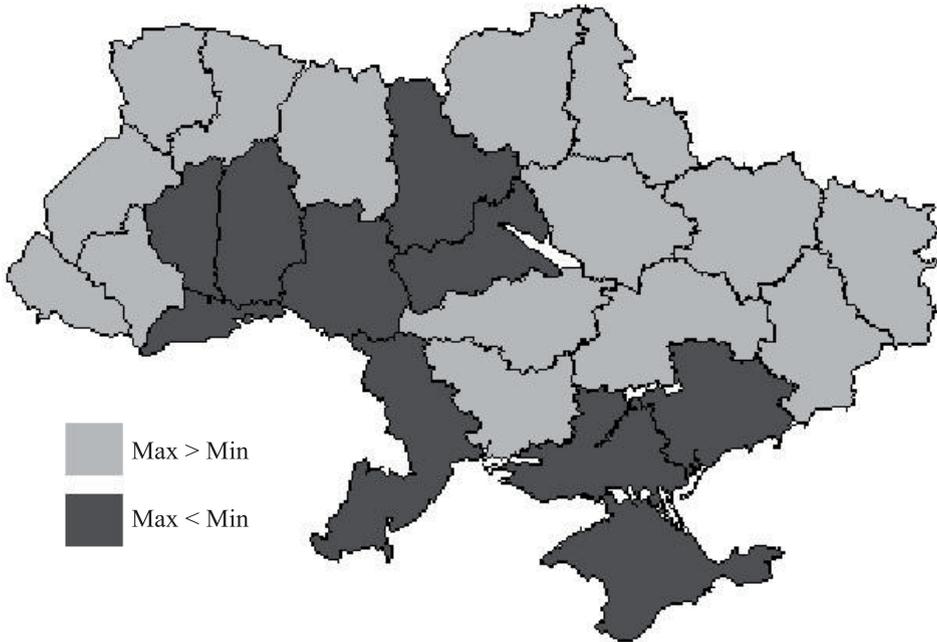


Figure 4. Difference between max and min land lease rates, Ukrainian Hryvnas per ha (100 € = 672 UAH)

ADJUSTMENT OF LEASE RATE WITH RESPECT TO PROFITABILITY OF CASH CROPS

It is common for many agricultural markets in developed countries to adjust value of agricultural land and, thus, of lease rates with respect to market conditions, profitability of crop, demand and supply conditions. In the Ukraine, this rule is not yet implemented in practice. Although still subject to negotiations, it is a tradition to use a quite low rate of 1.5% of NMLE to derive lease rates. This norm reflects old principles for land value and land lease calculations defined in times when land was state property and land value was estimated very formally. This rule needs to be adapted and differentiated for conditions of land markets taking into account the profitability of land operators oriented on production of most profitable crops.

Let us illustrate how this can be done accounting for current trends in agricultural production in the Ukraine. Agricultural production in the Ukraine is dominated by production of highly profitable cash crops such as sunflower and rapeseed. Lease rates based on wheat/grain profitability used in formula (1) are essentially lower than profits. With the following experiments, we answer the question as to what extend the percentage of NMLE determining lease rates could be increased to bring higher earnings to landowners while staying attractive to lessees (stays within the min-max ranges). In Figure 5, we compare profitability of grain crops and sunflower (as determinants of the lease rate) obtained under conditions of different

land lease rates calculated on the basis of NMLE indicators. It shows that the rate of rentals at the 1.5% level of NMLE is too low for profitable cash crops because the 25% level of profitability is still possible for land operators even when rentals are 20% of NMLE for grain crops and 35% of NMLE for sunflower (rentals are part of costs on production according to the Ukrainian legislation).

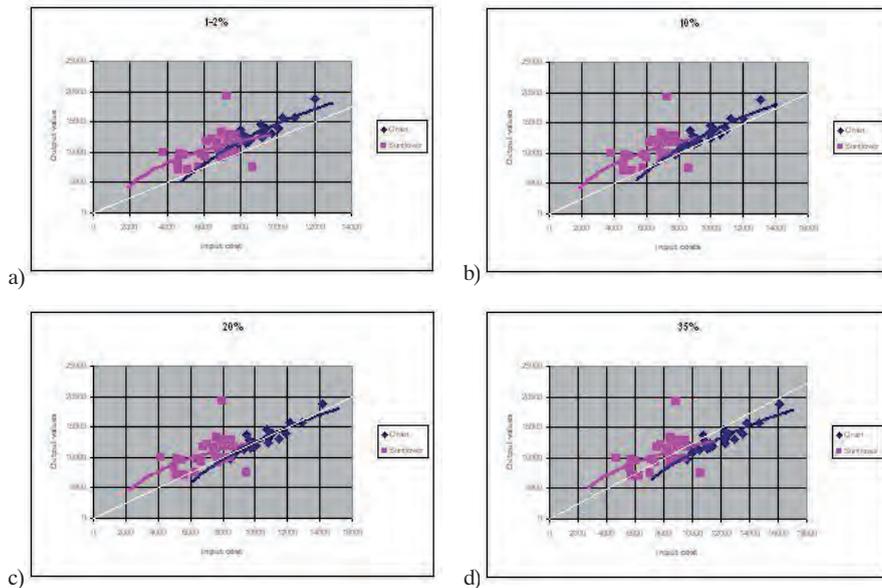


Figure 5. Different lease rates and profitability of grain and sunflower

Thus, in locations producing cash crops, lease rates can be adjusted up to 30% of NMLE. According to the proposed approach, it is possible to take into account real directions of agricultural production of land operators in applied calculations of rental rates.

CONCLUSIONS

Existing principles for definition of agricultural land lease in the Ukraine are inefficient. They are not flexible enough to reflect agricultural market conditions, profitability of crops, demand-supply relations. We proposed a methodology, which makes a step towards the design of fair equilibrium-based lease rates. Namely, in our approach we set two criteria, which make lease rates attractive to lessors and to land operators. Within the determined minimal and maximal ranges, the lease rates can be further revised and negotiated taking into account various market conditions, individual preferences, distance to markets, availability of agricultural infrastructure. Implications of uncertainties and risks on definitions of minimal and maximal ranges have not yet been addressed with this paper. This is a major topic for future studies, as uncertainties may cause structural changes in the combination of factors defining the minimal-maximal ranges.

The analysis of results shows the need to improve and update principles for NMLE calculations, in particular, according to the changes in bio-productivity of soils during last 10–15 years and macroeconomic changes in Ukraine during last two decades. With respect to lease rates, the NMLE methodology should be improved taking into account a set of important factors: location of land plots, distance to the markets. To use the existing approach in close perspective, minimal rental rates for existing approach should be increased depending on the set of crops produced by land operators.

An important issue relates to the percentage of NMLE as a determinant for rentals. Currently, 1–2% are used to calculate the lease rate, however, numerical experiments conducted with available historical data on agricultural markets and productivity of cash crops, show that rents could be much higher than 1–2%. Thus, for land with cash crop production, they could be increased up to 30% of the NMLE. The proposed methodology is a new conceptual approach for agricultural land pricing in Ukraine, and can be used as an effective mechanism for determining land lease rates.

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THE SPECIAL ROLE OF THE NATIONAL PARKS IN THE ENVIRONMENT- CONSCIOUS DEVELOPMENT OF THE LESS DEVELOPED RURAL AREAS IN HUNGARY

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Abstract. The rehabilitation of the rural areas – following modern European style integrated rural development solutions – requires new approaches in Hungary.

Pointing out the deficiencies in the Hungarian regional development policy related to the protected areas, the current empirical research intends to stress the potential environment strategic role of the national parks as institutions. The starting-point is that the environmental problems of the studied rural areas can be only liquidated if the national parks are taken as one of the key factors of regional development. In this approach, it is even possible that the national parks become a new kind of environment-conscious regional development sample areas in certain less developed rural regions.

Key words: national parks, less developed rural microregions, environment-conscious spatial development

INTRODUCTION

Special environment-conscious regional development principles and regulations are applied to the national parks – in many European countries – as territorial units and the rural areas affected by them. Environment-conscious regional development implies scientifically established planning and programming that purposefully combines the long-term interests and environmental pretensions of the communities living in the given regions, landscapes, microregions and settlements and whose aim is to improve the complex natural-social circumstances of the given territorial units.

The most significant European Union documents referring to the sustainability of the landscapes and settlements bordering protected areas include the Sixth Environmental Action Programme, the LIFE, the European Landscape Convention and the NATURA 2000. According to certain regional development models (European Spatial Development Perspective – ESDP 1999 Potsdam), it is even possible that in certain regions the national parks – through the conservation and management of the natural resources and the cultural heritage – become a new kind of environment-conscious regional development sample areas.

In Hungary, the environment strategic conceptions concerning the integrating role of the National Park Directorates – providing opportunities for the environment-conscious regional development – are moderately included in the national strategies. One of the determinative national documents – being relevant from the aspect of the studied area as well – is the New Hungary Rural Development Strategic Concept and Programme (2007–2013). This strategic concept takes aim at the implementation of a complex rural development – however, it does not make proposals for the management of certain region-specific environmental problems. Among other things, it does not lay due emphasis on the integrated liquidation of the environmental conflicts of the national parks and the rural areas affected by them.

Pointing out the deficiencies in the Hungarian regional development policy related to the protected areas, the current empirical research intends to stress the potential environment strategic role of the national parks as institutions. The starting-point is that the environmental problems of the studied rural areas can be only liquidated if the national parks are taken as one of the key factors of regional development. In this approach, the national parks do not only constitute the special territorial types allotted by nature conservation but also represent the National Park Directorates as state institutions.

SIGNIFICANCE OF THE NATIONAL PARKS IN REGIONAL DEVELOPMENT – BASED ON EUROPEAN CASE STUDIES

The ultimate designation of the national parks is the conservation of the natural and cultural values and the related areas in addition to the sustenance of the diversity of the unique and specific landscapes. Another important element of their activities is providing access and interpretation based on scientific researches by which they have an important part in the expansion of environmental studies and the shaping of environmental approach. Looking at these diversified scopes of duties the question arises that what kind of impact the national parks have on the regions of the particular countries, and how they may influence the environmental state of the macro-landscapes, and regions affected by them.

The connection between the sustainability of the national parks and the adjacent settlements, was first pointed out by English researchers analysing the crisis of the agricultural sector. Rogers and Shucksmith demonstrated in the course of their surveys – conducted in the Welsh Yorkshire Dales National Park and elsewhere in England (among well circumscribed ecological conditions) – that the parks have an indirect impact on the individual elements of the affected local social environment and the social problems react on the development of the national parks (Rogers 1981), (Shucksmith 1981). A few years later the observation became approved: – spatial planning must take into consideration the fact that the national parks play an essential role in the life of the rural areas (Clope, Park 1985).

The basic functions of the national parks were gradually expanded in several European countries and thus the implementation of environment-friendly agricultural methods and tourist alternatives became available in the protected zones concerned. The Scandinavian national parks, for instance, – in addition to the conservation of the environmental potential and protection of the landscape and cultural values – have been participating in the elaboration of new land-use methods, in the development of the local structures of agricultural produc-

tion and in the organisation and support of ecotourism for a long time. In these parks and in the rural zones adjacent to them the creation of the ecological stability also serves complex economic-social purposes. As a result of the change in the environmental approach generated by the parks – as some Swedish observations suggest – the local self-governments, communities, professional and civil organisations became more environment-conscious, their lobbyist abilities strengthened and thus a positive change came about in the quality of life of the inhabitants of the localities (microregions, settlements). Consequently, after all the national parks generated regional development through contributing to the formation of the environmental and economic policies corresponding to the local makings and to the extension of the functions of the rural areas. The examples substantiate that the appropriate adaptation of the environmental principles and methods elaborated in the parks of the rural areas and their application under unique circumstances may foster an environmental reformation of other landscapes and settlements outside the areas of the parks, too. In this sense, the national parks may be interpreted as the studying fields of an environment-conscious rural development. (Swedish Environmental Protection Agency /SEPA), (Figure 1).

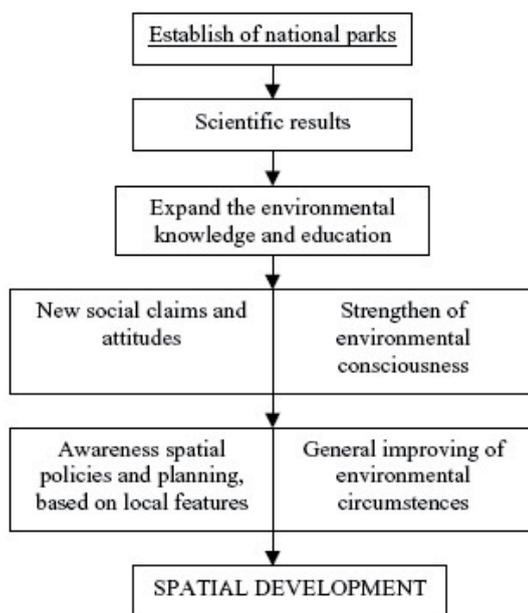


Figure 1. Steps leading to regional development generated by national parks (based on the principles of SEPA)

The size and geographic location of the national parks are extremely varied but the majority of the core areas and buffer zones of most parks are located in rural environs and economically less developed rural regions. Accordingly, the park zones are larger and smaller rural areas whose natural endowments are not changed substantially. It follows from this special location that beyond the general roles and tasks, the parks must develop their programmes in harmony with important key factors of the regional development applied to the rural areas. The planning of the national parks completed with multifunctional rural development aspects is related

to environment-conscious regional development at this stage. Namely, in their environmental strategies and spatial planning, the parks – in addition to giving priority to the nature conservation objectives – must also keep in view the environmental conservation and sustainability of the rural areas in a wider sense.

THE REGIONAL DEVELOPMENT PRINCIPLES AND PRACTICE RELATED TO THE NATIONAL PARKS IN HUNGARY

The primary tasks of the Hungarian national parks defined by law is the protection of the natural botanical, zoological, geological, hydrological, scenery and cultural-historical values with special importance, the sustenance of the biological diversity and unperturbed functioning of natural systems, and the facilitation of education, scientific research and tourist recreation. In addition to these, the Hungarian legislation also refers to the role of the parks in the development of the regions. The conservationist liability of the state, and the population, and the regional planning, tasks of the self-governments – in pursuance of the original objective of Act LIII. of 1996 on Nature Conservation – are interconnected notions. The interests related to nature conservation must be taken into consideration in the process of national economic planning and regulation, in the economic, regional and settlement development and spatial physical planning decisions and in the administrative measures (Act LIII. of 1996 on nature conservation I.5. §/3). The development philosophy of the Act, which has been referred to as a fundamental document ever since was partially determined by the expected EU accession, the necessity of the adaptation to the regional principles and methodologies of the European Union and the need for a balanced regional development and for the creation of a new planning and development institutional system for the above. Numerous regional, county and microregional concepts, strategic and operative development programmes and even more tenders in regional development were born as a result of the parliamentary resolutions and statutory orders legislated after the Act entered into force. In addition to the above documents, preferential regional – e.g. for national parks – and county spatial physical planning concepts were also elaborated.

In spite of the observance obligation related to the principles defined on the EU level, the excessive amount of the elaborated professional material and the acts – related to the sustainable environment and renewing society – filed in Hungary, there are confused conditions in the Hungarian regional development system. It is partly due to the fact, that the complex system of tasks in regional development is shared by several portfolios, and other national and regional organisations. The activities of the institutions established on the various levels (the various microregional organisations, county and regional development councils, agencies, Phare and CBC offices, etc.) is not properly harmonised and in many cases even professionally not well-grounded. The processes of approval are slow, therefore, the official decisions are extremely slowly finalised. Furthermore, the financial background is uncertain in many cases. Nevertheless, in the studied regions – due to the national regional development policy which treats the protected areas as “separated reserves” and its one-sided approach based on the “over-ecologised” goals of the national parks – the conservationist objectives are often differentiated from the long-term social objectives.

Generally speaking, it may be established that the microregions located in an overlapping position with the national parks got into a disadvantageous situation as a result of the passive rural policy and the economic changes occurring in the past decade. The paralysis of the economic sphere in the nineties resulted in large-scale unemployment. The settlements hit by the out-migration of the population could not renew without external help and their future became uncertain with the ageing of the population. The social indicators of the settlements further lying from the frequented tourist destinations follow a negative tendency, the living standard either stagnates or lowers and there are no factors generating social development apart from the yet uncertain tendering options offered by the European Union. The strengthening of the economic enterprises appearing and prospering in the past years was not as intensive as to compensate for the formerly occurring disadvantages on the regional level. The unfavourable changes affect the entire region.

EXPERT THOUGHTS AND OPINIONS

The elaboration of the chapter was preceded by the scientific research work entitled “The place and role of national parks in regional development”. In the course of this research, I saw the directorates, leaders and experts of the Hungarian national parks about the above topic. Relying on the expert opinions of the employees of the national parks, the paper intends to demonstrate those factors and aspects related to the environment-conscious regional development which in the future may facilitate and determine the sustainability of the regions concerned.

THOUGHTS ON ENVIRONMENTAL COMPLEXITY AND ON THE KEY PROBLEMS AFFECTING THE PARKS

According to the interviewed experts of the national parks, the “lagging behind” microregions face an environmental system problem. They emphasised that one of the determining conditions for the sustainability of the less developed inner peripheral regions is the conservation of the natural values and sensitive areas, the exploration of the recreational facilities, and the grounding, rehabilitation and operation of the rural functions, which may be developed and enhanced from these. All experts found it very important and timely to strengthen the idea of complexity, to exhibit the connections between environmental protection and regional development and the formation of the proper approach.

In their opinion, the environmental conflicts in the studied regions are exceptionally complex. The problems may be approached from the aspect of separate scientific fields or specialties (geography, ecology, sociology, hydrology, pedology, etc.) but most of them may be exclusively interpreted in a complex way.

The natural and social concerns appear simultaneously in the national parks and on the settlements of the management areas. The problems become more interpretable with the help of the exposition and categorisation of the environmental risks. The detailed nature of the risk analysis is justified for the fact that the environmental factors influencing regional development on the area of the national parks are rather specific.

The protection of the natural and cultural values on the area of the national parks of

the Great Plain looks back to a past of several decades. This value protection is not a one-sided aim but a task, which is closely related to regional development. Although the ecological objectives always enjoy priority in the case of the national parks but the experts agree that “the conservation of the protected values and the habitat-conservationist programmes increase the value of the given landscape and the nearby settlements”. Thus, the park may highly contribute to the development of the regions concerned and to a rise in the living standards of the population.

Since the conflict factors closely correlate with each other therefore the sustainability of the regions affected by the national parks must be ensured from more aspects at the same time (Figure 2).

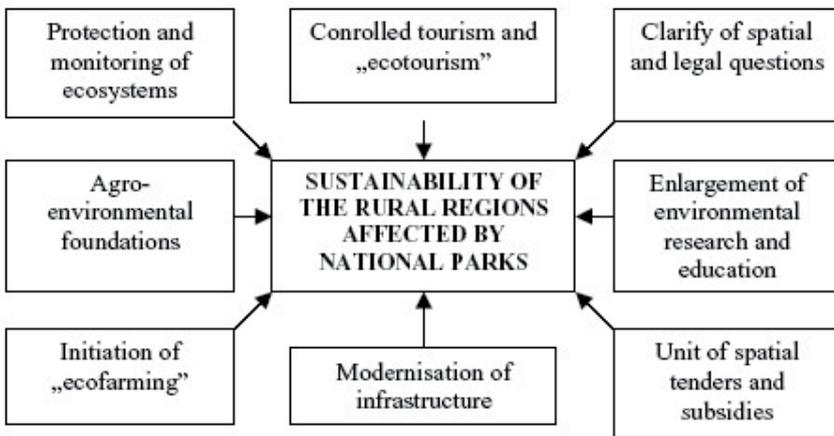


Figure 2. The elementary conditions for the sustainability of the rural regions affected by national parks (based on interviews conducted in national parks)

The national parks feel the environment-conscious regional development principles “as their own” but the interviewees added that “we face irreconcilable background problems”. One of the chief background problems is the lack of support. As the respondents experience it – compared with the international tendencies – the exploration of the environmental values may be regarded goods but there are not enough financial resources for the conservation of the values. The amounts available for maintenance are much lower than the European average even in the Hungarian economic terms. Though the tendering options improved “but it should be reached that the execution of the basic tasks should not depend on tenders”.

