POLISH ACADEMY OF SCIENCES
STANISŁAW LESZCZYCKI
INSTITUTE OF GEOGRAPHY AND SPATIAL ORGANIZATION
CENTRE FOR EUROPEAN STUDIES
POLISH GEOGRAPHICAL SOCIETY

EUROPA XXI

15

REGIONAL PERIPHERY IN CENTRAL AND EASTERN EUROPE

EDITORS:
TOMASZ KOMORNICKI and KONRAD Ł. CZAPIEWSKI

WARSZAWA 2006

VOLUME REVIEWED BY:
Roman Kulikowski

VOLUME CO-FINANCED BY:
Ministry of Education and Science

EDITORIAL OFFICE:
Stanisław Leszczycki Institute of Geography
and Spatial Organization, PAS
00-818 Warszawa
ul. Twarda 51/55
tel. (48-22) 69 78 849
fax (48-22) 620 62 21

www.igipz.pan.pl/cbe
e-mail: t.komorn@twarda.pan.pl

PREPARED FOR PRINT BY:
Robert Maik

PRINTED IN:
Drukarnia Klimiuk, 00-372 Warszawa, ul. Foksal 11

ISSN 1429-7132

CONTENTS

EDITORIAL

SPATIAL STRUCTURE – SOME PROBLEMS OF THE CORE AND PERIPHERAL REGIONS IN CENTRAL AND EASTERN EUROPE

In the methodological way, space is very often recognized, as a geographical method of interpretation of facts and relations among them, or as the basic theory in geography. It is one of the main objectives of the geographical studies. Different forms of social and economical human activities and their conditions, which during the time of historical development shaped the specific structure, occur in the space. Socio-economical processes that took place in the space undoubtedly affected its polarization, which was, and still nowadays is, characterized with regions that are highly and poorly developed, rich and poor, core and peripheral.

Analyses of the cause-effect relationships between social and economical processes and spatial structure have been the research interest of geographers, as well as sociologists, economists and planners for many years. They inspired the researchers to formulate general theories referring to the spatial development of the regions such as Weber's least cost theory of industrial location, Christaller's theory of central places or Alexandersson's theory of economic base in the development of the settlement units.

The analysis of the influence of exogenous factors on the space structure as well as the recognition of the relationships among regional units is a special issue of the space research.

We hand out to the Readers the present volume of the *Europa XXI* series which is a collection of the articles that deal with above-mentioned problems in the context of functioning core-periphery model in Central and Eastern Europe and conditions that decide about their spatial diversity. Issues brought up in this book allude to the subject of the II Warsaw Regional Forum that was *The core and peripheral regions in Central and Eastern Europe*. This already cyclic scientific event takes place in Warsaw every second year and is organized by Institute of Geography and Spatial Organization of Polish Academy of Sciences and Academic Division of Polish Geographical Society.

The following book contains 20 articles that, as far as their subjects are concerned, can be divided into six unequal numerically parts. The first one that includes two papers (Vaishar and Rohring, Gailing) presents theoretical assumptions of research on core-peripheries schemes as well as the verification of basic definitions utilized in studies on the spatial structure of geographical environment and cultural landscape. Subsequent four articles show the results of researches on transport availability of peripheral areas in Central European countries. They present, among other things, recognition of regions characterized with marginalisation because of the quality of the transport in Slovakia

(Hornak and Michniak) or assessment of the transport availability of peripheral regions of Czech Republic (Marada, Chromý, Jančák, Havlíček and Marada, Hudeček).

The next four articles deal with the problems that are very important as far as one concerns the course of the socio-economical processes and phenomena in polarized space as well as the attempts of their measuring and defining. Among other things, the attention was paid to historical and present causes of the cross-border relations in the Slovak-Czech borderland (Halas), definitions and measures in the analysis of rural areas of success (Czapiewski), relationships within urban and rural municipalities in the context of living conditions (Szekely) as well as dependences between demographical and economical processes in Saxony (Więcław-Michniewska, Trzepacz).

The greatest number of papers substantially refers to the perception of the process of regions becoming peripheral. This group consists of six articles, in which authors present this problem in individual countries of Central and Eastern Europe: Lithuania (Daugirdas, Burneika), Poland (Szul), Czech Republic (Siwek and Jerabek), Romania (Dumitrescu, Damian) and Slovakia (Petrovic, Bezak). Despite regional differences resulting from the specific socio-economical conditions in individual countries, the way the authors percept the peripheral regions is very similar.