The national regulation of nature conservation and environmental protection is not harmonised with the regional development policy and the co-operation between the areas with outstanding environmental value and counties and settlements “with national parks” is immature.

The inhibiting factors include the legal-administrative and trust conflicts related to the proprietary rights and territorial management of the national parks. These are unfortunately – say the experts – in many cases supported by political and economic lobbies (“vespiaries”). The lobby interests are short-term and they may encumber scientifically based long-term – value rational – environment-friendly endeavours with their “rationality” corresponding to the market and economic objectives.

The interviewed experts explicated alluding to foreign case studies that, in principle, the environment-consciousness of the nature conservation zones may greatly influence the subsistence and development of the administrative-territorial units affected by them. Today, the national parks take an active part in the environmental management of some rural areas in many countries (Canada, USA, Great Britain, Norway, Sweden, and Finland). Beyond the conservation and demonstration of the scientifically and culturally important values, certain agrarian, social and tourist tasks closely related to rural development are attained in more and more cases in the parks. In the above listed countries, the conceptual-development methodology of regional development treats the national parks as regions with favoured importance – as “geo-spaces” with specific functions. This principle should be enforced in the parks through the conscious integration of the application of environment-friendly farming options and programmes related to regional development – experts suggest.

THOUGHTS CONCERNING FARMING ON THE AREA OF THE PARKS

As far as the loading and supporting capacity of the environmental systems are concerned, special attention should be paid to agriculture – formulated the respondents. In the regions adjacent to the parks it is especially important – during the agrarian environmental use – to stay within the limits of the supporting capacity of the environmental system. This requires the determination of the exact size and potential of the use of the environmental elements and natural resources. It would be also ideal to elaborate a “natural resources register” to be able to track the changes.

The production and processing of the characteristic traditional goods, bio products and “Hungaricum” are essential in the agriculture of the settlements concerned. In the near future, this will be hopefully combined with such an incentive system by which the parks will get financial support for the demonstration of exemplary solutions (The National Programme for Agrarian Environmental protection could – in principle – contribute to the promoting of eco-farming and the local agrarian potential, too).

They added in the parks that: – in most cases the relationship with the organisations and private farmers farming on the protected lands as leaseholders is good. Offences may occur but the majority of the farmers take cognizance of the conservationist regulations and keep them.

THOUGHTS ON TOURISM ON THE AREA OF THE PARKS

In the past years, the discretion of the joint potentials of nature conservation and tourism changed both in international and national terms. Ecotourism has become a more and more preferred type of tourism whose most important destinations are the national parks.

The environs of the national parks are attractive excursion destinations for the domestic as well as the foreign visitors. The exhibition spots and tourist programmes are offered by the parks for different market target groups. Families, students participating at educational programmes, amateur naturalists, and excursionists with general interest or even the professional researchers may all find their amusement. “All tourists can be active conservationists as well but this requires the strengthening of the environment-friendly approach.”

Tourism may simultaneously provide a chance for educating students and teachers, and recreational opportunities for tourists. The tourism of the protected areas has such an economic and social role, which enables the creation of new income sources and jobs and

the recreation of the population. The tourism of the national parks may be the bearer of a better quality of life – said the interviewees.

THOUGHTS ON THE REGIONAL DEVELOPMENT RESEARCH AND EDUCATION ACTIVITIES OF THE PARKS

The interviewed experts find it essentially important to provide a scientific basis for the activities related to nature conservation, to explore the natural values requiring protection and to develop the protected natural areas. In their opinion, many researches point beyond the nature conservation tasks in a narrow sense. Planning, regulatory and development proposals may be formulated on the basis of the landscape ecological researches and land-use evaluations for various regional levels. The surveys and alternative proposals related to eco-farming and eco-tourism also serve the aims of rural development.

The national parks are the locations of the scientifically established and at the same time “true to life” education in natural sciences. In the field of education, the parks regard the education and consciousness-forming very important for the kindergarten and school children as well as for the elder generations. They intend to operate the educational-exhibitory centres in compliance with the above, which could permanently ensure indispensable additional materials for education purposes and providing access and interpretation, scientific literature, popularising publications, films, etc. Consequently, they find it timely to establish closer relations with the educational institutions. All respondents agreed that temporary occupation should be provided for pupils, students, as well as university students, and the operation of social self-organisations and nature conservation camps should be supported with the help of tenders or in other ways. This, of course, requires the employment of properly qualified experts at the directorates being responsible for the organisation of education and pedagogy in the field of nature conservation. National and international professional trainings, must be continuously ensured for the professional conservationist apparatus, and continuing professional education related to organised environmental education for accredited pedagogues, which activates both the education and the co-operation more efficiently. This is the only way to shift the environmental approach of the settlements of the regions neighbouring the national parks into a favourable direction – presumed the experts of the national parks.

SUMMARY

- The majority of the settlements situated nearby the Hungarian national parks can be found in a disadvantaged and less developed rural microregion. Thus, the studied national parks are situated in regions with special situation requiring special rural development interventions. As opposed to the former practice, these regions need a much more environment-conscious regional planning and programming – recognising and considering the unique environmental conditions of the landscapes and microregions, and advisedly combining the interests of nature conservation and of the social demands.

- We assume that the national parks could have a preferential role in the environment-conscious rural development. This was unanimously affirmed by the interviewed experts during the interviews in the national parks. At the same time, it also became obvious from

the surveys that the environmental-consciousness of the national parks on the area of the Great Plain is not as much prevailing yet. There are no rural development concepts and programmes for the special needs and no spatial planning, and regulatory concepts were accepted and the proper “partnership” between the competent ministries, regional development organisations and local governments is missing. Subsequently, the coordination between the particular “sectoral” and regional programmes of environmental protection, economy and regional development is rather deficient and there is no efficient concentration of the resources either. The involvement of national parks in the process of regional development is further impeded by the fact that the rural development still regards the parks as “railed-off nature conservation zones” and closed environmental systems.

- The agricultural, tourist, educational and research-development concepts of the parks – keeping the conservation of the environmental values in view – are in harmony with the new style environment-conscious European regional development principles. While in the past decades the legal protection and conservation of the objects worth to be protected in the national parks were in the forefront, but the current national park approach is much more complex. Although, the conservation of the natural or nature-close ecological systems and the protection of biodiversity are still the ultimate aims but the optimisation of the uniform operation of the rural landscapes appear as a new objective. This aim – in my opinion – will greatly reinforce the existence and importance of the national parks in the future. Nowadays, the environment-conscious approach and planning in the concepts of the national parks are elemental. It is a positive change in the past years on the settlements – partly due to the efforts of the national parks – that the ecological and environmental aspects are more and more prevailing and the population became more and more acquainted and appreciates the basic rules of the environment-conscious farming methods and ways of living. The parks, in addition to the priority of the interests and demands of the strict regulations of nature conservation, have an explicitly important activity in the agrarian environmental protection, tourism, in the incitement of local farming and enterprises, and in education and regional researches. These activities have a direct as well as an indirect effect on the environmental approach, nevertheless, their effectiveness depend mostly on the adaptive abilities of the local communities and their environment-conscious lifestyles.

- Considering the expected new opportunities offered by the EU funds and the new style environment-conscious endeavours of the national parks, the national parks offer special regional development opportunities for the regions concerned. The regional and rural development “complex integration” impact of the parks is significant by all means since the total area of the statistical microregions overlapping the areas of the studied parks is almost one-fifth of the total area of the country.

The national parks claim that they are able to provide assistance for responding to several local environmental questions but they definitely count on the cooperation with the settlements. The regional decision-makers and the inhabitants must be aware of the fact that the existence of a national park cannot in itself generate palpable improvement for the life of the settlements concerned. Therefore, specific development needs of the settlements and microregions concerned must be summed up, and the local strategies must be passed on the regional and national levels. The national parks may have a very important functional role in both processes. On the one hand, in the elaboration of specific and complex regional deve-

lopment “itineraries” by drafting ecologically-based environment-conscious future options; on the other hand, by their professional interpretation and passing by the environmental policy. The scientific results, observations, professional competence and complex environmental approach of the national parks may assist in getting access to the EU supports and other funds. National park councils should be set up for the management of the programmes eligible for the European funding streams and for the strengthening of the regional lobby. These councils providing partnerships in cooperation with self-governments and local professional and civil organisations could help the planning, organisation and realisation of the bottom-up programmes of the settlements. This organisational form would enable the national parks to become important institutions from the aspect of the development and sustainability of rural regions.

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SOME ENVIRONMENTAL ISSUES RELATED TO SUB-URBANIZATION PROCESS IN BUCHAREST METROPOLITAN AREA

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Abstract. The development of metropolitan areas represents the main feature of today's urban evolution trends. Romania started to adopt the concept of metropolitan area from the scientific point of view in the 1990s and from political point of view in the 2000s. The uncontrolled evolution of the Bucharest Metropolitan Area as well as in many other European capital cities can be analysed through urban sprawl (sub-urbanization process) assessment. As a whole, urban expansion accompanies, land fragmentation and land use diversification, improper waste management as well as high pressure upon water resources, agricultural land and biodiversity. The paper analyses the effects of urban sprawl within Bucharest Metropolitan Area as well as the most important environmental issues related to sub-urbanization process (land fragmentation, land market dynamics, uncontrolled waste deposits, water supply system, sewage system, gas supply system) with negative impact on metropolitan landscape.

Key words: metropolitan area, urban sprawl, residential areas, environmental issues, environmental impact

INTRODUCTION

The population of the big cities exerts high pressure upon the environment of the neighbouring areas because of the tendency to widen the residential space, by dint of resource consumption in the metropolitan areas and because of the attraction and great migration of the population towards the metropolis. This pressure creates a radical transformation of the terrestrial cover and land use, the environmental impact being differentiated according to the distance of certain from the metropolis and certain axes of anthropogenic activity concentration.

Metropolitan area is an American term for a very large urban settlement or an extended urban area. The concept of MA was first given operational definition by the United States Bureau of the Census in delimiting Metropolitan Districts in 1910. The term was changed to Standard Metropolitan Area in 1950, a concept based on the functional urbanized area, which became Standard Metropolitan Area in 1960 (Goodal 1987).

At the beginning of the 90's the Europeans adopted a strategy for developing metropolitan zones, much later than the United States which, at that time, already had 250 metropolitan areas. In Europe there are 120 known metropolitan zones or areas of which 33 are now METREX (European Metropolitan Areas and Zones Network) members, and 40 have become signatories to the Porto Declaration of Intent. Within the EU there are 80 metropolitan areas, with a tendency to reach 100 metropolitan areas.

SOME EVOLUTION TRENDS OF BUCHAREST METROPOLITAN AREA

In Romania, the initiative of developing and planning integrated metropolitan areas is encouraged by a favourable legislative environment starting with 2001. The first legislative measures regarding the National Territory Management Plan, Section IV – Settlements (Law no. 351 of July 6th 2001), defined metropolitan areas as the zone (area) realized through association, by voluntary partnership between the main urban centres (the capital city of Romania and the first-rank municipalities) and adjoining the urban and rural settlements situated at distances up to 30 km, that established cooperation relations at different levels.

Law no. 350/2001, annex II, – consider metropolitan areas as the territory around the first-rank municipalities, described by settlements situated at distances up to 30 km, that established cooperation relations at different levels: communication network, economic, social, cultural and infrastructure facilities and Ordinance no. 53/2002 (as amendment to Law no. 215/2001) stipulates that communes which surrounds Bucharest and first-rank municipalities could be organized as municipal metropolitan zones. By the Law no. 286/2006 (local public administration law) – there are mentions related to organization and management of metropolitan areas.

According to the mentioned above definitions and legislative measures, in Romania 15 cities, besides Bucharest, tried to develop metropolitan areas (Figure 1). The Metropolitan Area of Bucharest is about to be created. Several variants have been proposed by now (Bălțeanu, Grigorescu 2005) and for this paper it is chosen the variant used by a joint scientific team of the Institute of Geography and the Urban Planning Centre (Ianoș et. al. 1998–1999).

SPATIAL DEVELOPMENT RELATED TO URBAN SPRAWL (SUBURBANIZATION)

At the metropolitan level van den Berg et al. 1982 and Petsimeris 2003, proposed the city cycle model in order to analyze the evolution of a single functional urban region in time. The urban area – Functional Urban Region (FUR) is composed of a core (city centre) and a periphery (ring) defined according to tight relationships. According to this model there are four main stages in the life of a city: urbanization, sub-urbanization, de-urbanization, and re-urbanization.

Urbanization is characterized by a rapid expansion of urban zones. This is the phase of industrial urbanization. During this phase the main population concentration processes take place in the core. This stage affected Bucharest Metropolitan Area during the communist period due to a forced urbanization process.

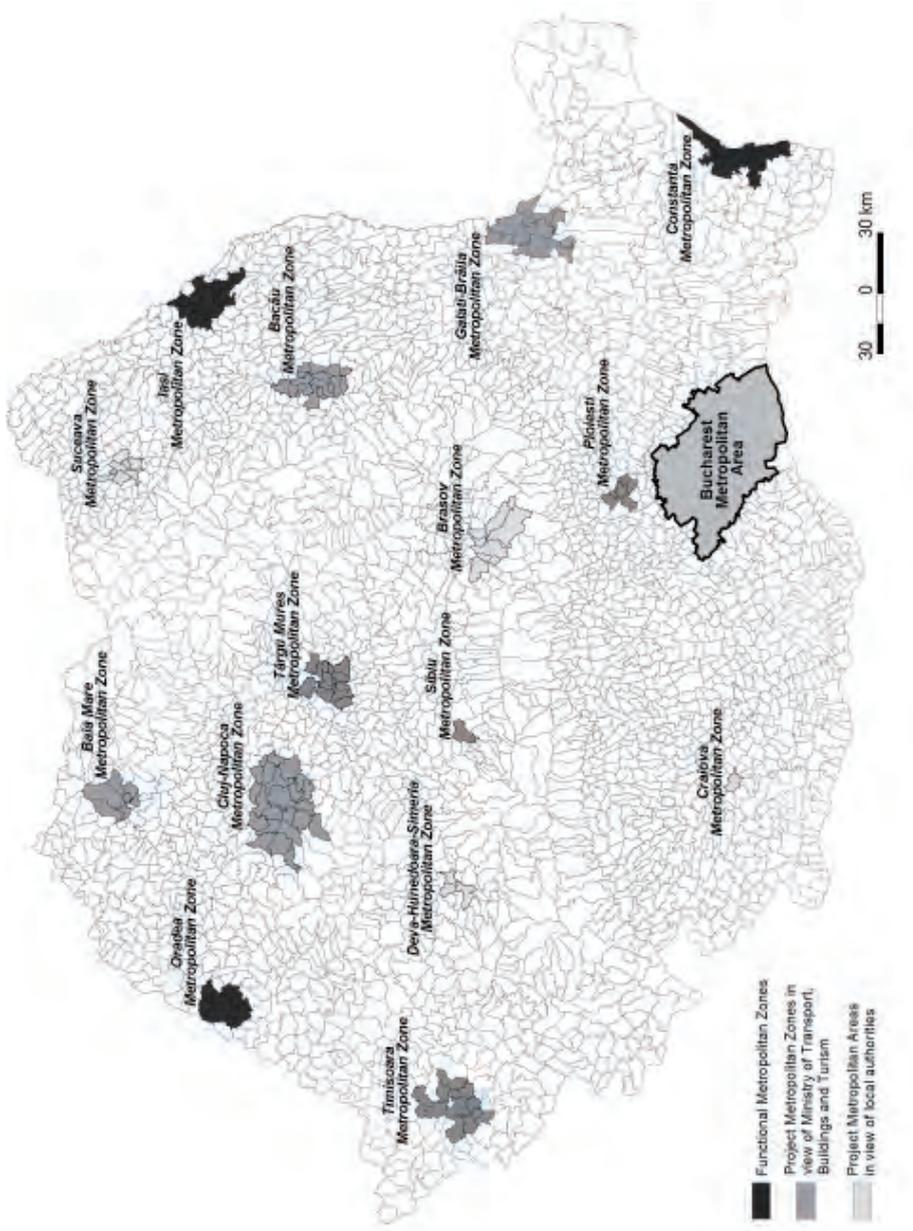


Figure 1. Metropolitan development in Romania

Sub-urbanization is characterized by a strong process of de-concentration of both population and economic activities from the centre towards the hinterland triggering a process of urban diffusion.

De-urbanization is characterized by a decrease in population and employment, which affects the whole agglomeration (FUR). During this phase, small peri-urban centres register an increase in economic activities and population

Re-urbanization is characterized by the regeneration of the centre. In this phase there is a return to growth in the core, due to the rehabilitation or renewal of the historic centres.

The European de-concentration process and their effects on the environment can be evaluated according to the above-mentioned notions. The core and the ring are interdependent in terms of residential and job location. Thus, they point to the dimension and the dynamics of the anthropogenic intervention upon the landscape as a spatial and temporal projection on the environment. Under these circumstances, the higher living standards, the growth of urban population and of its mobility, the access to public transportation and public utility facilities, land use changes etc are direct and indirect consequences of these interdependences relations between the city and its surroundings.

For instance, territorial expansion models of Athens and Rome described a general model of development of the Southern European metropolis by linear tendencies of urban development along the main transportation axes as well as the appearance of residential zones outside these cities (Petsimeris 2003). The astronomical land prices and the absence of housing programs have made many people move out to cheaper areas where there are no urban planning systems. This uncontrolled development has been followed by severe abuse and land speculation, sometimes accompanied by inadequate land use. These practices have been widely facilitated by laws that allowed land fragmentation into small plots without any previous zoning of the territory or control of the architecture of the new buildings.

After 1990, Bucharest Metropolitan Area witnessed the same spatial dynamics as a result of uncontrolled urban sprawl. The sub-urbanization process is typical for nowadays Bucharest evolution trends. With the fall of the communist regime in the year 1989, Romania experienced radical changes in all fields of activity. A first branch to be seriously affected by the restructuring process was agriculture, due primarily to a fundamental change of property over the land, creating new means of approaching spatial development. The major land use changes during the transition period from a centralized economic system to the market economy (1989–2006), are related to decollectivisation and privatization of agriculture. These changes are determining structural relocations of the different land use categories affecting spatial development (urban sprawl) with direct impact on the quality of the environment.

Under these new development conditions, also industry was affected. Most of the industrial plants have changed, reduced their activities or closed through deindustrialization and reindustrialization. New activities, especially related to commercial use, appeared developing new functional (en gros, hiper-markets, showrooms, etc) and location models (very close to the capital city or along the major traffic axes) (Figure 2 and 3).



Figure 2 and 3. Abandoned industrial unit in Oltenița City, hiper market (SELGROS Pantelimon City), respectively

Increasing imports from European Union and exports to the member states, stimulates the need of national and multinational companies for stoking, accelerate developing of new industrial spaces such as A Class logistic projects. Nowadays, comparing to other markets from Central and Eastern Europe, the local market offer to industrial spaces is reduced.

Bucharest Municipality already has over 300,000 sqm A Class deposits and by 2009 will rise up to 800,000 sqm. In Bucharest Metropolitan Area, these new industrial deposits (logistic parks) are situated mainly in the western part of the capital-city along Bucharest-Pitești Highway and very close to the belt road in the northern, north-western and eastern part. The logistic parks are used as deposit spaces other types of services (parking areas, offices).

URBAN RESIDENTIAL SPRAWL

Within the last ten years Bucharest Metropolitan Area experienced an increased urban sprawl mainly based on residential sprawl. Between 2000 and 2005 the agricultural land use in Bucharest had diminished with about 10,000 hectares and in Ilfov County with about 2,900 hectares (Figure 4). The main consequences related to urban residential sprawl within Bucharest Metropolitan Area are land use changes and land/real-estate market dynamics.

Important surfaces of agricultural land use turned into other destinations: residential, commercial, public institutions, industrial use etc. – (Snagov commune: from 2000 to 2005, 1,000 ha become residential). Before 1990, recent developed residential areas from the northern and north-western part of Bucharest (Pipera, Tunari, Corbeanca), had a dominant agricultural land use.

Another consequence related to urban residential sprawl is land/real-estate market dynamics (very expensive land, wealthy residents). The prices evolved from few eurocents/sqm to more than 100 euros/sqm average. Comparing to 2000, in 2006 land prices increased with about 25%–50%, in some cases even 200%. Ex: in Pipera-Tunari area, in the northern part of Bucharest, there is the most expensive land (1,000 euros/sqm), followed by Otopeni City (300 euros/sqm), Chitila City (200 euros/sqm) and Popești-Leordeni City (150 euros/sqm). Besides the traditional areas affected by sub-urbanization process with increased land prices, one can identify an incipient land market in some areas unaffected by the sub-urbanization process such as Bolintin Vale city, where in 2005 the land prices were in average 8 – 10 euros, rising up to more than 30 – 40 euros (in 2007).

The residential use is emphasized through both individual and planned residential spread. The prices of these residential areas are mainly influenced by their geographical location (near forest or lake) and by the proximity of main transport network with direct and rapid access to the capital city. Other aspects are related to the quality of the residential project (uniqueness, design) and to facilities access (guarding facilities, parking places, swimming pools, green areas, super-markets, kindergartens, medical centres, leisure places), turning these residential projects into real luxury neighbourhoods.

Through these new residential investments was made the transition from the individual resident houses (secondary, de week-end or holiday) with no proper environmental facilities, to compact residential areas, real “gated cities” with all the environmental facilities, reducing negative environmental impact (Figure 5).

Within Bucharest Metropolitan Area there were identified 6 compact residential areas

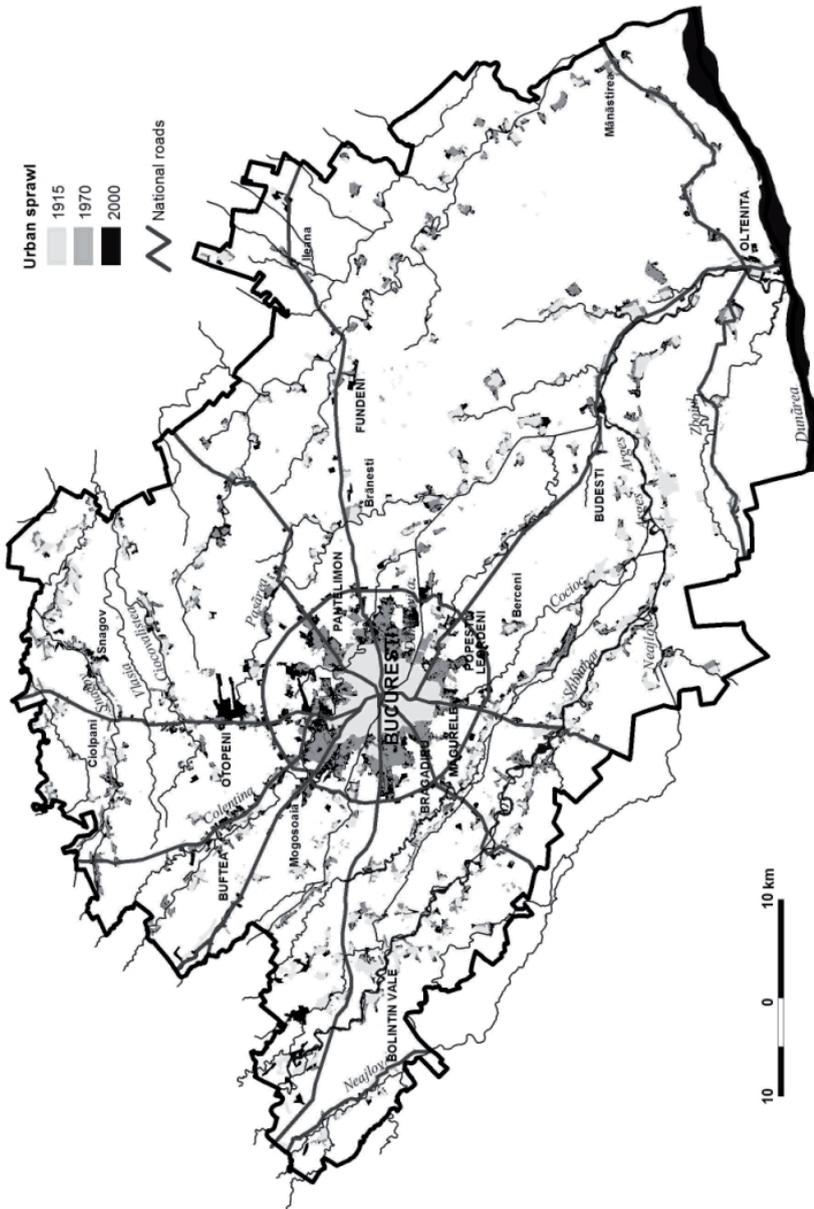


Figure 4. Urban sprawl in Bucharest Metropolitan Area

(Pipera-Tunari, Ștefănești, Mogoșoia-Chitila, Corbena-Otopeni-Balotești, Snagov-Periș, Pantelimon-Cernica-Brănești) and 6 residential nuclei (Dascălu, Buftea-Crevedia, Tărtășești, Domnești, Berceni, Comana) in order to follow the urbanization front extension from the traditional residential areas (north and north-west) to new developed residential areas (south and north-west), based on low land prices, attractive environmental features, and transport infrastructure (Figure 6 and 7).

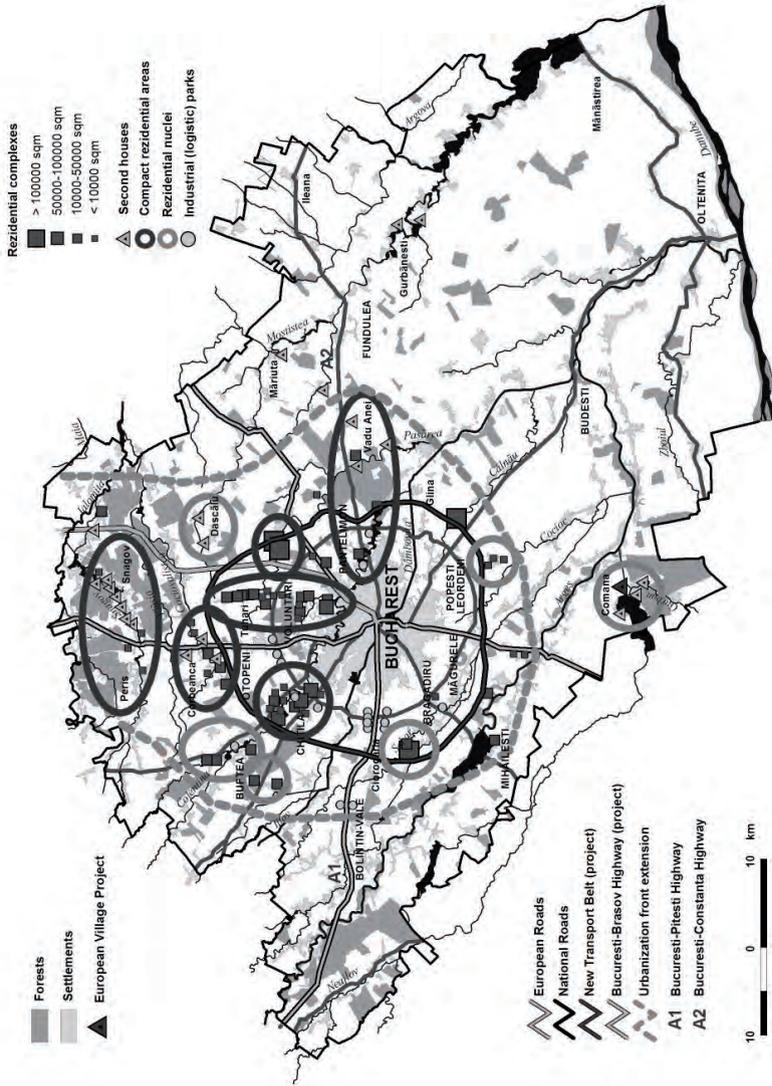


Figure 5. Urban residential development in Bucharest Metropolitan Areas



Figure 6 and 7. Residential Complex Pipera 2 (March 2007) Second houses on Pasărea Valley (March 2007)

ENVIRONMENTAL ISSUES RELATED TO SUB-URBANIZATION PROCESS

In most cases, the spatial extension of residential areas has not completely solved the access to environmental facilities (transport infrastructure, water supply system, gas supply system, sewage system) especially as far as the individual residential development is concerned. This is also the case of Pantelimon city, which became urban settlement in 2006, which is characterized by chaotic and uncontrolled build-up area and unmodernized roads (Figure 8 and 9).



Figure 8 and 9. Pantelimon City (Ilfov County) – unmodernized roads (August 2005, respective March 2007)

Another effect of sub-urbanization process in Bucharest Metropolitan Area is the absence or the insufficient access to public utility facilities, especially, in the new residential areas. Only 44 out of the 94 settlements have a centralised water supply system, while the other localities got their water from the phreatic layer by means of village fountains (Table 1). In many localities water supply system is inadequate as there are big water losses in the distribution network.

Table 1. The water supply system within Bucharest Metropolitan Area

County	Localities with centralized water supply system	
	from local budget	from European funds
Călărași	Oltenița, Budești, Căscioarele, Ulmeni, Spanțov, Chiselet, Mânăstirea, Valea Argovei, Luica, Ileana, Fundeni	Grădiștea, Sărulești (Sărulești-Gară and Sândulița villages); Valea Argovei (expansion) Spanțov (modernization); Mitreni (Mitreni and Valea Roșie villages); Frâsinet (Frâsinet village)
Dâmbovița	Crevedia, Tărtășeși	Ulmi
Giurgiu	Comana	
Ilfov	Bragadiru, Chiajna, Chitila, Jilava, Măgurele, Mogoșoaia, Pantelimon, Balotești, Brănești, Cernica, Ciolpani, Ciorogârla, Corbeanca, Cornetu, Dascălu, 1 Decembrie, Grădiștea, Gruiu, Moara Vlăsiei, Nuci, Periș, Petrăchioaia, Snagov, Ștefăneștii de Jos.	

Source: Pilot study of the Bucharest Metropolitan Zone Management Plan, 2005 and SAPARD, 2006.

Most of the localities in the Bucharest Metropolitan Area do not have any sewage network or water purification systems. Only 24 settlements (out of the total 94) are connected to a sewerage network (Table 2) and 7 of them have water purification plants (Glina, Buftea, Gruiu, Corbeanca, Bolintin Vale, Oltenița, Budești). Even where it exists, the sewage system did not function adequately.

Table 2. The sewage system in Bucharest Metropolitan Area

Județul	Localities with sewage system	
	from local budget	from European funds
Ilfov	Bragadiru, Chitila, Buftea, Jilava, Măgurele, Pantelimon, Popești-Leordeni, Balotești, Brănești, Corbeanca, Cornetu, 1 Decembrie, Gruiu, Moara Vlăsiei, Periș, Petrăchioaia, Snagov, Ștefăneștii de Jos, Voluntari	Chitila (extension), Snagov (Ghermănești village-modernization), Chiajna
Călărași	Oltenița, Budești, Mânăstirea	
Giurgiu	Bolintin-Vale	

Source: Pilot study of the Bucharest Metropolitan Zone Mangement Plan, 2005 and SAPARD, 2006.

In many localities, wastewaters flows directly into the river or lake network, without any adequate purification representing a major environmental threat (Figure 10 and 11).



Figure 10 and 11. Watershed affected by wastewater discharge (Scoiceni Channel and Pasărea River, respectively)

Other environmental issue within Bucharest Metropolitan Area in terms of sub-urbanization process is related to gas supply system. The use of wood and coal heating in most individual households has favoured abusive deforestation with negative effects upon the quality of the environment. In most of the settlements which have gas supply systems the physical and the moral wear of the central heating equipment prevent it from ensuring adequate heating and and cause the pollution of the phreatic layer and of the soil (e.g. in Bolintin-Vale, Mihăilești and Niculești).

The major changes in land use during the transition period determined an improper landscape management, a great number of polluted industrial sites unused or partly used, uncontrolled spread of individual houses without environmental facilities causing, in most of the cases, problems related to waste management.

Within Bucharest Metropolitan Area there are 3 ecological waste deposits and 34 small waste deposits managed at local authority's level (29 in Ilfov County; 3 Călărași County and 2 in Giurgiu County) with surfaces from 5,000 sqm (Clinceni, Jilava, Cernica) to 55,000 sqm (Oltenița), totalising 461,000 sqm (Figure 12). According to EU standards, these local waste deposits will be closed by 2009, as well as by 2010, 2012 and 2017.

Although there are 3 ecological waste deposits of regional importance and 34 waste deposits of local importance, the uncontrolled waste deposits is an important environmental issue for Bucharest Metropolitan Area. Even near Rudeni Ecological Waste Deposit, the house

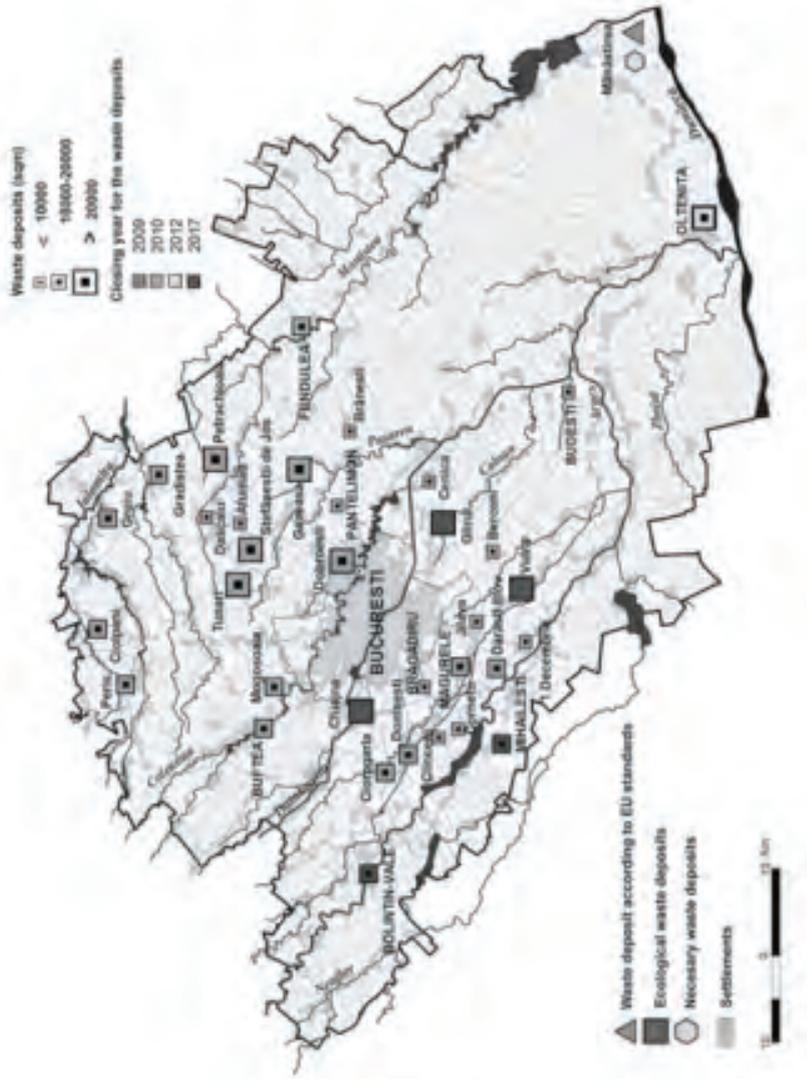


Figure 12. Waste deposits in Bucharest Metropolitan Area, after Waste Management Regional Plan, București-Ilfov and South-Muntenia Development Regions 2006–2013

waste is chaotically spread in other unprotected cesspool. In this village, the residents claim that during summer time are affected by the unpleasant smell and the toxic smog due to fires that occur weekly (Figure 13).

Most of the waste cesspools are inadequate, unauthorized or incompatible with the UE demands and standards. House waste is chaotically spread nearby settlements, forests, water bodies (as a source of drinking water) and agricultural land.

The illegal waste deposits and their improper exploitation could determine a major impact on the environment on a long term through: soil degradation; air pollution by a high level of dioxins, furans and acids which could affect peoples health and reduce development of diffe-



Figure 13. Fire affected an unprotected cesspool from Rudeni village, Ilfov village (6th May 2007)

rent species; underground water contamination with heavy metals, nitrates, nitrites, acids, organic substances; flora and fauna contamination; biodiversity and habitats losses; important fire sources etc (Figure 14 and 15, 16 and 17).



Figure 14 and 15. Uncontrolled waste deposits in Pasărea riverbed (March 2007)



Figure 16 and 17. Household waste randomly thrown in Valea Dragului Commune (Giurgiu County) and Mânăstirea Commune (Călărași County), respectively

CONCLUSIONS

The increased urban sprawl which has been affecting the Romanian territory over the last period, especially through the development of metropolitan areas represents the main characteristic of today's urban evolution trends.

The environmental impact of the metropolitan development through suburban process represents: space consume (spatial expansion) with a great impact on agro-forestry ecosystems through different environmental changes (deforestations, drills, etc.) and the ratio population/habitat by: residential sprawl (circular – around the capital city and radial – along the main routes) and new industrial areas (industrial or logistic parks) by grouping banking, real-estate, ensuring companies; uncontrolled natural resources exploitation; environment pollution as a result of solid waste diversification, waste waters discharge in river bodies, industrial units which not respond to European Union demands etc.; damaging the population health status by increasing the number of ill persons (cardiac, lung diseases, etc) and increasing the incidence of climatic extreme events (rainfall, storms, heat waves, etc).

The increasing suburban pressure upon the areas around the Bucharest Municipality leads to the diversification of land use and environmental impact categories and it has numerous complex effects upon the environment.

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NEW FUNCTION AND INDUSTRIAL POTENTIAL OF EUROPEAN UNION REGIONS

CHANGES IN DIFFERENTIATION OF POLISH REGIONS' INDUSTRIAL POTENTIAL WITHIN THE EUROPEAN UNION

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Abstract. Transformation of socio-economic system in Poland and other Central and Eastern European countries derived from the change in spatial differentiation of industrial potential. Structures of industry, formed in the conditions of planned economy, were subjected to gradual changes, both in the area of quality and quantity. The work presents differentiation of industrial potential in regional division of the European Union (NUTS-1), with particular respect to Poland, measured by employment level and gross added value as well as change of the role of industrial activity in economies of specified regions. That fact enabled the authors to indicate the location of Polish regions on the map of Europe's industrialization; thanks to dynamic approach, it was also possible to capture the hitherto existing and define the future tendencies of changes in economical structures and distribution of industry.

Key words: industrial potential, regions of European Union, employment, gross added value, work efficiency

INTRODUCTION

Transformation of socio-economic system in Poland and other Central and Eastern European countries, started in 1989, made an influence on changes in economy's functioning, also including spatial organization of industrial production. Economic structures formed within the socialist system of planned economy were passing through gradual changes, leading to increase of spatial differentiations in regional scale; that fact became subject of interest for many authors (alter alia Czyż 1998; Domański B. 2001, 2006; Domański R. 1997; Gorzelak 1993, 1996; Kortus, Rajman 1995; Kukliński, Mync, Szul 1997; Parysek 1998; Strykiewicz 1999; Szlachta 1993). The increase of spatial differentiations in regional scale is caused also by changes in industrial production, reflected by relocation and increasing concentration of newly-established companies in regional systems. It becomes particularly visible in case of foreign investments flowing into specified regions, what can be accompanied by ceasing activities in the hitherto existing production units (Pavlinek, Smith 1998; Domański B. 2001,

Domański B., Gwosdz 2005). Nevertheless, it shall be noted that relocation of production activity derives only to small extend from rules of implementation of regional policies, treated marginally in the period of economic transformation. The main role in this process was played by decisions made on companies' level, with regard to legal and administrative circumstances, in Poland connected particularly with functioning of special economic zones.