The following three articles allude to the demographical problems that are the results of the region's marginalisation. The spatial range covers the whole European Union (Długosz, Kurek) and two countries: Slovenia (Benkovič-Krašovec) and Bulgaria (Mladenov). The assessment of the demographical potential was done in the research carried out in some peripheral regions of Slovenia, whereas basic demographical problems were defined for the north-western planning region in Bulgaria. In the article that concludes the book, Biczkowski and Rudnicki depict on the example of Kujawsko-pomorskie voivodeship in Poland exogenous factors (structural funds) that affect functioning of the peripheral areas.

Wide range of issues related to the problems of the functioning of cores and peripheries in the space that is presented in this book shows constantly actual character of the studies on socio-economical processes that are also based on environmental features shaping the structure of the space.

Marek Degórski

EUROPA XXI
2006, 15: 7–12

REGIONAL PERIPHERY: WHAT DOES IT MEAN?

ANTONÍN VAISHAR

Institute of Geonics, Czech Academy of Sciences Ostrava, Branch Brno
Drobného 28, 602 00 Brno
vaishar@geonika.cz

Abstract: Periphery exists as a consequence of regional heterogeneity. It occurs at each regional level. In Czech conditions, it is the distance from Prague and the distance from the Bavarian border as well as differences between the urban northern part and the rural southern part of the country that are important for the delimitation of periphery. Border locations are often considered peripheral. There is also an inner periphery which is mainly conditioned by the relief. At a microregional level, periphery is indicated within the "town-hinterland" relation. Regional periphery does not mean only underdevelopment and the lack of opportunities, but usually also tranquillity, low environment pollution, etc. Periphery may also be considered attractive by certain social groups.

Key words: regions, periphery, Czechia

THE TERM OF PERIPHERY

Marginal means located on an edge. Some authors also use the term peripheral or regions of poor structure (Danielczyk 1998). The term of marginal (peripheral) region differs in social sciences (Cullen, Pretes 2000). In geography, it relates to the "core-periphery" concept. Knox and Marston (2001) classify regions into core, semiperipheral and peripheral. The core regions are dominated by trade, control of most advanced technologies and high labour productivity. The peripheral regions are characterized by dependent and disadvantageous business relations, more primitive technologies and closely specialized economy of lower productivity level. The issue of marginal regions can be found for ex-

ample also in Leimbgruber (1998) and in many other authors. Marginality in geography is most frequently studied within the issue of rural regions (see Forbes, Kaktins 2003).

Friedlein and Rudenko (2002) bring attention to the relativity of marginalities in post-Soviet and post-socialist countries as in their conditions *marginal* should not be considered entirely identical with *rural*. Peripheral areas in the Czech Republic were defined by Marada (2001) using a statistic analysis, and in Slovakia they were studied by Pašiak, Faltan, Gajdoš already in 1995. The problem of national search of regional disparities (e.g. Štika 2004) exhibits in Czech conditions a major shortcoming of not getting down below the level of districts. At this level a peripheral area naturally appears as little marginal (Hampl 2000). The microregional level of the phenomenon in Czechia was studied by Jančák (2001) and on example of a concrete territory by Věžník (1997).

HOW TO MEASURE PERIPHERALITY

The existence of periphery is a natural consequence of irregular development (Chromý, Janů 2003). Even in the equalizing socialist system it was impossible to achieve the same pace of development in all regions. In market economy, the uneven development of regions as well as the uneven growth of enterprises, industrial branches, professional groups and individuals represent a driving power and the main motivation element. Periphery occurs at any regional level and it can be referred to as a periphery with respect to world, continent, country, region and the like.

A simpler measurement of peripherality connects with the concept of distance. Distance is one of fundamental spatial concepts and appears as quantity in a range of geographical models, e.g. in the gravitation model. Distance can be comprehended as a geometrical quantity. However, the meaning of geometrical distance can be considerably modified in concrete conditions. It is therefore more useful to focus on the measurement of distance by means of expressing it in figures of time or costs required for its overcoming.

Overcoming of any distance on the Earth is today a matter of time and money. Development of this factor has been during the last 15 years in our conditions very markedly affected by the increasing number of passenger cars and intensity of their use. The cars enable a faster and independent overcoming of distances between seats, which becomes rather costly for the transportation of individuals. A consequence of this development is suburbanization and urban sprawl in the surroundings of cities and overcoming of microregionalization in lowlands that are easy to pass for traffic. The parameters of time and costs also conceal the boundaries of these processes. As soon as the roads are choked with the passenger cars and fuel prices exceed tolerable limits, the time will come for the period of reurbanization, which can be further amplified by the increasing value of time and by environmental pressures on reduced traffic emissions.