Within the current transformations in global economy, connected with passing towards a new phase of information development, exemplified by intensifying processes of globalization and European integration, adjusting processes of various Polish economic systems to changing circumstances of global economy becomes an interesting research issue. In this area, an important role is played by industrial companies performing various functions in economical space with spatial-productional links growing among them. An engine stimulating these highly complicated processes is the growing competition in the area of searching for new sales markets for specified products, as well as for the best places for localizing specified activities, covering relatively cheap, but also advanced resources and production capacities. It happens so, as in the so called "new economy" industries, the meaning of cheap manpower resources is decreasing in comparison to qualified research and technical-engineering employees, with simultaneously growing meaning of research and development works and modern production technologies (Wieloński 2003; Ziolo 2001).

In the situation of regional development in Central and Eastern Europe countries being regulated after 1990 mostly by market processes, it seems to be important to answer where, within the space, new production companies are localized or where existing ones grow and, hence, how employment rate and gross added value in industry change. Thus, the aim of the work is to present spatial differentiation of industrial potential of European Union regional systems, specially referring to Poland, measured by employment rate and gross added value, as well as change of role of industrial activity in the economy. Defining the range of influence of regional industry should let us indicate the places of accumulation of new development advantages, what is important from the perspective of these areas' development. Meaning of new investments and development of exiting industrial companies is important not only because of companies' direct impact on the local labour market, but also by generating multipliers' effects, being subject of many authors' interest. Among the most important elaborations concerning these issues, one can list works of Lee Hansen and Tiebout (1963), Garnick (1970), Lloyd and Dicken (1972), Hayter and Watts (1983), Conti (1993), Dicken, Forsgreen and Malmberg (1994), Grabher (1994), Saddler and Swain (1994), Hardy (1998) as well as collective work, under direction of Conti, Malecki and Oinas (1995). Few works concerning industrial companies' impact on local and regional surrounding appeared also in Polish geographical literature. Here, one can give examples of works of B. Domański (2004), collective work under direction of Stryjakiewicz (2004) and a work directed by B. Domański and Gwosdz (2005).

To asses the recent changes in the space of European industry in regional systems, a dynamic analysis of discussed processes was carried out, covering the period of economical transformation of Central and Eastern Europe countries and their integration with the European Union. Comparison of employment rate and production value makes it possible to capture changes in work efficiency, providing a possibility to answer the question on to what extent the changes in this efficiency in specified regions of the European Union are a reflection of new development trends in industry.

The time scope covers the years 1996–2004. NUTS-1 regions, widely known as macro-regions in many countries, were taken as the basic units of research. The source of statistical data were Eurostat figures and data of statistical offices of particular countries. Although all the 27 EU countries were covered by researches, it has to be remembered that barriers in access to comparable data were met.

SPATIAL DIFFERENTIATION AND CHANGES IN INDUSTRY SHARE IN EMPLOYMENT

Role of industry in labor markets of the present European Union (EU-27), measured by the coefficient of employment in industry against total employment is characterized by high spatial differentiation (Figure 1). Value of the coefficient in particular regions varies from 6.6% and 31.4%.

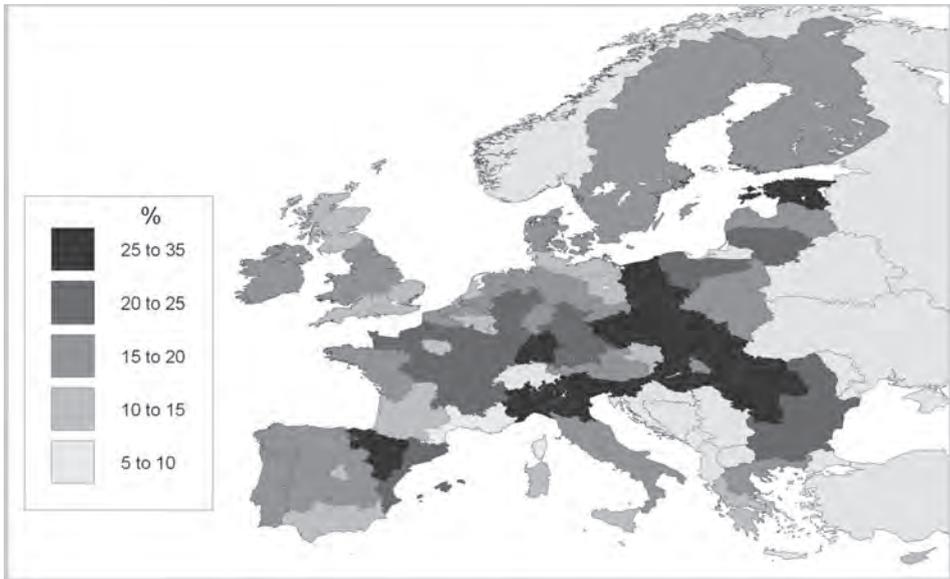


Figure 1. The share of industry in total employment in 2004

Source: Figures 1–12 – authors' elaboration based on Eurostat Database.

Analysis of coefficient of industry employees in total employment in 2004 indicates that most of the Central European regions shall be listed among the most industrialized ones within European Union. In that group, one can find particularly the Polish North, North-West and South-West regions, with share of industry making over 25% in 2004. High level of employment in industry is also characteristic for Czech Republic, Slovakia, Slovenia, Estonia and some regions of Hungary. In Western Europe, high level of industrialization of North Italy regions, one of the most industrialized regions of Europe, as well as Baden-Württemberg region in Germany and Noreste region in Spain can be observed.

Although share of industry in employment in regions covering metropolitan areas of European capitals, like London, Paris, Madrid, Berlin, Brussels and some other regions, e.g., Southern France (Méditerranée) is not big, analysis of industry concentration coefficient indicates

that level of concentration of industrial activities in these regions is very high (Figure 2).

These regions, although characterized by very high share of services in employment structure, play also significant roles in industry development, mostly thanks to conducting advanced research and development programs and implementing innovations. That is connected with concentration of R&D centres of many global industrial corporations in these areas (Ziolo 2006). Besides metropolitan areas, regions of strong concentrations of industry establish a characteristic belt from South of England, via Benelux countries and regions of Western Germany, down to Northern Italy. Hence, spatial display of regions of high concentration of industry refers to the main axis of European economic development.

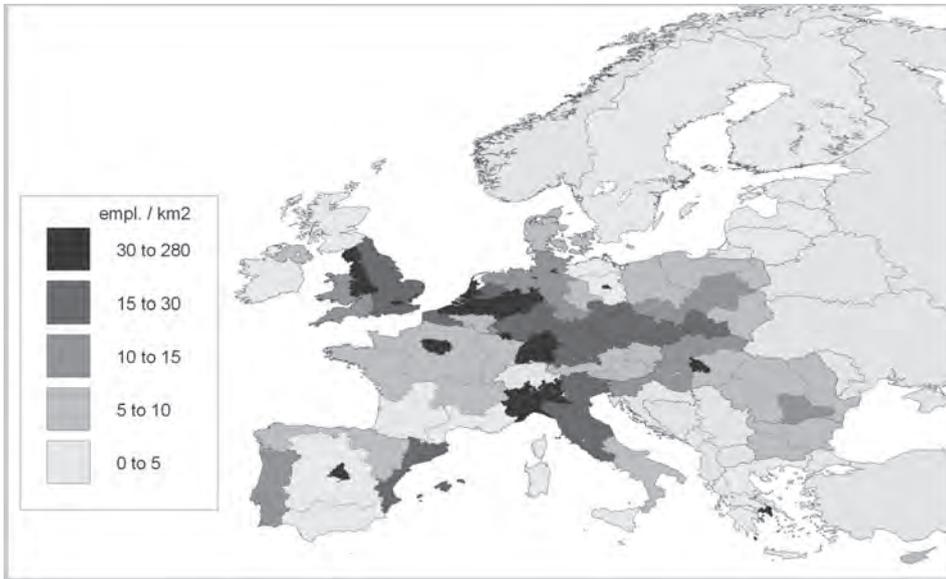


Figure 2. Industry concentration coefficient 2004

Analyzing the changes of share of industry in employment in the years 1996–2004, it should be noted that significant processes of decreasing share of industry in labour markets can be observed in most of the European countries, what is mostly a result of reduction of employment in industry (Figure 3).

Process of reduction of employment in industry concerns mostly Central European countries, where socialist industrialization lead to high surplus of industrial job posts in comparison to other economical activities. In the period of economic transformation, tendencies forming labor market in these countries have mostly represented increasing supply of job posts connected with services. Restricting employment in industry concerns also the most developed industrial regions of Europe, most of all Great Britain and Germany, but in these case it derives mostly from relocations of the more work-consuming types of production, and focusing on activities of higher added value. That effects in increasing employment in R&D centres, responsible for introducing new products. Relocation of economic activity takes place also within European Union, what results in significant growth of employment in industry in some regions, e.g. in Spain, Finland, Ireland, Greece, South and West part of France, as well as some regions of Italy and Hungary.

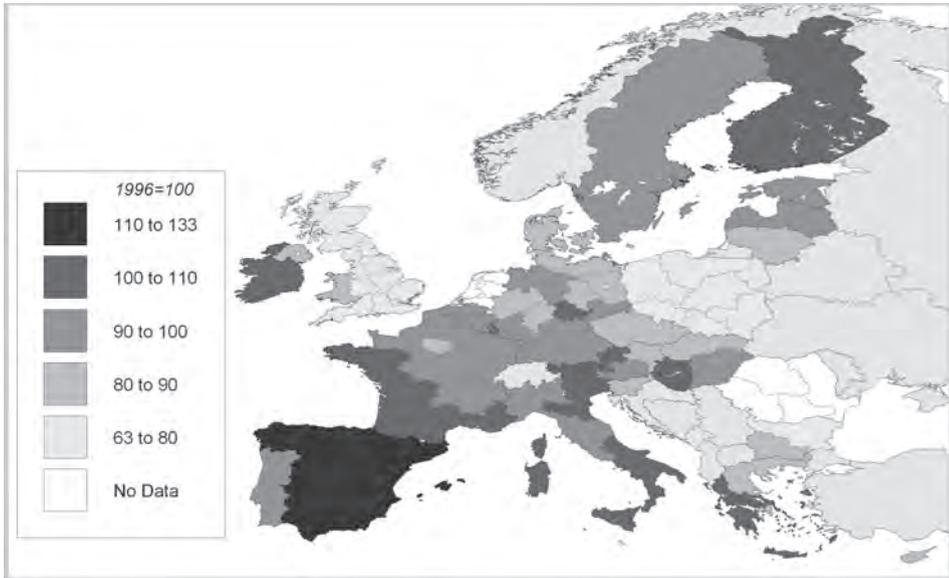


Figure 3. Dynamics of industrial employment (1996–2004)

Here, one should also notice that total employment in most of the regions was maintained at the same level or kept growing what derives from the growing meaning of services' sector and development of outsourcing processes in industry. In the effect despite increase of employment in industry in many regions, its share decreases in most of the European countries (Figure 4). Among the exceptions, one can count some regions of Spain (Noroeste, Centro), Eastern Germany (Thüringen, Sachsen), Hungary (Dunántúl) and Southern Italy (Isole).

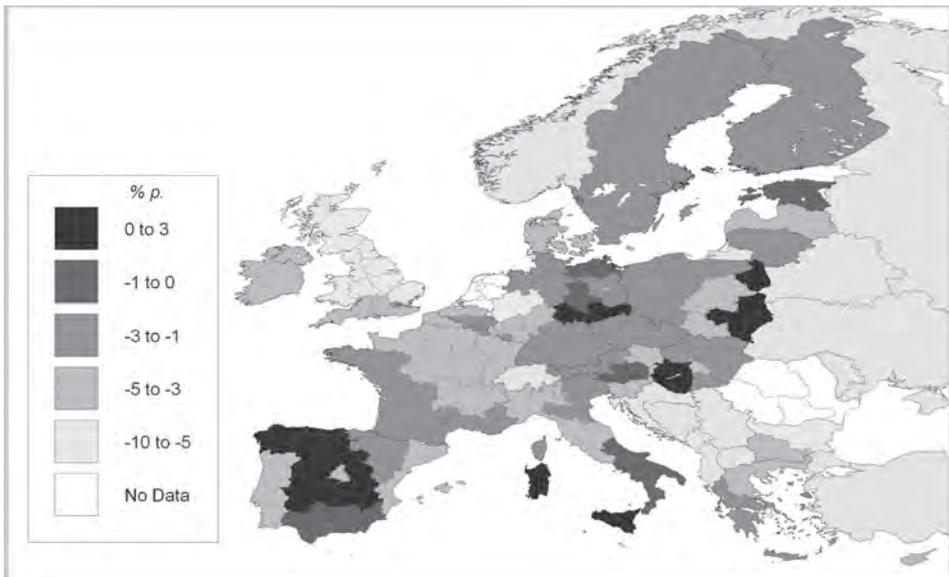


Figure 4. Changes in share of industry in total employment (1996–2004)

SPATIAL DIFFERENTIATION AND CHANGES OF INDUSTRY SHARE IN GROSS ADDED VALUE

Analysis of coefficient of industry share in gross added value in 2004 shows that industrial potential of EU regions measured by this coefficient is higher than in case of employment rate (Figure 5). This is a natural consequence of constant mechanization and automation of production processes and, hence, elimination of human work efforts in industry.

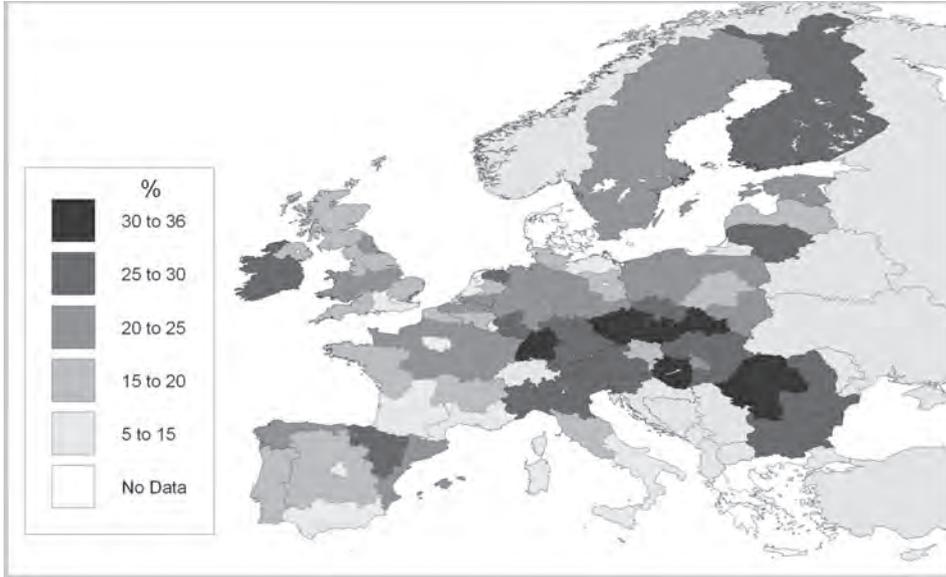


Figure 5. Share of industry in total gross value added (GVA) in 2004

Share of industry in gross added value in 2004 was differentiated, varying in specified regions between 6.6% and 35.1%. In many regions, this share made over 30%, mostly in Czech Republic, some regions of Romania, Hungary, Southern Germany and South region in Poland. In general, Central Europe is characterized by high share of industry in gross added value, but – in contrary to employment – this share is comparable to many regions of Western Europe. What shall be particularly noticed, is the relatively low share of industry in gross added value in regions of Poland, except the Southern one, covering i.a. highly industrialized Górný Śląsk (Upper Silesia) and Małopolska provinces, where many new manufacturing companies were established in the recent years, mostly from automotive branch, characterized by high added value.

The index of dynamics of gross added value in industry for the years 1996–2004 indicates that gross added value in industrial production increased in most of the analyzed regions, even up to 306% in case of Lithuania. A growth took place also in those ones characterized by drop of employment in industry. The only exceptions are: Schleswig-Holstein region in Northern Germany and Berlin. The highest increase is visible in Central European countries, the Baltic States, Ireland and Iberian countries.

The increase of share of industry in Central Europe regions derives from intensive processes of reindustrialization, exemplified by inflow of new investments, e.g. to Niedersachsen (Lower

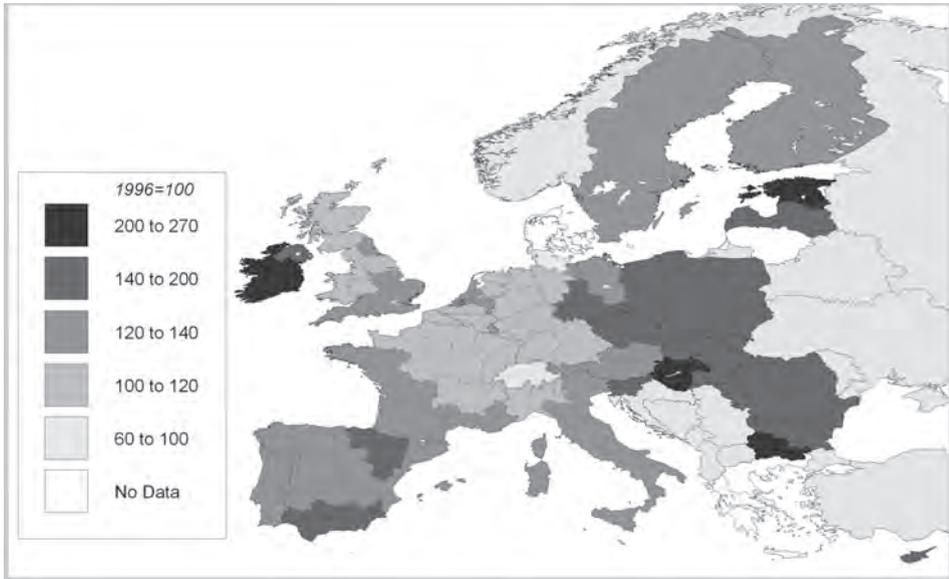


Figure 6. Dynamics of gross value added (GVA) in industry (1996–2004)

Saxony), Czech Republic and South region in Poland. These investments are connected mostly with automotive branch. In Central regions of Western Europe (mostly France, Germany, Benelux) and Great Britain, a slight increase of gross added value in industry took place. Thus, it is hard to consider processes of de-industrialization in Europe from the point of view of this coefficient. What should be rather noticed is the change of industry's role in the economy which is presently not that much connected with mobilization of labour resources.

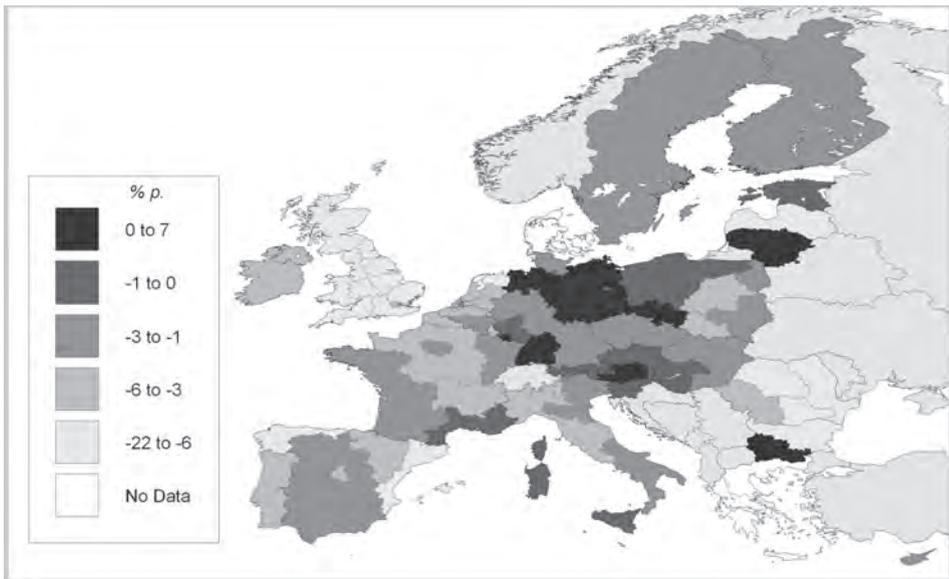


Figure 7. Changes in share of industry in total gross value added (GVA) – 1996–2004

Anyway, it shall be underlined that in the researched period, a rapid growth of gross added value in service sector took place in the same time, being often higher than dynamics of gross added value in industry. Subsequently, in most of the European countries, a decrease of industry share in gross added value took place in the years 1996–2004 (Figure 7). Increase of this share was found only for some regions, mostly Eastern Germany, presenting very low share of industry in the first years of transformation, connected with breakdown of production as the effect of the so called “transformation shock”. This is the effect of new investments in industrial activity to a high extend deriving from its relocation inside Germany, as a result, of realization of program for Eastern regions.

SPATIAL DIFFERENTIATION AND CHANGES OF INDUSTRIAL ACCORDING TO SYNTHETIC MEASURE

The above analysis of industrialization is based on measures of industry share in economies of specified regions. However, big share of industry in employment or added value is not equal to significant level of industrial potential concentrated in the region. Industrial potential is also a reflection of area of the specified region. Thus, when analyzing this potential, one should also consider population differentiation, and hence, total employment level of specified regions according to NUTS-1 division.

To obtain the synthetic approach to spatial differentiation and changes of industrial potential in the discussed regions, a synthetic measure was calculated, covering two empiric measures, i.e. employment rate and gross added value¹ (Figure 8).

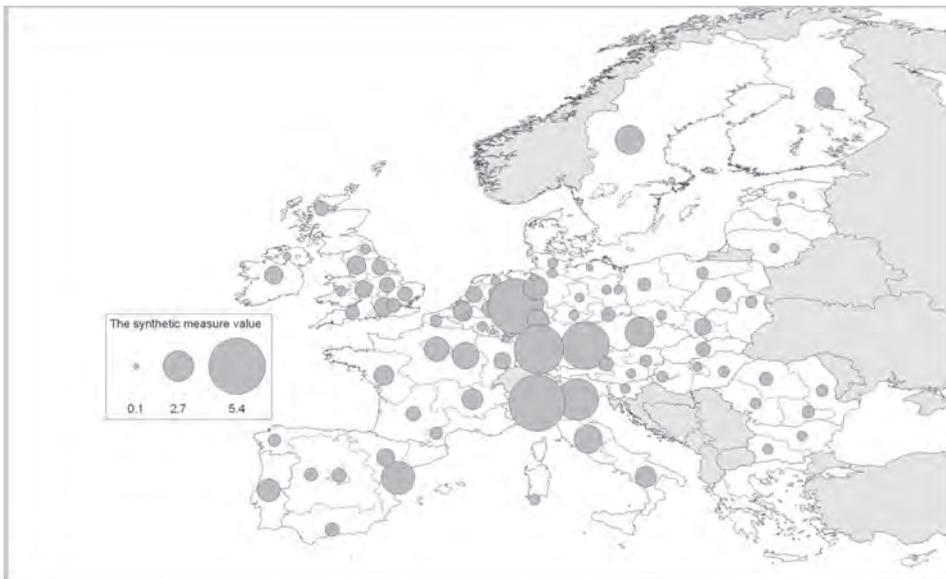


Figure 8. Synthetic measure of industrial potential in 2004

¹ The synthetic measure was calculated according to the method described and applied by Ziolo (1972, 1973).

Among areas of highest industrial potential, the biggest and, simultaneously, most industrially developed regions can be found, among which one should list Western and Southern Germany, North and Central regions of France, all regions of Italy, as well as Sweden, Finland, Portugal and Czech Republic. In case of Poland, the highest potential is clustered in Southern and Central regions (Figure 9).

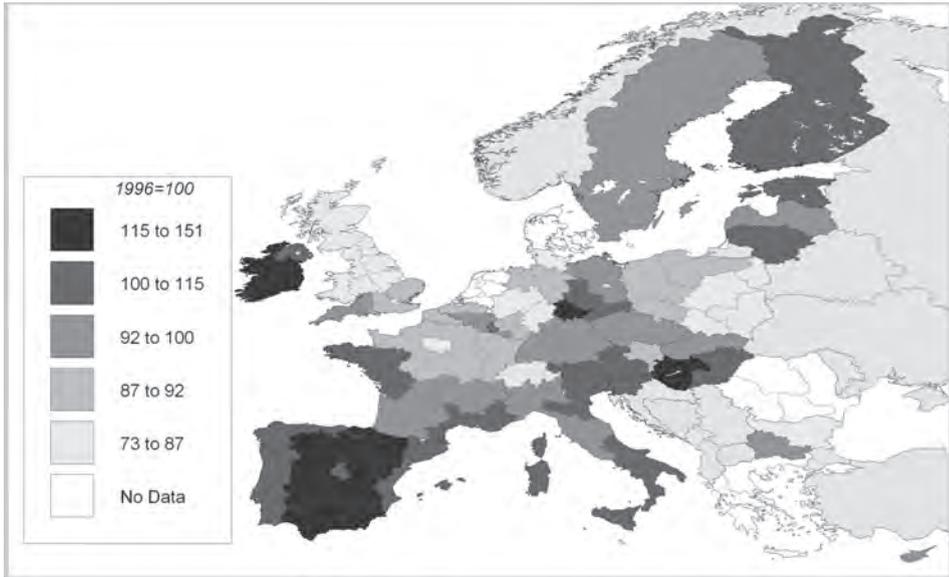


Figure 9. Dynamics of synthetic measure of industrial potential (1996–2004)

Analysis of dynamics of synthetic measure of industrial potential indicates that the most industrialized regions are losing their meaning; this concerns regions of Great Britain, Eastern France, Eastern Germany and most of Central European regions, including Polish ones. The highest increase of potential in the years 1996–2004 was characteristic for Ireland, Spain, Western Hungary and Thüringen in Germany. Hence, some interdependence is visible between the increase of industrial potential and high rate of economic development, characteristic for these regions.

SPATIAL DIFFERENTIATION AND CHANGES IN WORK EFFICIENCY IN INDUSTRY

Analysis of work efficiency coefficient spatial differentiation, measured by gross added value per employee indicates significant differences between regions of Western and Central European countries (Figure 10). Despite liquidation of many job posts, mostly in the most work-consuming activities, conducted technological and organization restructuring in industrial companies, basing i.e. on outsourcing units not connected directly with production and inflow of many new industrial investments, work efficiency in countries of the transforming Central Europe is still very low (below 30 thousand Euro per 1 employee). For comparison, efficiency in Scandinavian countries, Benelux, Ireland and some regions of Austria, Germany and France is 3 to 5 times higher (even over 100 thousand Euro per 1 employee) than in

regions of Poland, Czech Republic, Slovakia, Hungary and Baltic States. In case of some regions of Bulgaria, with coefficient below 10 thousand Euro per 1 employee, this difference, in comparison to the most developed regions of Western Europe, is more than tenfold.

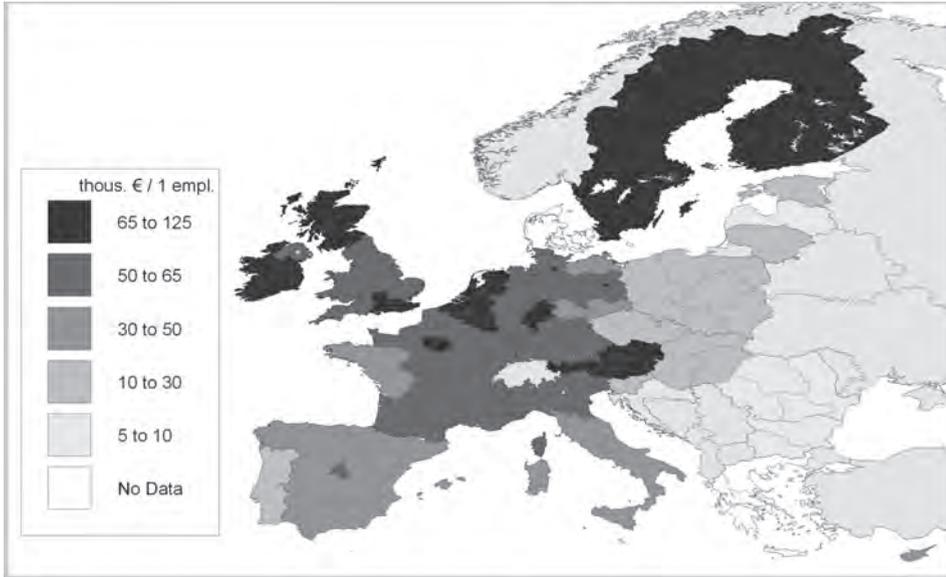


Figure 10. Industry work efficiency 2004

Low work efficiency in Central European countries derives mostly from lower labour costs. First of all low labour costs make the most work-consuming activity get relocated as the first ones to these regions of Europe. Besides, from the surveys carried out with managers, one can conclude that there is no need of implementing full production automation in Eastern European countries as such lines are much more expensive, while in case of manufacturing products of short lifecycle (e.g. automotive parts), they need frequent changes. Hence, at low labour costs, more work consuming technologies are economically rational. Secondly, processes of restructuring of technology and employment in industrial companies in Central Europe, including Poland, still cannot be defined as finished ones. This mostly concerns very big companies from strategic sectors (e.g. armaments and power industries) or the ones representing traditional, low-yield branches (e.g. textile industry), which are not too popular among foreign investors or which privatization is retarded by the authorities for political reasons or due to social pressures.

However, processes of industry transformation, including employment restructuring, implemented in the last years in Central Europe, make some impact on work efficiency (Figure 11). In 2004 in comparison to 1996, the labour efficiency coefficient in most of the regions of this part of Europe increased between 200% and almost 350%. Besides Central Europe, high increase of work efficiency took place also in Ireland and most regions of Great Britain.

To provide a better view of change in relations between employment and gross added value in Poland and other regions of European Union, diagrams, presenting these features in 1996 and 2004, were prepared (Figure 12).

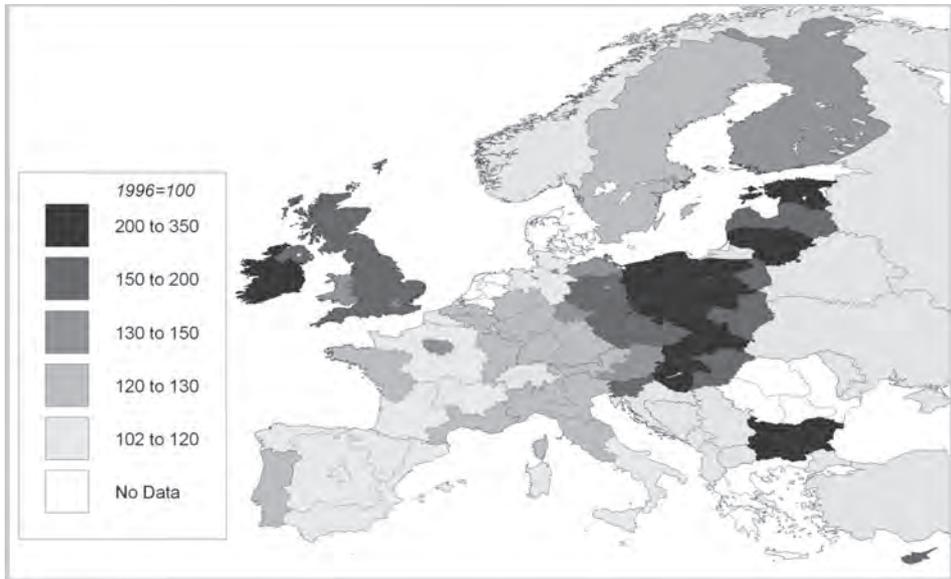


Figure 11. Dynamics of industrial work efficiency (1996–2004)

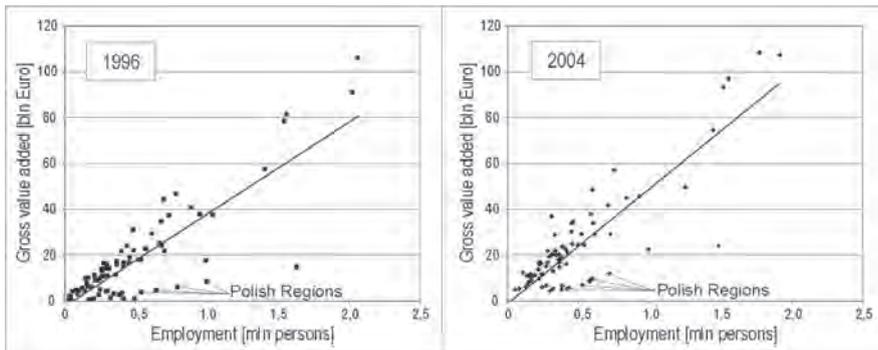


Figure 12. Changes of industrial work efficiency in the years 1996–2004

Here, one can see the difference between Polish regions and the Union average, presented on the diagram as function of linear regression, in the context of gross added value provided by an employee. Increase of added value with simultaneous drop of employment in Poland made the work efficiency coefficient get much higher nowadays. The distance to be caught up is, however, constantly high, as the average efficiency in European Union has also increased, what is well presented by the increase of angle of regression function presented on the diagram.

CONCLUSIONS

Spatial differentiation of industry within the European Union presented in this work is a trial of synthesis of development and meaning of industry in economies of specified regions.

The analysis was carried out basing on employment rate and gross added value of industry in the entire economy, thanks to what it was possible to visualize both the work-consuming and capital-consuming activities, as well as to present spatial differentiation and changes in work efficiency. The most important cognitive-diagnostic conclusions deriving from the hereby researches can be formulated in the following way:

- A significant tendency to decrease employment in industry can be observed in most of the researched regions, that means decreasing the importance of industry in activating work resources.

- Nevertheless, decreasing employment does not necessarily mean decreasing the role of industry within the economy – in most of the European regions, increase of added value created by the industry can be observed; the exceptions are the Berlin and Schleswig-Holstein regions (Germany), and only in those cases, processes of de-industrialization can be considered. Hence, in the context of gross added value, industry in most regions of the European Union presents developing tendencies.

- Still, significant differences can be observed in industrialization of regions of the old (EU-15) and the new European Union, due to much higher share of industry in employment in Central European countries.

- Division into Central and Western European countries becomes even more significant in the context of work efficiency coefficient; in these case, 3-5 times high, or, in extreme case, even 10 times high differences can be observed.

- Central Europe belongs to the fastest developing areas from the point of view of gross added value and work efficiency in industry. That is connected with localization of many new industrial companies, partly by relocation of businesses from Western Europe – mostly Germany (Nordrhein-Westfalen province) and Great Britain.

The contemporarily happening processes of changes of economic structure seem to be of constant character; hence, further increase of added value in industry should be expected, what should contribute, together with decreasing share of this sector in the economy, to the further increase of work efficiency.

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INDUSTRIAL PARKS IN ROMANIA'S INDUSTRIAL TOWNS. PRESENT-DAY TRENDS

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Abstract. The “Industrial Parks” Programme elaborated by the Romanian Government and implemented in 2002 was aimed at improving the business milieu by developing and updating the physical infrastructure, and stimulate Romanian and foreign investment of capital. The foundation of industrial parks relied on the use of the material resources of former mammoth industrial estates, or of units belonging to the defense/military industry (infrastructure, workshops, utilities) state property at the time. In this way, huge estates with a poor infrastructure, of no interest to private investors, could be put to account. The parks were set up in strategic industrial zones adjoining economic growth towns with good links to the transport infrastructure. The aim was to shift industry from centre to periphery. However, industrial parks are not a salvage solution for all declining economic areas forcibly industrialised in the past, because whatever budgetary funds are earmarked, it is crucial that these parks become attractive to investors.

Key words: “Industrial Parks”, industrial towns, industrial estates, regional economic infrastructure

INTRODUCTION

The political decision to set up industrial parks in Romania is of relatively recent date. The first legal industrial park status was granted in 2002. In 2006 there were already 37 such units, but twice as many trading companies have been requesting the management of an industrial park. As a matter of fact, only some 50% of these parks are operational, usually the so-called brownfields¹ which have taken over parts of the old industrial estates, greenfields² parks being little developed so far, many of them are still under construction.

The “Industrial Parks” Programme elaborated by the Romanian Government (Decision 1116/2001) and implemented in 2002 was aimed at improving the business milieu by developing and updating the physical infrastructure, and stimulate Romanian and foreign investment of capital. The foundation of industrial parks relied on the use of the material resources of

¹ Brownfields are abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contaminations.

² Greenfield land is a term used to describe a piece of undeveloped land, either currently used for agriculture or just left to nature.

former mammoth industrial estates, or of units belonging to the defense/military industry (infrastructure, workshops, utilities) state property at the time. In this way, huge estates with a poor infrastructure, of no interest to private investors, could be put to account. As a result, existing rooms were not degraded, investments came in and new jobs were created.

The Programme was intended to attract investors in order to improve the regional economic infrastructure basically the industrial parks. So, afferent projects had in view just this requirement in order to facilitate the activity of economic agents. The projects (2002–2006) were funded by the Romanian Government from the state budget through the intermediacy of the Ministry of Development and Prognosis (MDP), implementation devolving on the Regional Development Agencies (RDA), the whole scheme benefiting by irredeemable financial and technical assistance for implementing and monitoring.

The Government Ordinance No. 65 on the construction and functioning of industrial parks, published in the Official Monitor, reads as follows: the industrial park is a limited space in which economic, scientific research and/or technological activities are carried out. The area has access to European or national highways, covers a minimum of 10 hectares, is owned or used by the trading company which lodges a request for an industrial park title valid for at least a 30-year period.

Industrial parks may be established by government decisions on the site of industrial estates, and may benefit from several facilities, such as exemption from taxation or change of destination or for diverting the terrain afferent to the park, originally used for agriculture to the managing company; a 20% deduction of taxation on profit from the value of investments made in the industrial park by economic agents, who invest in construction for the transfer and distribution of electric energy, thermal energy, natural gas and water; the prolongation of the added value payment term for materials and equipments needed to put in place the park's utilities system and connect it to existing utilities networks or avenues, until the industrial park is commissioned and becomes operational.

The main specialised areas of industrial parks:

- The processing industry focused on the processing and/or restore (the use value of goods), with possibilities to concentrate on various peak industries;
- Businesses, especially finances-banking, consultancy, design, research-development, and business management;
- Distribution, mainly storage of goods and logistics in the vicinity of container terminals, transport infrastructure (highways, railways, airports, sea and river harbours) and customs houses;
- Services, dominantly services-producing industries.

In order to support the development of these activities, a series of connexion services corresponding to the area the industrial park is specialised in can be developed, for example utilities supply, cleaning and security, commercial and public catering, hotels, accountancy, business assistance, insurance, and similar ones, or those directly relating to them.

There are 14 industrial towns hosting industrial parks on their territory (Figure 1). Victoria Industrial Park (hosted by Victoria one-industry town, specialised in the chemical industry), the property of the Local Council (Government Decision No. 2407/2004) is still green-field land, while all the others are already operational.