The situation in peripheral regions is different. To overcome a distance to core regions requires considerable costs due to a larger distance or high losses of time due to difficult traffic situation or both. Hence, the time and financial costs to overcome a distance give a true complex picture of the factor of geometry and territorial conditions.

The main reason to study peripheries is however their economic remoteness which is of a more complex character and which develops as a consequence of the interaction between territorial conditions and human activities. Remoteness, and in mountain areas also unfavourable conditions for agriculture, have an adverse effect on the interest of both domestic and foreign developers, which subsequently changes conditions on the labour market. Young and skilled people leave to core regions for better paid jobs. And it is also the age and qualification structure of the population that are changing. This is the main reason why some geographers use demographic indicators to measure marginality (e.g. Bański 2005).

There is a whole range of economic marginality indicators. Some of them may be focusing gross national product per capita, investments into economy, income structure of households, migration characteristics, changes in the population age structure, percentage of people with higher education, etc. Unlike in the measurement of distance, the assessment of economic marginality has to face a number of methodological problems already in the determination of individual indicators and their territorial projection. Even more difficult is to determine the complex value of marginality for a given region.

On the other hand, there is also the perception of marginality. People consider certain regions peripheral with no regard to set-up indicators. This relates to the concept of area image which in reverse affects the interest of developers to invest money in this or that territory. And here we have a deviation-forming process when the perception of region as marginal can consequently further increase its marginality.

REGIONAL MANIFESTATIONS OF THE PERIPHERY

In Czech conditions, marginality relates both to distance from Prague and to distance from the western (Bavarian) border which represents the line of growth. Furthermore, it is also the borderland location which is with only few exceptions characterized by broken relief and by a higher level of urbanization and industrialization (although the old industrial regions struggle with the problem of transformation which brings certain features of marginality). From the national point of view, peripheral regions can be considered both the eastern part of Czechia (distance from the core) and the southern part of the country (higher degree of rurality). Thus the most marginal territory would be South Moravia.

At a regional level, the role of cores is played by regional centres, mostly regional capitals which are to be related to distance at this level. Remote locations are then not only borderland microregions but also the so called inner peripheries, usually the upland areas with difficult traffic conditions. Although the geometrical distance to cores need not be great, time required for its overcoming is considerable. Which means, that a periphery can come to existence even at a distance of 40-50 km from a regional centre.

In Czech conditions, there is another factor that adds to the other ones, viz. a consequence of the post-war population exchange practically along the entire length of the state border with an exception of the border with Slovakia. A greater part of German population had to leave the then Czechoslovakia, and the population loss was compensated for by Slavonic settlers from inland and from abroad. This resulted – in rural areas

in particular – in a disruption of the historical continuity in the relation to soil, landscape and region, which seems to be a pronounced factor of marginality.

At a microregional level, marginality is a part of the town-hinterland relationship. In this case, too, territorial conditions play an important role. The hinterland of big towns and fertile by traffic, well accessible and passable parts of the country exhibit a microregionalization washing off. People can to a certain extent satisfy their demand of urban services in although more distant yet better equipped large and medium-size towns. Small towns gradually stop playing a role of microregional centers and they either get specialized or focus on housing functions.

On the other hand, with the transition to market economy the role of small towns becomes more important in peripheral regions, their rural hinterlands representing a microregional periphery. In spite of the fact that geometrical distances are usually only several kilometres, economic differences are often considerable. Small towns form actual and irreplaceable cores of these microregions.

THE ROLE OF SMALL TOWNS

The structure of settlement in upland areas of Czech Republic is typical with its high number of small and very small seats (with less than 200 or less than 100 inhabitants) that are not too distant from one another. The seats cannot create a sufficiently large internal market which would provide for the economic existence of services. There is an ever increasing number of villages missing not only an outlet but also a restaurant or another basic amenity.

Therefore, small towns developed in favourable locations as centres of rural hinterlands. These small towns ensure for their hinterlands not only the basic standard of urban services but also a basic offer of jobs in the secondary and tertiary sectors, being places of social contacts, information exchange and spread of innovations. They usually also mediate contacts with the rest of the world as they are as a rule directly connected with one or more centres of higher order in the hierarchy.

The role of small towns in peripheral locations is usually unambiguous. Competition in the form of other small towns or large villages with internal market of their own is usually rather exceptional. Distance to neighbouring centres of rural hinterland is in Moravian conditions some 10 km with attraction zones reaching usually from the valley to higher elevations. In spite of social and economic changes of the last period of time, attraction zones of these small towns are relative stable.