The Government has already singled out several industrial towns, which possess lands fit to be turned into industrial parks. It is the case of Baia Mare, Cehu Silvaniei, Câmpia Turzii,

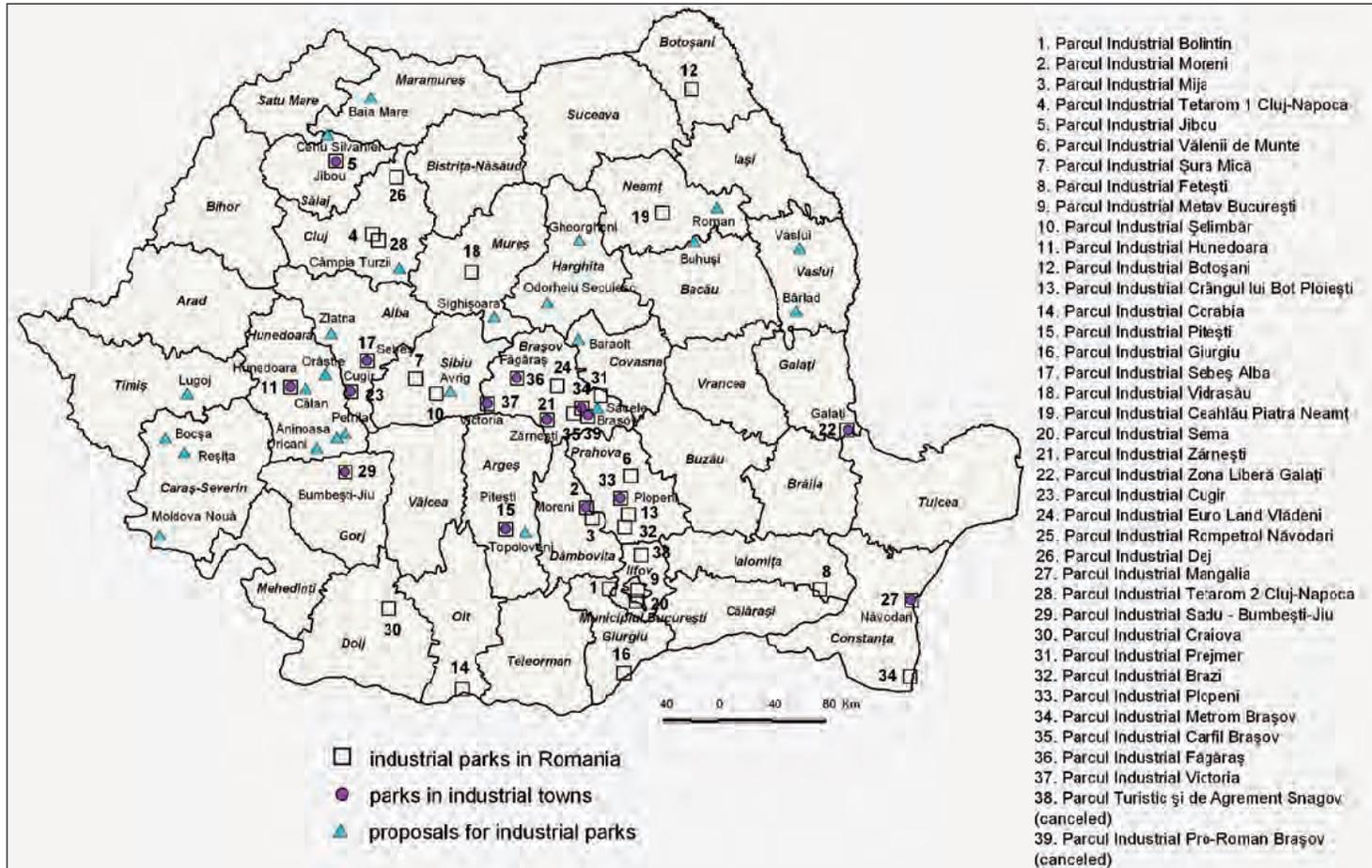


Figure 1. Industrial parks in Romania

Zlatna, Orăștie, Călan, Aninoasa, Petrila, Uricani, Moldova Nouă, Bocșa, Reșița, Lugoj, Avrig, Topoloveni, Sighișoara, Odorheiu Secuiesc, Gheorgheni, Săcele, Baraolt, Buhuși, Roman, Vaslui, and Bârlad, all of which may benefit from the previously mentioned facilities.

The parks were set up in strategic industrial zones adjoining economic growth towns with good links to the transport infrastructure. The aim was to shift industry from centre to periphery. These parks, some situated on green-field land, were established by local or county authorities, by the private sector or by joint ventures. In terms of type of title, industrial parks in Romania fall into two categories: title granted by Order of the Minister and title granted by Government Decision.

Industrial park economic agents are engaged in transport, wholesale or retail trade, installation and construction works, car services, processed and canned vegetables, advertising, metal constructions, publishing and printing, garments, software, etc.

REGIONAL DISTRIBUTION OF INDUSTRIAL PARKS

Most industrial parks located in the eight development regions are found in the Centre and South-Muntenia (Figure 2) which are highly urbanised and industrialised regions. As a matter of fact, here industrial parks cover the largest areas. At the other end of the spectrum stand the West, Bucharest and North-East regions which have no more than 1–2 parks. That the West Region has only one park is due to the absence (with the exception of Hunedoara and Caraș-Severin counties) of very big industrial estates that could be turned into industrial parks.

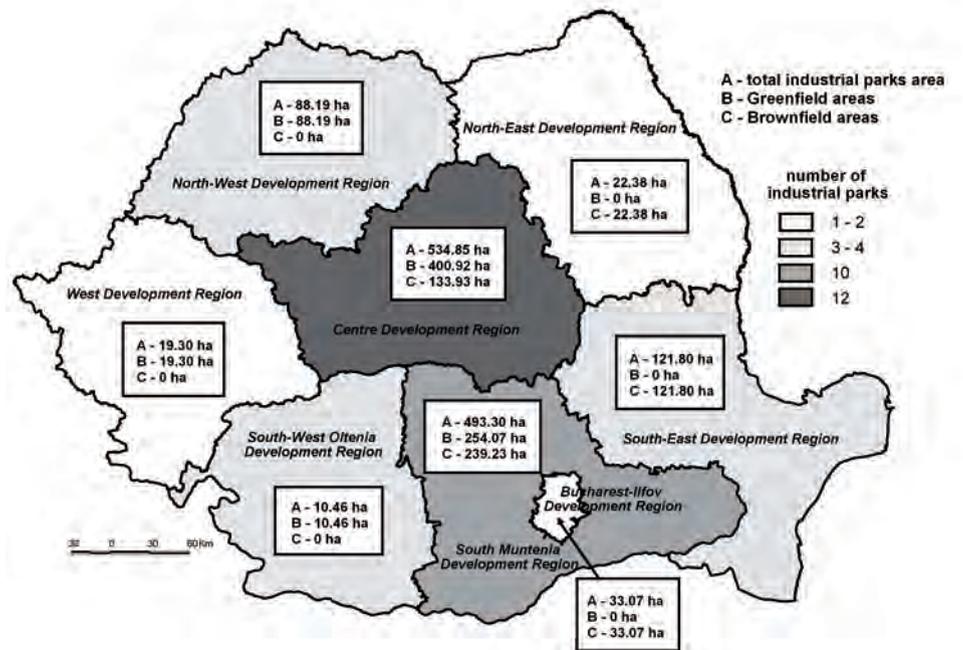


Figure 2. Regional distribution of industrial parks (Source: Ministry of Administration and the Interior)

The characteristic park type is green-field-based (North-West, South-West and West regions), brownfield (Bucharest, North-East and South-East regions) and mixed (Centre and South-Muntenia regions).

DEMOGRAPHIC SIZE OF TOWNS WITH INDUSTRIAL PARKS ON THEIR TERRITORY

Half the industrial towns housing industrial parks on their territory are mostly middle-sized (7 towns) with 20,000 – 50,000 inhabitants (Figure 3).

In 2005 the smallest towns in terms of demographic size were Victoria (9,393 inh.) and Plopeni (9,804 inh.). Large county-seat cities – Galați (298,366 inh.), Brașov (282,517 inh.) and Pitești (171,071 inh.) also proved very attractive to native and foreign investors. The city of Brașov had three industrial parks – Metrom Brașov Industrial Park, Carfil Brașov Industrial Park and Pro-Roman Industrial Park, the last one losing the title.

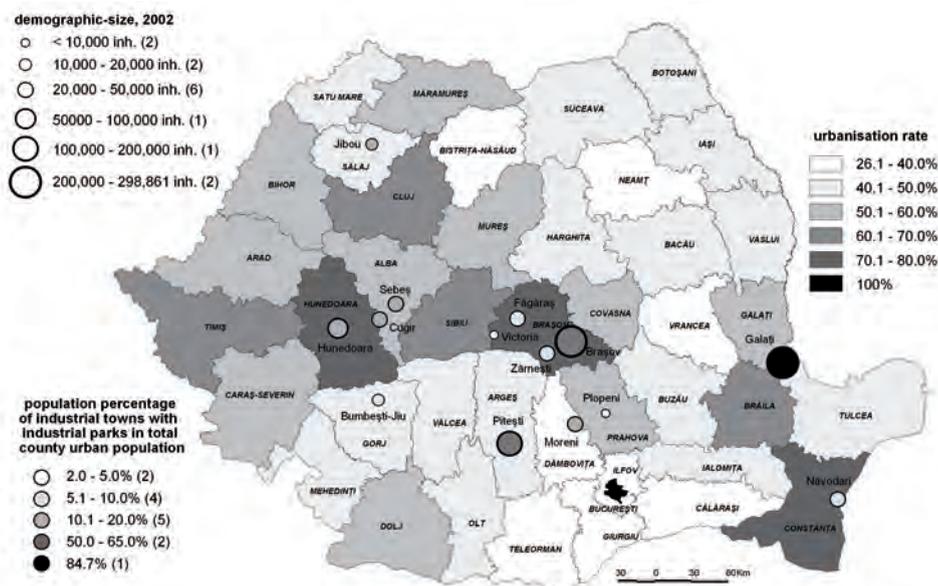


Figure 3. Demographic size of industrial towns with industrial parks on their territory, 2005

EMPLOYMENT RATE IN INDUSTRIAL TOWNS WITH INDUSTRIAL PARKS ON THEIR TERRITORY

Employment rate, calculated in terms of the employed population/age-able active population ratio reveals an area's job-supplying economic capacity. Simultaneously with the general trend of unemployment growth and the constant decrease of the working population, labour employment levels also dropped. The general dynamics and territorial distribution of labour employment in industrial towns was largely affected by delayed restructuring of some industrial branches.

Thus, over the 1992–2002 period, the situation of industrial towns with industrial parks on their territory looked as follows: from 98.1% (Braşov) and 90.7% (Năvodari) in 1992 to a maximum of 97.5% (in Braşov) and a minimum of only 78.4% (at Plopeni) in 2002 (Figure 4).

At the beginning of the transition period, the processing industry experienced greater fluctuations than the extractive branch which benefited from state subventions so that it could maintain its workforce at fairly constant numbers. However, by mid-1990s state assistance being cut, there was a sudden rise in lay-offs, massive job losses increasing the ranks of unemployment.

Most affected were the towns specialised in machine-building, with over 15% of the workforce being made redundant (Plopeni, Cugir and Bumbestii-Jiu); a similar situation had the heavy industry towns Săcele, Victoria and Hunedoara, 10–15% of their employees were laid off, and the local economies having few possibilities to offer them jobs. The situation was somewhat better in some large cities, county-capitals (Piteşti, Braşov and Galaţi) where only 0.2–1.8% of the employed population was laid off. Besides, here were more opportunities in the tertiary sector.

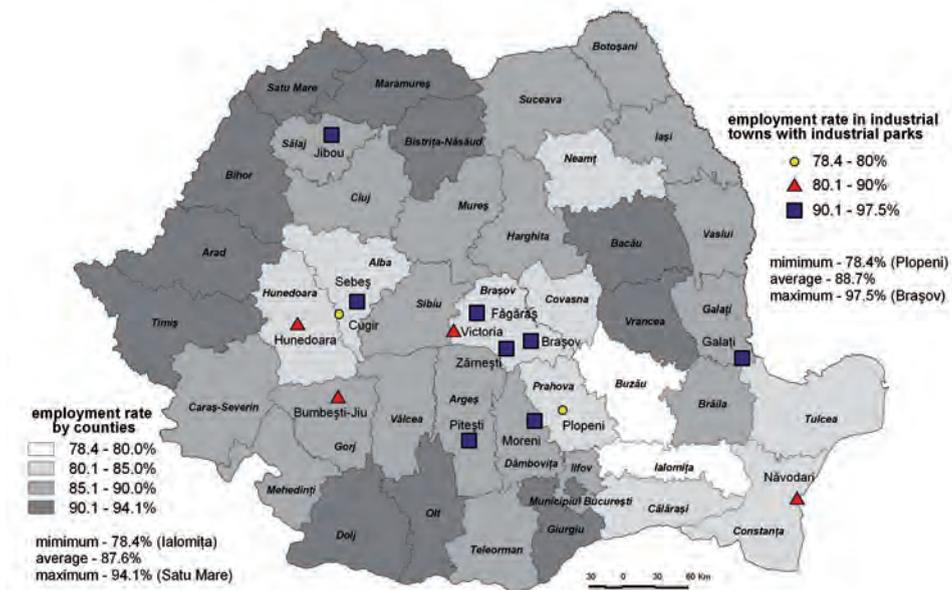


Figure 4. Employment rate in industrial towns with industrial parks on their territory, 2005

UNEMPLOYMENT RATE IN INDUSTRIAL TOWNS WITH INDUSTRIAL PARKS ON THEIR TERRITORY

Unemployment is a stressing factor of transition. In 1992, the unemployment rate of industrial towns with industrial parks stood at 4.3% on average (compared to 7.4% per urban total), with fluctuations between 3.1% at Moreni and 9.3% at Năvodari. High values (over 5%) registered Săcele, Hunedoara and Victoria, while in machine-building towns under 5%

(Bumbești-Jiu, Plopeni and Cugir) were jobless.

These values are important for the future evolution of unemployment they representing reference points for assessing the beginning of growth. Evolutions would reveal a slight decrease of country level, but a disquieting increase at town level. In mid-1990s, well-outlined unemployment areas existed primarily in the Moldavian counties, next in Hunedoara and Vâlcea which, having received state subventions, had been spared difficult problems.

Between 1993 and 1996, the industrial decline was stopped and the privatisation of big industrial units was slowed down, the government's intention being to proceed to their modernisation and afterwards to privatisation.

After 1997, the new government's policy was to enhance privatisation and close down the greater debtor units. Subventions to the mining sector were cut each employee, who agreed to leave his workplace was to receive 15–20 wages per branch average was helped to find another job, or even start a business; numerous miners were laid off, the activity was reduced fact that had negative consequences for the agents engaged in connexion economic sectors, e.g. supplying materials, equipments and services, discharging commercial and other activities.

The wave of redundancies affected not only traditional economic sectors like mining and the steel industry, but also the chemical, machine-building and textile sectors. The export-related trading companies experienced the most dramatic situation owing to the depreciation of the national currency – the leu as against the USD and the Euro.

In 2002, unemployment highs hit also the industrial towns (Figure 5), with only a few of them scoring below the urban record of 12.8% (Brașov – 2.5%, Pitești – 3.3%, Jibou – 5.0%, Sebeș – 5.0% and Galați – 5.6%), maximum values (21.6%) at Plopeni, as against the all-county average of 13.6%. The highest values (over 20%) had the Jiu Valley coal basin (which had not benefited from state subventions), the towns specialised in the steel industry (Năvodari and Victoria) and in machine-building (Plopeni, Cugir, Săcele and Bumbești-Jiu).



Figure 5. Unemployment rate in industrial towns with industrial parks on their territory, 2005

CASE STUDIES

HUNEDOARA INDUSTRIAL PARK

The title was granted to ‘Parc Industrial – SRL Hunedoara Trading Company’ by Order of the Minister of Development and Prognosis No. 90/2003 published in the Official Monitor No. 227 of April 4, 2003. The main shareholders are Hunedoara Local Council (90%) and Siderurgistul Hunedoara Trade-Union (10%). The Park is situated in the north of the town, in its industrial zone respectively, on the lefthandside of the national highway DN 68B Deva-Hunedoara, at 6 km from the European highway E7 and at 120 km from the nearest airport (in the city of Sibiu) (Photo 1).

The Park (19.3 ha) is situated in the proximity of the former Siderurgica Company, presently Mittal Steel (Photo 2). According to the Ministry of Development and Prognosis, the investment was estimated at 454 billion lei. The Park was aimed at attracting private investors and implicitly at increasing the number of trading companies in order to attenuate the negative effects of the slowdown of Hunedoara’s steel industry.

The authors of that project counted on the creation of 2,000 jobs. The companies interested in building or hiring production sites within the park are active in constructions, electronic equipments, metal works, subsets, pipes, furniture and dyes.



Photo 1. Hunedoara Industrial Park



Photo 2. Mittal Steel Hunedoara S.A. Trading Company

In the beginning, an Italian firm producing parts for mobile phones, took four hectares and created 50 workplaces. The local authorities pledged to provide the necessary terrain utilities, which they did by the end of 2003.

There are other investors, too, who wish to buy land and start a business within the Park (metal constructions and termopan joinery firms).

At present the Park has 14 parcels fully equipped (100%) with electric energy, methane gas, drinking water, sewerage system, access routes, railway and telephone network.

Industrial Parks are set up also in towns formerly dominated by the armament industry. In this way, each factory’s estate that had belonged to the Romarm system boasts an industrial park. However, only some of them appear to be the right solution (Zărnești, Cugir, Bumbești-Jiu and Plopeni).

ZĂRNEȘTI INDUSTRIAL PARK

The Industrial Park (Photo 3) was set up by Order of the Ministry of Administration and the Interior No. 129/2004. The managing SC Brem Company SA has two shareholders, one of them (a group of Italian investors, physical and juristic persons) holds 80% of the social capital of 375,000 Euro. The other is Romarm trading Company, which has 20% from the social capital of 75,000 Euro, representing the value of the 20 hectares belonging to the Tohan Zărnești armament plant on whose territory the Park is located.

The Park is situated at the foot of the Carpathian Mountains, in the neighbourhood of 'Piatra Craiului' Natural Park.

Zărnești Industrial Park was developed in cooperation with UNIONAPI from Emilia Romagna Region – Italy. Zărnești Town-Hall, Brașov County authorities, Romania's Government and various ministries were involved in this project.

One of the aims was to recoup partially some structures, which had pertained to a military area, but had not been used in production (Photo 4).

In 2005, less than one year after being granted Industrial Park title, the site was occupied by 28 companies from the EU countries (23 were Italian investors, 2 Italian-Romanian joint-ventures, and 3 Romanian investors). Zărnești Town-Hall exempted them from the payment of taxes on constructions scheduled to be made within the Park.

The collaboration between the Park authorities and the vocational high-school will be crucial in training the students in the domains the firms involved are specialised in.

Future projects have in view the development of a recreation, commercial and productive zone in a green area adjoining a watercourse.



Photo 3. Zărnești Industrial Park



Photo 4. ELCA-ROM production space

(www.parcuindustrialzarnesti.ro)

The local authorities consider that some 4,000 jobs could be created in such branches as plastics, knitwear, apparatus for the electronic industry and filming items. Furnishing utilities for Tohan Plant Industrial Park does not enjoy the support of Brașov County Council.

So far now, the investors who have shown the greatest interest for Romanian industrial parks are the Japanese (car subsets factory), the French (glass industry), the Austrians (who wish to build a bricks manufacturing complex in Dâmbovița County), the Germans and the Americans.

The main aims of setting up industrial parks in Romania are: to restructure the activity of some big industrial units; to create more jobs; to reduce unemployment; to attract industries

from the town centre to the periphery; to develop activities employing highly skilled labour; to use existing spaces and avoid the degradation of others; establishing industrial parks had in view the use of the material resources of former mammoth industrial estates, or of units belonging to the defense/military industry (infrastructure, workshops, utilities) state property at the time; to put to account huge estates with a poor infrastructure, of no interest to private investors; to improve the business milieu in Romania; to develop and modernise the physical infrastructure; to stimulate Romanian and foreign investments of capital; to increase the capacity of meeting the home market demand, stimulate exports and reduce the import of industrial items; to produce competitive commodities and services for the domestic and foreign markets; to discharge activities in line with regional development targets.

As a result, existing production spaces were not degraded, investments came in and new jobs were created.

However, industrial parks are not a salvage solution for all declining economic areas forcibly industrialised in the past, because whatever budgetary funds are earmarked, it is crucial that these parks become attractive to investors.

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STICKY PLACES IN THE GLOBALISED ECONOMY: THE ROLE OF LOCALITIES IN ATTRACTING THE SOFTWARE INDUSTRY

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Abstract. The emergence of the software industry in Central and Eastern Europe (CEE) and the uneven spatial distribution of the software industry in Poland needs an in-depth explanation. Five main factors have been identified behind the emergence of foreign software companies in CEE: cost-related reasons, accessibility to highly skilled graduates, the return migration of ex-pats, the cultural milieu of some cities and proximity to customers. Due to the bounded rationality of the founders, the main factor behind localised growth in Poland is the relation of the founders with their previous place of residence, study and work.

Key words: software industry, software development centres, sticky place, location factors, localised growth, Central and Eastern Europe (CEE)

INTRODUCTION

The emergence of the software industry in Central and Eastern Europe (CEE) leads one too question the reasons and consequences behind these decisions. In recent years, Poland has observed a rapid and gradual growth of the IT sector, which may be shown by a 40% increase of the number of IT companies in 2000–2004 and a two-fold growth in the number of employees between 1995 and 2003. Globalisation zealots argue that we are moving towards a unified world, where geographical differentiation is being hampered. Can companies in new industries be located anywhere? Is the software industry completely footloose? Firstly, it has been argued in this paper that local milieu determines the geographical concentration of the software industry. This paper contributes to a growing body of research within the economic geography, which not only explains why some locations are more competitive or dynamic than others, but also why these dynamic effects tend to be sticky, rather than transferable, across geographical distances. In order to achieve this goal, I aim to explore both the reasons and consequences behind the localised emergence of the software industry. Understanding location factors on a local scale requires deep insight into the reasons behind the emergence of companies in particular countries. Therefore, we also aim to investigate the reasons behind

the relocation of software development in Central and Eastern Europe (CEE). Relocation is understood hereby *sensu largo* as both the subcontracting out of some activities and foreign direct investment in CEE.

It has been widely analysed that the software industry is very sensitive to spatial conditions (Falk and Abler 1980; Gorman 2001). Therefore, an uneven spatial pattern is expected to occur for this economic activity. In 2002 the Polish IT sector could have been found within the top five to six¹ most concentrated industries in Poland, overtaking e.g. the automotive industry² and IT-related activities (NACE 32 and 33 – manufacture of radio, television, communication equipment and medical, precision and optical instruments). Among the small number of industries, only natural resource-oriented industries (mining and the tobacco industry) are more clustered than the IT sector on a regional scale.

A majority of the software industry is located in capital metropolitan regions. Such areas take advantage of employment benefits and the new corporate culture being introduced. Many peripheral areas stagnate because of the lack of skilled labour. However, some areas perceived as peripheral have recently experienced a growth in the software industry (e.g. Northern Ireland – Crone 2003) in terms of employment and multiplier effects.

DEFINITIONS AND METHODS

A fairly broad definition of the software industry is used in this paper. I follow O’Gorman’s (1997, p. 2) and Crone’s (2003, p. 39) understanding of the software industry, which includes companies undertaking the following activities:

- Development of software products/systems for subsequent sale to end users
- Development of systems software or software development tools for sale to vendors
- Services directly related to the design and/or development of software systems
- Localisation of either an organisation’s products or third-party products
- Development of programmes or systems for subsequent incorporation into hardware
- Technical training in the area of systems analysis, design and programming
- Provision of ‘hot-site’/disaster recovery facilities

This definition does not include: indigenous companies based in overseas offices, software development by in-house IT departments and sales of hardware or third-party software packages. Generally, this means that a majority of companies attributed to the software industry are classified under NACE 72. This NACE division is often perceived as a good set of firms providing computer services.

The results presented in this paper are based on interviews carried out under the PhD project, supported by the Polish Ministry of Science and Higher Education, (4471/P04/2005/28) and the MOVE project (Moving Frontier: The Changing Geography of Production in Labour Intensive Industries in Europe) financed within the EU’s Sixth Framework Programme. The latter research included 190 in-depth interviews in companies involved in any type of

¹ The position depends on the index that is calculated (Gini or Herfindhal-Hirshmann) and variables used (population or area).

² This is no longer true, because the automotive industry has been strongly clustering in a few Polish regions (Dolnośląskie and Śląskie) in the past 2–3 years (Domański et al. 2005).

internationalisation: foreign enterprises, firms involved in subcontracting to/from foreign entities, indigenous companies having subsidiaries abroad. The interviews were carried out in five, both host and home, countries: the United Kingdom, Greece, Poland, Estonia and Bulgaria. Additional information (especially about the consequences of software industry growth) was provided during 27 interviews with key informants. The first project consisted of 102 interviews with entrepreneurs, scientists and public authorities in four selected localities in southern Poland (mainly in Kraków, but also in the Katowice conurbation, Bielsko-Biała and Mielec). Location factors were studied in both projects (on a local and global scale).

This paper consists of seven sections. The first section ponders the main concepts that usually explain the geographical concentration of new industries in highly developed economies. In the next two sections, factors behind and consequences of the geographical concentration of the software industry are presented on a global and local scale. The next two sections provide an analysis of the identified mechanisms behind the spatial agglomeration of foreign and indigenous companies in Poland and some Polish cities. The sixth section covers the consequences of localised growth, while the results are discussed in the final section. I have also studied four important dimensions of the software industry: geographical scale (local/global) ownership (dichotomy between indigenous and foreign companies) the stickiness of localities (ability to keep/attract) the causation mechanisms (reasons/consequences).

THEORETICAL BACKGROUND

The number of explanatory approaches, which tend to analyse the reasons behind the localised growth of companies in new industries is surprisingly large. Starting from agglomeration economies to the recent concepts of sticky places and windows of locational opportunity, one can ask whether it is possible to apply one concept for different regions. For instance, studies by Pinch and Henry (1999) and Keeble and Nachum (2002) have shown that a pure, cost-based agglomeration economy approach has limited utility in accounting for the clustering of certain knowledge-intensive industries. Knowledge dissemination results in a collective learning process (Keeble and Nachum 2002) and may influence entrepreneurial activities. Krugman (1991) argues that knowledge spillovers are limited to a few high-technology agglomerations and seem to be national or international, rather than regional or local, in scope (Pinch and Henry, 1999). Some authors have noted that when it comes to explaining the clustering of knowledge intensive services, spillovers of knowledge are, contrary to Krugman's assertions, likely to be particularly important (Swann and Prevezzer 1996; Malmberg and Maskell 2002).

Some objections may be put forward in the case of other concepts. The path dependence concept seems to work for an established geographical cluster and can not be simply used for an industry which is in an infant stage of development. In nascent industries, there are still so many turning points (the entrance of major foreign players into different cities) which largely change the positions of particular localities.

The infant stage of cluster development constitutes an obstacle for using other paradigms. The 'window of locational opportunity' model combines the possibility of chance events at the start of the industry with the following agglomeration economies leading to further concentration in one or a few dynamic regions (Scott and Storper 1987). In the initial phase of the new

industry, chance events and the creative ability of new firms make it so that the industry might locate to all types of regions. Therefore, there may be a multiplicity of potential spatial outcomes (Arthur 1994). This phase is followed by the closing of the windows of locational opportunity around dynamic regions due to agglomeration economies. In Poland we are currently experiencing the beginning of the phase of closing the windows of locational opportunity for the software industry. It is too early to use this concept to explain localised growth in many new Polish industries.

The catch phrase 'sticky place' has recently become popular in industrial geography. Markusen (1996) cited by Dicken (2003, p. 22) asks 'why do geographical concentrations of economic activity not only still exist but are also the normal state of affairs? Why do 'sticky places' continue to exist in 'slippery space'? The concept of a sticky place refers to the 'geographic consequences of inertial forces which prevent hyper-mobility (in an increasingly "slippery production space") from completely obliterating production assemblies in space' (Markusen 1999, p. 98). Stickiness connotes both the ability to attract as well as to keep industries and people in both new and established regions (Markusen 1996). This means that two important dimensions of stickiness may be evaluated: the ability to attract and the ability to keep an industry within a given locality. This has led me to study both the reasons (illustrating the ability to attract), and consequences (indirectly mirroring the ability to keep) behind the emergence of the software industry. Thus, another important question arises: can consequences reinforce existing geographical concentrations and enhance their stickiness? May mechanisms of Myrdal's cumulative causation be used to elucidate the circular growth of the software industry in a given region or country?

The stickiness of a region implies a sustained interregional specialisation of economic activity (Zander 2004). This concept presents somewhat of a paradox in the light of improved communications and the globalisation of markets and industries, and it consequently brings about ominous slogans concerning the 'end of distance' (Cairncross 1997) and the death of 'the tyranny of geography' (Gillespie and Robins 1989). Operating across geographical distances is associated with certain cost and response time disadvantages (Porter 1990; Sölvell et al. 1991). Interaction with geographically distant suppliers and customers increases the costs of knowledge exchange and creates problems in maintaining the necessary level of communication in innovation and problem-solving activities (Malmberg et al. 1996). Some have argued that individual activities can not be separated from their information-processing context without losing some of their value (Malmberg et al. 1996; Maskell and Malmberg 1999). The relevant flow of information and tacit knowledge may be denied to outsiders or newcomers.

FACTORS BEHIND: THE GLOBAL PERSPECTIVE

Gentle and Howells (1994) recognise five specific structural factors causing the traditional national orientation of IT markets to be eroded, thereby increasing the potential for internationalisation. Lifted restrictions on the activities of foreign firms, declining language barriers, national computing standards superseded by international standards with the move towards highly compatible systems are among the most important factors behind the internationalisation of the software industry.

Location factors from the national perspective are as follows: A favourable tax regime was one of the main factors in the 1980s. Nowadays, the low cost of labour inputs and the availability of skilled staff³ are among the most often listed reasons. Other factors include: low set-up costs, infrastructural investments (often made by the public sector) significant, prior investments in educational services. A strong external effect associated with a large outward shift in demand for education, resulting in the entry of private educational providers, may also enhance the range and scope of IT skills. Organisational changes and internal restructuring may lead to outsource IT-related non-core activities (Coe 1997). However, the software industry is a clear example of an industry where the flow of ideas have been as important as the flow of physical capital (Commander 2004; Crone 2003). Therefore, Krugman's (1991) role of contingent, chance events may be significant in attracting foreign investment.

Many papers support the view that the most important motive for foreign direct investment offshore outsourcing is lower labour costs (e.g. Ali-Yrkkö and Jain 2005; Girma and Görg 2002; Carmel and Agawar 2000). However, additional costs, such as management and communication costs, make the cost difference clearly smaller than the wage difference. In the case of turnkey assignments (those involving all stages from analysis to installation) cost is less important, while management skills, quality, proven expertise and access to technology all become much more important (Heeks 1998). Relative to US costs, typical cost savings from offshoring fall between 20% and 40% depending on the type of work (Trends 2004). Labour cost and benefits in software development account for between 51% (Canada) and 80% (Japan) of total costs (Competitive 2004).

FACTORS BEHIND AND CONSEQUENCES OF LOCALISED GROWTH: LOCAL PERSPECTIVE

Location factors of European ICT companies on a local scale were studied within various projects, focusing mainly on the Netherlands (Koerhuis and Cnossen 1982; Drenth 1990; Atzema 2001; Verlinde and van Oort 2002; Weterings 2003) Denmark, (Illeris and Jakobsen 1991) and the UK (Coe 1998). In socialist Poland, pioneering research into spatial concentrations of the 'industry of information means' (hardware manufacturing and low-level computer services) was conducted by Werner (1985). He distinguished three groups of location factors: accessibility to labour force, linkages with markets and agglomeration economies. By analysing the location factors of high tech companies in Poland, Gurbala (2005) has recently found that a majority of small Polish companies were set up in the locality of the birth place or the place of residence of the founder. Medium sized firms were co-located due to 'access to skilled human capital', whereas agglomeration economies turned out to be the most important factor for large companies.

The most often cited location factor is easy access to the workplace by private transport and ICT infrastructure and services. Localised labour markets are one of the prerequisites of the geographical concentration of IT companies on various spatial scales (Illeris and Jakobsen

³ The abundance of academics leads to the emergence of software spin-offs from universities: this phenomenon was widely analysed by many authors (Ó Riain 1997; Crone 2003; Klofsten et al. 2000; Jacob et al. 2002; Autio et al. 2004; Micek 2006b).

1991; O’Gorman et al. 1997; Wojan 1997; Sivitanidou 1999; Crone 2002). Labour cost plays an important role whilst choosing distant locations, which is in favour of non-capital regions. Some authors argue that companies which depend on skilled labour accessibility choose locations that may be attractive for future employees (Lambooy et al. 2000; van Oort et al. 2005). The high attractiveness of a working environment with modern residential and recreational amenities are additional features a company may offer to its potential employees (Koerhuis and Cnossen 1982; Verlinde and van Oort 2002; Haug 1991). The historical background of an entrepreneur may significantly influence location decisions (Haug 1991). Coe (1998) found that, depending on the selected county, from 58% to 76% of firms were set up in areas where the firms’ original founder had previously resided locally. Bounded rationality is important since entrepreneurs can not gather all the information necessary to evaluate all possible locations: they will choose a location they already have a relatively large amount of information about. This is usually their home region or the location where they used to work (Weterings 2003). A strong demand from governmental institutions has laid the foundations for the spatial clustering of IT companies in Silicon Valley, New Brunswick and Ireland (Saxenian 1994; Crone 2003; Davis and Schafer 2003). It must be stressed that the multi-factor dimension of location choice in the software industry seems to be obvious. The synergy of several factors, such as co-existence of good universities, talented staff and a high standard of life, to list only a few, makes clustering easier (Nås et al. 2003).

The consequences of software industry growth for the local milieu has not been widely discussed, and the number of scientific papers on this issue is fairly limited. The development of IT companies seems to be detrimental to local economies for several reasons listed by Coe (1998). The most obvious reason is that the growth of the industry brings direct and indirect employment effects. Secondly, by exporting, it can contribute to the economic base of the locality or region, enhancing its exogenous base. Thirdly, “brain circulation” may generate the presence of network effects (Saxenian 1994) confirming the significance of temporary mobility. By the movements of key individuals, new foreign companies may emerge in a host country (Crone 2003). Accompanied by the entry of foreign companies, this may lead to a software cluster emerging (Crone 2003; Larosse et al. 2001). Fourthly, the presence of a local supply of computer services is essential for enhancing the competitiveness of local small and medium-sized companies. It may be also argued that when a high level of competition and sophisticated clients exist, higher quality services are provided. Additionally, software companies are crucial for developing the name of the city.

IDENTIFIED MECHANISMS BEHIND THE EMERGENCE OF FOREIGN COMPANIES ON A GLOBAL AND LOCAL SCALE

Guzik and Micek (forthcoming) studied the reasons behind the emergence of foreign software companies in post-socialist countries. Based on interviews, the scholars argued that foreign companies invest in CEE largely due to the local pool of expertise. Foreign companies treat low labour and operational costs as the fourth most important factor (after expertise, reliability and appropriate technology). Guzik and Micek (forthcoming) argued that foreign companies have a lower number of subcontracting partners than indigenous firms and statistically more

often depend on one partner (usually their parent company).

Three distinctive types of foreign software development centres in terms of size, exports level and strategy were identified in the research. The first type (23% of interviewed firms) consists of small and medium enterprises, which base their competitive advantage on lower wages. The largest, in terms of share (47%) group of enterprises offer specialised solutions and seize the opportunity to make use of highly skilled labour. The third type of centre (35% of firms) is opened by global players, which offer salaries higher than average in the region. Their position in the value chain is significantly being improved: they gradually undertake more sophisticated tasks. After a few years of operation, several centres have opened system design, marketing and sales departments. The typology of software development centres shows that cost-related reasons behind foreign investments are slightly less important than the race for highly qualified professionals and, to some extent, the search for new markets for software products.

Five main factors were identified behind the emergence of foreign software development on a local scale in Poland: cost-related reasons, availability of highly skilled graduates, the return migration of ex-pats, the cultural milieu of some cities and proximity to customers. Labour costs differ between various Polish cities. There is a substantial gap in the salary level between Warsaw and other cities. The difference in salaries in the IT sector between the capital and other cities varied between 22% (for Kraków) and 115% (for Łódź) in 2004 (Dubis 2005). The role of highly qualified potential employees is a crucial factor. For instance, this is the reason listed by all interviewed managers of foreign companies operating in Kraków. What was clearly stated during the interviews was that qualified staff makes companies more embedded in the given city and enhances its stickiness, both in terms of the ability to keep and the ability to attract new investors.

A significant part of foreign greenfield investments has been influenced by the Polish origin of foreign founders or managers. At least one third of foreign companies operating in Kraków has been established by entrepreneurs who had previously lived or studied in Poland. Emotional decisions to come back to a country of origin, childhood or studies had laid solid foundations for the localised growth of the software industry in Kraków. This was observed the mechanism of bounded rationality: well-known cities were chosen instead of lesser-known places. According to key informants, the role of ex-pats in foreign investment in CEE will grow over the next few years.

The cultural attractiveness of the city is, besides the availability of appropriate staff, the second most important factor behind choosing Kraków among foreign software companies. *Genius loci* ('the spirit of a place') has been listed by four out of five managers of large foreign greenfield companies operating in Kraków. The relation between cultural and IT industries in the city was studied by Micek (forthcoming). This is not only a one-way impact occurring (the influence of cultural attractiveness on attracting new companies). Some managers of IT companies run restaurants and pubs, others are involved in musical performances. The vivid cultural life and world-wide distinguished heritage makes customers of foreign software more prone to come to Kraków. The stickiness of the old town of Kraków doesn't relate only to attracting or keeping new foreign companies, but also to entice their customers, especially call centres, which invest in the city to a large extent.

Demand-side is also important for software companies located near to customer sites,

especially in Warsaw. Proximity to customers has not been reported as being so important in the case of locating firms in Kraków, where customers followed their foreign software suppliers. Public support has played a very limited role in foreign direct investment in the IT sector. There was only one company located in the Special Economic Zone which treated public incentive as moderately important in its location decision.

THE ROLE OF LOCALITIES IN THE GROWTH OF INDIGENOUS COMPANIES

The reason behind the localised growth of software industry was analysed in the case of Poland. The role of highly qualified potential employees appeared to be the crucial factor, although it was underestimated by founders of small and medium companies in their location decisions. The provision of highly skilled professionals was taken for granted as for location decisions. However, managers argued that the availability of highly educated professionals largely contribute to general growth of software industry in the city.

For Polish firms the cultural milieu was also significantly important in terms of attracting new employees. Polish-owned companies set up in another Polish cities decided to open a subsidiary in Krakow not only due to accessibility to human capital, but also because of cultural attractiveness.

The most important factor behind spatial patterns of software industry in Poland is the relation of founders with the location of its future company. Over two-thirds interviewed companies were established in a place where managers had been living, studying or less often working. It was so obvious for founders to establish companies in a place they know well, were born there, have friends or relatives.

LOCAL CONSEQUENCES OF GLOBAL RELOCATIONS

There are more local consequences of software industry growth to be added to those identified by Coe (1998). The exodus of software developers from small and medium indigenous enterprises to transnational companies may be found among the negative processes. Over 90% of interviewed indigenous companies complain about the scarcity of workforce. The most common complaints included a lack of staff with both computer and sales skills and appropriately trained specialists. The second issue is 'brain drainage' to foreign companies and its direct results.

The level of local embeddedness of software companies still seems to be relatively low. Except for a few cases, foreign enterprises are supplied by a very limited number of local basic services. Some foreign software development firms do not seem to be establishing links with indigenous firms and, consequently, do little to stimulate indigenous growth. A majority of large foreign firms are part of international value chains with limited local clustering: this was also shown in the case of Flanders by Larosse et al. (2001). Most large IT companies have to align their alliance strategies with headquarters abroad, thus limiting the scope of local cluster development.

Positive consequences of software industry emergence are dominant: a new social, well-paid, highly skilled, white-collar class is rising. This may bring up the question about the distinction between the reasons and consequences of localised growth. Managers argue that

the emergence of highly skilled professionals is both the consequence of entrances of pioneering external companies and the reason behind the location decisions of some new investment. Therefore, it may be put forward that the mechanism of cumulative causation has occurred in this case. However, not a single company has invested in Kraków following Motorola's decision (the largest foreign software company in the city): a 'follower effect' has not been observed.

The emergence of new companies has led to higher local provision of advanced consumer services and increased availability of luxury apartments in many Polish cities. Software companies have improved the image of the region or city. The city is then presented as the core of modern economy with services supplied by highly skilled and experienced specialists.