Typical services available in small towns include a secondary school, a health centre (exceptionally a hospital), a shopping centre and a number of specialized outlets, several gastronomic facilities, a cinema or a house of culture with a hall, an old peoples' home and the like. With their quiet environs on the one hand and a range of basic urban services on the other hand, small towns in peripheral regions are by the way appropriate places for the localization of community services such as old peoples' homes, youth hostels, medical institutions for long-term patients, etc. Nevertheless, these small towns are sometimes missing accommodation facilities of at least average standard and capacity.

WHEN SHOULD BE PERIPHERALITY CONSIDERED A PROBLEM?

In the case that peripherality is a natural phenomenon and even the driving power of market competition, it cannot be considered generally negative. Should we take into account the criteria of singling out problem regions for purposes of the European regional policy (Churski 2004), we can claim that apparently not all problem regions are peripheral and not all peripheral regions must necessarily be problematic.

On the contrary, even in the peripheral regions there are people who develop their activities. The peripheral regions can often boast of a much cleaner environment, closer relation to nature, more tranquillity and lower stress from the concentration of people and activities. Due to a higher level of community control, peripheral regions have usually also a higher standard of personal security, which is a factor whose significance is likely to be increasing in the future. It follows from the above that the peripheral regions may appear attractive for some population groups, which can be further contributed to by the development of communication technologies which –although not being able to substitute for personal relationships- can facilitate a highly qualified work at home. These groups will naturally always form a minority, otherwise the peripheral regions would lose their peripherality and hence their typical attributes.

A core needs a periphery without which it could not be the core. Periphery is for the core also an outlet for its services on the one hand, and an area of short-term recreation for its inhabitants. This is why a natural effort of any core is to look after its periphery. Then when the peripherality becomes a problem?

It can be assumed that peripherality becomes a problem at the moment when the finance invested by the core into the periphery fail in launching any internal activity. This means that the core is sentenced to invest ever more into the survival of its periphery with no chance of considering not only the return of the investments but not even a withdrawal or reduction of the sum required for the support of the periphery.

A consequence can be seen in irreversible depopulation processes combined further with the dilapidation of buildings and increasing area of fallow lands. The landscape is losing any kind of attractiveness and the factors that used to attract groups of population seeking tranquillity, cleaner environment and higher standard of personal security disappear as well. Inhabitants of these peripheries can fall below the level of poverty as shown by Michálek (2005) on the example of Slovakia.

The sense of regional policy, both at a national or regional level, is to avoid this situation. And this is why the regional policy is so important – with no regard to the functioning of the invisible hand of the market.

ACKNOWLEDGEMENT

The paper was elaborated within the project of the Grant Agency of the Czech Academy of Sciences Nr. IAA3086301 “Geography of Small Towns”.

REFERENCES

Bański, J. (2005) Suburban and peripheral rural areas in Poland: the balance of development in the transformation period, *Geografický časopis* 57, 117–130.

Cullen, B.T., Pretes, M. (2000) The meaning of marginality. Interpretations and perceptions in social science, *Social Science Journal* 37, 215–229.

Danielczyk, R. (1998) *Zur Neuorientierung der Regionalforschung.* Universität, Oldenburg.

Forbes, W., Kaktins, S. (2003) *Rural Development.* in *Geography in America at the dawn of the 21st century,* Oxford University Press, Oxford, 339–349.

Friedlein, G., Rudenko, L. (2002) Die Relativität des Strukturbegriffs "peripherer Raum" in den Nachfolgestaaten der Sowjetunion, *Europa Regional* 10, 97–99.

Hampl, M. (2000) Pohraniční regiony České republiky, současné tendence rozvojové diferenciace, *Geografie* 105, 241–254.

Chromý, P., Janů, H. (2003) Regional identity, activation of territorial communities and the potential of the development of peripheral regions, *Acta universitatis carolinae – Geographica* 38, 105–117.

Churski, P. (2004) Struktura społeczno-gospodarcza obszarów problemowych w Unii Europejskiej i Polsce w świetle unijnej polityki regionalnej, *Przeglad Geograficzny* 76, 189–208.

Jančák, V. (2001) Geografický výzkum periferních oblastí na mikroregionální úrovni, *Geografie* 106, 26–35.

Leimgruber W. (1998) *From highlands and high latitude zones to marginal regions*, in Jussila, H., Leimgruber W., Majoral R. (eds.), *Perceptions of marginality.* Aldershot Ashgate, 27–33.