The growth of the industry brings direct and indirect employment effects (multiplier effects). Based on interviews, the multiplier effects of the functioning of software development centres were estimated. The average 100-employee foreign software development centre (located in a non-capital city) indirectly hires from external companies about: 4–6 security people; 3–4 cleaning staff, one translator, 34 local companies supplying office equipment, catering and repair services, computer networking – in total up to 8 employees working indirectly for the foreign software company. A vast majority (if not all) of software solutions and, to a lesser extent, equipment used in the company are provided by their foreign headquarters. Taking minimal measures, employment effects may be estimated at about 15 people.

The presence of a local supply of computer services may enhance the competitiveness of some local small and medium-sized companies. Large and medium Polish software houses (especially those developing ERP solutions) are dominant in their regions in terms of the number of customers (Micek 2006a). However, the number of companies which supply foreign firms is fairly limited to exceptional cases.

REASONS BEHIND THE LOCALISED GROWTH EMERGENCE OF THE SOFTWARE INDUSTRY

It may be argued that for attracting companies to Central and Eastern Europe, labour cost is only one of several factors behind relocation. On a global scale, the crucial element of the regional success of the software industry is the accessibility of highly skilled individuals.

In Poland, for foreign companies, 'the ability to keep' side of stickiness consists of two elements: availability (in the meaning of both accessibility and quality) of highly educated professionals and the cultural attractiveness of the city. It is the local milieu, which determines the geographical concentration of software companies in a limited number of cities. Due to bounded rationality, managers choose well-known locations. Surprisingly, the managers of foreign firms often have Polish origins, representing the return migration of so called 'ex-pats'.

For a few foreign companies, the level of labour costs was also important in their location decisions made in favour of non-capital cities. Nice, green environment with modern facilities was not of that importance, as it is usually argued to be in Western literature. For some foreign companies, the attractive environment was taken for granted. Software companies located in Warszawa and, to a lesser extent, in Katowice listed proximity to customers as the second-tier factor. A very limited role of public initiatives was observed.

The majority of indigenous companies listed ties with the locality as the previous place of

studying, living or working. These were usually university cities, which provide an attractive and innovative milieu for setting up businesses and make it easier to find employees. A circular cumulative mechanism has been observed. The development of the skills of local professionals and improved image of some Polish cities as the consequences of the emergence of the software industry has become reasons behind localised growth.

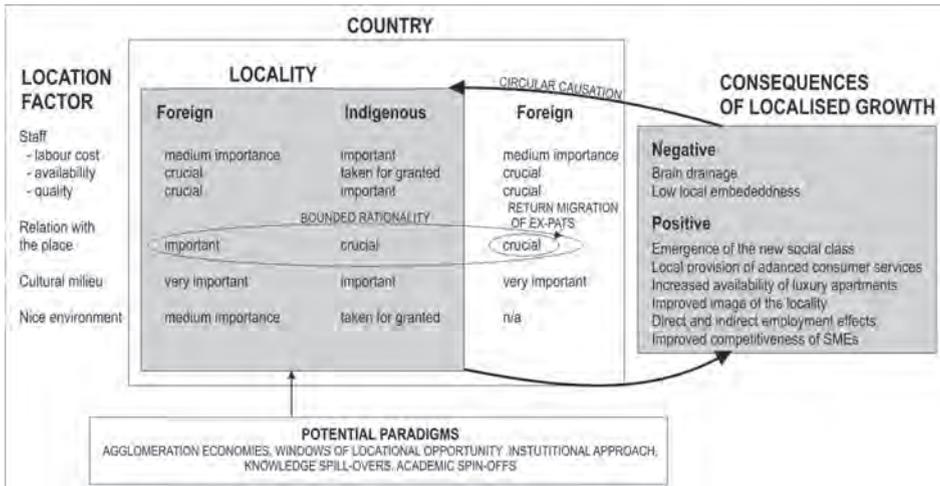


Figure 1. The localised growth of the software industry in a global perspective: reasons and consequences

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PRO-INVESTMENT ACTIVITIES OF LOCAL GOVERNMENTS AND LOCATION DECISIONS OF ENTREPRENEURS

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Abstract. This study set out to analyse relations between local government activities, and arrival of new investors. The links between various pro-investment decisions and activities were investigated, as well as relations between the spatial pattern of green-field foreign direct investments and investment climate. A comparative analysis of pro-investment activities of fourteen gmina in Poland was performed. Teritorial marketing theory, localisation theory and the concept of urban regime was the significant background of the original research.

To conclude, pro-investment activities of local governments are indispensable part of localisation decision of medium-sized and big enterprises. Thus, those local governments who do not undertake any pro-investment activities are destined to have fewer new investors. However, in the case of the metropolises, the role of local governments become less significant, as some investors choose these places, even without local support.

Key words: new businesses, local governments, pro-investment activities, promotion, capital investment proposals

INTRODUCTION

The goal of this study is to present the significance of the influence of the activities conducted by local governments on the location decisions made by the entrepreneurs who look for the places for their capital projects.

My conclusions presented below result from the surveys conducted in fourteen municipalities of three Polish Regions: Dolnośląskie (Wrocław city and county, Koberzyce, Święta Katarzyna, Kąty Wrocławskie and Żórawina), Małopolskie (Kraków city and county, Tarnów city and county, Niepołomice, Skawina, Dobczyce, Myślenice, Kęty and Olkusz) and Podkarpackie (Mielec).

Our survey also included the municipalities that are characterised by a potentially high investment attractiveness, hardly dependent on the local government's activities: good transportation accessibility, large real-estate resources that are potentially suitable for the investment

and good availability of qualified labour. Consequently, we excluded the municipalities where even very intense operations conducted by the authorities would not create opportunities for attracting many new businesses. In the pool subjected to our survey, two metropolitan areas were included, Kraków and Wrocław, together with twelve small and medium-sized towns and rural municipalities. The selected municipalities were not supposed to be representative for their regions, but rather indicated the processes, which occurred in the municipalities that were attractive for the investors.

As a part of our research, we conducted 34 interviews with the municipal officers, 37 with the representatives of the new businesses operating in the respective municipalities and 43 with the representatives of the agencies that participate in the various stages of site selection by the businesses, mainly foreign ones.

SIGNIFICANCE OF PRO-INVESTMENT ACTIVITIES

Local governments' pro-investment activities, especially in small and medium-sized municipalities, are indispensable factors that are helpful for the attraction of new small and medium-sized businesses. That condition is necessary since the investors will not be interested in a given municipality even if they cross the area on the way to an objectively less attractive location. Without activity on the part of the local government, the municipality has little chance for the potential investor to even commence an analysis of his essential location factors.

The significance of the local government's activities is larger than it may result from a simple analysis of its competence or capabilities. The investors who are looking for a business site do not have a large choice among too many attractive locations. Based on the analysis of the operations on the part of the Małopolskie Region municipalities, we can estimate that the competition between specific locations, so often described in the literature (e.g. Klasik 1999; Komorowski 2000; Rainisto 2003), is not a common phenomenon in Poland yet, and it concerns only some pro-investment municipalities. In the Małopolskie Region, not more than 30 or 40 municipalities out of 182 (15–20%) conduct some pro-investment activities, while extensive activities are displayed by less than 20 municipalities (10%), (Jarczewski 2007). The situation is similar in other Polish regions, and the entrepreneurs must choose only those municipalities whose governments have displayed adequate pro-investment activities.

Those municipalities, in particular small and medium-sized ones, whose authorities do not conduct any pro-investment operations are largely closed to the influx of new businesses, and they were mostly excluded from a long list of the most often considered locations, even if they objectively ensure good conditions for specific business activities. An excellent example of the unused opportunities is Żórawina near Wrocław. That rural community is located close to the A4 Motorway, neighbouring Kobierzyce on the west and Święta Katarzyna on the east. No medium-sized or large business arrived at Żórawina between 1990 and end of 2005. The only identified aspect which essentially made that community different from the surrounding municipalities, which attract many new companies, Kobierzyce and Święta Katarzyna, as well as the nearby Kały Wrocławskie, was the attitude of the local government towards the pro-investment activities.

If the municipalities which theoretically display a very great attractiveness, without active local government's operations, attract many new businesses, and for the less attractive municipi-

palities equally without a considerable local government activity the arrival of serious investors is hardly probable. The sources of failure of the municipal policy are both structural conditions and lack of proper policy (Elkin 1987).

On the metropolitan areas, the significance of the search for new investors on the part of the local governments is less important: the investors arrive there even without a local support. A large number of strong businesses, which can attain their business goals, independently or in alliances, is of key importance. Large cities are, in a way rare commodities, and they attract the investors regardless of the operations or attitudes on the part of the local governments. Some investors are determined to stay in a large city, and positive or negative actions do not affect their decisions considerably. Despite a much poorer pro-investment policy found in Kraków in comparison to Wrocław, we do not observe a considerable disproportion in the influx of the new investors to those cities. Therefore, it is necessary to agree with W. Dziemianowicz and B. Jałowiecki (2004) who stated that the large potential concentrated on the metropolitan areas becomes the main factor for location selection decisions. In the cases of both cities – Wrocław and Kraków – the arrival of the new businesses, e.g. in the broadly understood service sector, is somehow a natural and subsequent stage of development during the period of decreasing role of the industrial sector in the economy, which is possible owing to the existence of universities and availability of many well-qualified graduates, attractive municipal space, abundance of office space and other resources. Such valuable municipal benefits are the results of a long-term and cumulated growth (*Encyklopedia ...2004*).

The interrelationships presented here, may be also, explained on the grounds of the urban regime conception (Sagan 2000). In the metropolitan cities, the local coalitions (regimes) are strong enough to cumulate huge resources and stabilise the development direction, preventing too radical changes and correcting many consequences of local government's failures. In small municipalities, however, the local governments are important actors, often the most important ones, and their dynamic activities allow for starting new, even revolutionary coalitions, while lack of a coalition would make development impossible.

Diverse investment attractiveness and the roles of the local governments have been presented in this study at a general level concerning mainly production businesses, warehousing and those services which require qualified labour. The investors who are interested in the development of tourist facilities use somewhat different criteria, and low investment attractiveness may be an advantage to them, indicating that no other business will come to the area. The distribution of commercial centres corresponds mainly to the existing settlement network, and the most important location decision factors are the population size and income. The distribution of filling stations is, however related to the course of main transportation routes and the existence of important intersections, as well as the vicinity of residential areas. Nevertheless, the acquisition of that type of project is strongly related to the pro-investment attitude on the part of the local government.

ACTION BRINGS SUCCESS

The first stage of each policy is to determine objectives, or to answer the question what one wants to attain (Regulski 1984). T. Markowski (1999) underlined the key importance of the goal-setting stage in conducting an effective policy.

The most essential factor to be worked out in the local government, which may not be substituted or “imported”, is a pro-investment vision and the will to implement it by the local authorities. Articulation of the need to attract new businesses and the basic conception of “how to do it” are the basic forces, which will fuel further activities. Missing knowledge can be supplemented, and resources can be acquired either from aid funds, or by loans or from the municipal budget. However, the will to take action and the pro-investment vision must originate from the local-government representatives.

The condition which allows to conduct effective pro-investment activities and acquisition of new businesses is the voters’ support during at least two terms. The continuity of power is one of the essential local success factors in Poland. Eight years is the shortest period that allows for the formulation of a vision, its implementation, bid preparation, promotion and negotiations with a number of potential investors. Although the continuity of power in the municipality is not a guarantee of conducting pro-investment activities, lack of such continuity effectively prevents the development of activities on a large scale. Extended control of the local government by the same people may be a reason of burn-out in the pro-investment operations. In some cases, that process may also be associated with the involvement of the local officers in illegal or corruptive operations. The continuity of power is not equivalent to the continuity of pro-investment activities. In some municipalities, a new mayor becomes a catalyst accelerating the influx of new businesses and in others, just the opposite. It also happens that the new government continues and creatively develops the operations of their predecessors, even if they took power as a result of criticism of the previous municipal managers.

To attract new businesses, the local governments apply a whole system of various activities whose effectiveness largely depends on proper planning. Pro-investment planning included in the official programme documents of municipalities is designed at a fairly low level, in particular, in small and medium-sized municipalities. Officially approved pro-investment activity plans are missing not only in the municipalities where attracting new businesses is not an important goal, as well as in those ones which are leaders in the process. Most often, the pro-investment strategy contains several sentences expressing the expectation of new business arrival, without detailed specification of objectives. Exceptional are those municipalities, which have adopted detailed programmes of pro-investment activities and allocated adequate resources for their implementation. In small and medium-sized municipalities, the pro-investment strategy statements are strongly associated with the convictions of the persons who discharge the highest offices in the local government, often expressed by the mayor himself who invents, implements, and controls whole pro-investment policy.

Even metropolitan cities do not have official pro-investment activity plans. Conducting effective pro-investment activities in large cities, without a detailed plan, seems to be rather difficult. Small and medium-sized municipalities require only one strategic thinker for programming of effective pro-investment activities. However, a complete strategy is required in a large metropolitan city.

Pro-Investment municipalities may be included in the group of learning organizations in accordance with the definition proposed by P. Senge (2006). When implementing particular pro-investment activities, the local governments can learn from their mistakes and success stories, and they also display the ability to understand problems and challenges, with readiness to adapt themselves to ever changing conditions. There is a clear relationship between pro-

investment experience and the quality of regular operations.

The first municipality's offers are usually prepared with the involvement of the municipal land. With time, once simple reserves are exhausted, the governments use more expensive and complex tools of land acquisition, e.g. land purchase or replacement, creation of land-owner corporations, manipulation with physical plans to acquire real estates, even offering of private land to investors. As well, the scales of operation change with time. Niepołomice and Kobierzyce effectively acquired new businesses by offering large plots of land (about a dozen hectares each) in mid-1990's. However, only after ten years of experience, they prepared land for very large corporations (150–250 ha). What is more, each of those municipalities suffered failures when started with acquiring huge corporations, and only the second (in the case of Niepołomice: the MAN truck factory) or the third investor (in Kobierzyce: the LG and its suppliers) was satisfied of the constantly improved offer.

METHODS OF AFFECTING THE INVESTORS' BUSINESS LOCATION DECISIONS

The businesses, which are looking for a location for their activities use the principle of profit maximisation and risk minimisation (*Investment ...2004; World ...2004*). The purpose of the municipalities, which want to attract new businesses actively, is to create the conditions that will allow to as easily as possible start and conduct business activities. Professionalism, real will of solving the occurring problems and support in negotiations with the entities, which are independent of the local government allow to partially reduce the investment risk in the particular location.

Preparation of real estate, usually undeveloped land, with the provision of the physical plan, technical infrastructure and roads are the basic actions that will facilitate the arrival of new businesses in the municipalities. The investors are willing to select the real estates owned by the local government and land whose legal status is clear, checked and free of any doubts. Presently, many municipalities hold attractive real estates, that may be offered to the investors. The local governments use several methods to acquire plots, to be designed for capital projects: purchase, replacement, expropriation or acquisition for debts. More and more often, private land is also prepared for capital projects in co-operation with landowners. The local authorities try to assist private owners in clarification of the land's legal status, and exert pressure, especially financial one, persuading the owners to sell their real estates to the investors. A feature that characterises good investment proposals is the existence of a valid physical plan. What is also important is the provision of technical infrastructure, including access roads. Many municipalities offer to their investors real-estate tax exemptions. The effectiveness of such an encouragement is problematic, and loss of income may essentially slow the municipality's development, e.g. make the acquisition of aid funds difficult. Refusal to offer such tax relief is only chosen by the municipalities, which are very attractive in the investors' eyes and are sure of their standing.

Intermediate promotion conducted by various types of companies and agencies is more effective and cheaper than direct promotion. Indirect promotion is conducted by such agencies as the Polish Agency for Information and Foreign Investment, Regional Centres for Investor Services and other regional or local development agencies, economic and commercial departments

of the Polish embassies abroad and foreign embassies in Poland, specialised consulting companies, large real-estate agents, entrepreneur associations and Special Economic Zone management. Direct promotion is usually evaluated as less effective and expensive, with some exceptions (e.g. own websites). Some of the municipalities that have long-term experience in the acquisition of the investors limit or even resign of such forms of direct promotion as advertising, participation in investment fairs or organisation of investment acquisition missions. An expensive and difficult to conduct, but quite an effective promotion tool is direct marketing consisting in reaching potential investors with specific proposals.

In some of the municipalities, the arrival of the first large investor was a factor that accelerated the influx of other businesses. The opinions of the entrepreneurs who are already operating in the municipality are essential for other investors who contemplate location decisions. The municipalities want to be “discovered” by a prestigious company, which will bring to the place additional goodwill and a pro-investment image. The imprimatur clause on a manuscript was equivalent to the consent to print. It was issued by a censor after checking the work’s values and drawbacks. The opinion about the place and the virtual investatur, or go ahead with your project, issued by a credible entrepreneur, is important for the investing circles. It takes years for municipalities to attain such an investatur clause.

The components, which essentially support the local authorities in the acquisition of new businesses, turn out to be in the Polish conditions the Special Economic Zones (SEZ). That instrument was transformed after it was implemented in 1995, from a tool of supporting the regional development to a tool of supporting public aid for medium-sized and large investors. The investment areas belonging to one of the Polish fourteen zones are owned by as many as 158 municipalities (15 March 2006 figures). The numbers are quickly growing. The inclusion of the municipality’s investment areas in a SEZ depends strongly on the activity of the local government.

Preparation of an investment proposal, followed by its professional promotion, allows the municipality to be included on a long list of the locations considered by the investors. Which municipality will be selected, will depend to certain extent on the negotiation skills and investment services demonstrated during the location selection process. Professional services, positive attitudes, openness to co-operation and understanding of the investor’s needs are undoubtedly the factors, which support the location selection decisions. Our research results suggest that the significance of professional services in Poland is larger than we can infer from the business location factor surveys. Immediate delivery of the required documents, “fast track” along administrative procedures and flexibility in conducting negotiations are treated by the investors as normal conditions. When the investors are facing arrogance, lack of professionalism, delays, indiscretion or expectation of bribery, they would stop their discussions, and the municipality would not be considered in further steps. The problems related to improper attitudes on the part of local authorities may disqualify and prevent serious consideration of even most attractive proposals. In the situation when only several percent of the municipalities are actively seeking investors, the combination of a well prepared proposal with professional services is fairly rare. A friendly attitude of the local officials and efficient services offered during the investment process and after the start of the business operations are the best methods of building a positive image of a pro-investment municipality.

Even the best organised system of investor acquisition in the municipality brings more failures than successes. In our survey of the municipalities, including the leading municipalities, it

was found that at most one out of ten seriously negotiating investors actually starts its business in the municipality. That rate is considered a success. It is hard to indicate which activities are more or less important. When trying to serve their investors, the local authorities must implement a whole range of diverse systemic operations.

Proper real estates, especially plots of land, are the components without which it is next to impossible to attract new businesses. But even when a municipality has good land and fails to promote, it may wait for an investor for a long time. The inclusion of land in a Special Economic Zone is an important factor of attracting entrepreneurs. We found a large group of successful municipalities, without such an option, among the surveyed pool. What is very important for the final success in the acquisition of new businesses is the negotiation process, and the arrival of subsequent companies is faster once a serious entrepreneur has created a positive image of the municipality. Such an image is not developed on the basis of single activities but rather after many diverse contacts and forms of co-operation. So, we cannot talk of more or less effective forms of pro-investment activities, but rather of better or worse pro-investment systems.

CONCLUSIONS

Our surveys clearly indicate that the success of the municipalities, especially of the small and medium-sized ones, in the attraction of the investors results from the implementation of pro-investment activities. In that context, the key role is played by the municipality leaders (the mayor in particular), whose role is to implement pro-investment activities. The business location factors are numerous and diverse. The activities adopted by the local authorities to increase their chances for new business attraction must also be numerous and multi-directional. Successful are those municipalities which conduct at the same time numerous, well-planned and coordinated activities consisting in the preparation of investment proposals, their promotion, skilful negotiations and investment process services, as well as the continuous pro-investment operations (after-care policy).

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