Marada, M. (2001) Vymezení periferních oblastí Česka a studium jejich znaků pomocí statistické analýzy, *Geografie* 106, 12–25.

Michálek, A. (2005) Koncentrácia a atribúty chudoby v Slovenskej republike na lokálnej úrovni, *Geografický časopis* 57, 3–22.

Knox, P.L., Marston, S.A. (2001) *Human Geography*, 2nd edition. Prentice Hall, Upper Saddle River.

Pašiak, J., Faltan, Ľ., Gajdoš, P. (1995) Marginal Regions in the Slovak Republic, Summary report, Institut für Wissenschaften vom Menschen, Wien.

Štika, R. (2004) Regionální rozdíly v Česku v 90. letech v kontextu novodobého vývoje, *Geografie* 109, 15–26.

Věžník, A. (1997) *Rurálně geografické aspekty zemědělství marginálního regionu na příkladu Konicka*, in *Contemporary Problems of the Czech Republic and Slovak Republic,* Masarykova univerzita, Brno, 110–117.

EUROPA XXI
2006, 15: 13–28

CULTURAL LANDSCAPES AS A POTENTIAL FORCE FOR REGIONAL DEVELOPMENT — THEORETICAL APPROACHES AND CASE STUDIES IN EAST GERMAN SUBURBAN AND RURAL REGIONS

ANDREAS RÖHRING and LUDGER GAILING

Leibniz-Institute for Regional Development and Structural Planning (IRS)
15537 Erkner (near Berlin), Flakenstr. 28–31
e-mail: Roehring@irs-net.de, Gailing@irs-net.de

Abstract: Cultural landscape is currently being rediscovered as a regional potential. To examine the problems and opportunities of landscape change elements of an institutional theory of cultural landscape will be outlined. Following than, two documents at the European level with a holistic approach to landscape will be analysed: the ESDP and the ELC. On this basis the paper examines the management of cultural landscapes at the regional level using the example of two case studies in German suburban and rural areas. Conclusions for cultural landscape related regional management will be derived from the theoretical considerations and the empirical results of the case studies.

Key words: Regional studies, social science, institutional theory, cultural landscape, multifunctionality, public policies, regional management

INTRODUCTION

In response to the continuous processes of globalisation, social and economic transformation, centralisation or peripherisation, cultural landscape is currently being rediscovered as a potential of regional development. The European Landscape Convention (ELC) states in its preamble that landscape is a "key element of individual and social well-being" and an "important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas of high quality, areas recognised as being of outstanding beauty as well as everyday areas" (Council of Europe 2000). In the European Spatial

Development Perspective (ESDP) of the European Union the natural and cultural heritage have been characterised as "economic factors which are becoming increasingly important for regional development" (European Commission 1999). Consequently cultural landscape can be understood as an endogenous potential which influences not only the living and working conditions of the people of a region, but also its economic competitiveness and attractiveness for tourism.

Owing to the above-mentioned processes and their impacts on the development of rural, suburban and urban regions, accelerated and contradictory changes of cultural landscape take place (cf. Antrop 2005; Bürgi et al. 2004; Schenk 2001; Sieferle 2003), expressed in the coexistence of continuous suburbanisation and the contraction of cities or towns, the release of brownfields and the simultaneous utilisation of greenfields, opencast mining and land recultivation, intensive farming, set-aside of arable land and the extension of nature protection areas. Urban agglomerations are growing at the expense of the surrounding landscapes with negative impacts on peripheral rural regions. The consequences of these facts for cultural landscapes are also the loss of characteristic features and originality as well as a trend towards standardised landscapes. These processes have occurred within recent decades in Western and Southern Europe and have been taking place more recently within the new EU member states in Central and Eastern Europe.

To examine the problems and opportunities of cultural landscape change and to derive requirements for the management of cultural landscape as a regional potential, the social science approaches of institutional theory will be used in this paper. At first, elements of an institutional theory of cultural landscape will be introduced. Next, the paper focuses on the inclusion of cultural landscape in regulations at the European level. It then examines the dealing with cultural landscapes using the examples of case studies in German suburban and rural areas. Finally, conclusions for cultural landscape related regional management will be drawn.

ELEMENTS OF AN INSTITUTIONAL THEORY OF CULTURAL LANDSCAPE

Today's European landscape is the result of human forms of land use over centuries. In this sense every European landscape is man-made and can be called a cultural landscape, independent of its quality or other normative considerations. Because of the diverse geo-biophysical conditions of the natural environment, the different historical developments and traditions, the existing land-use regimes and the socio-cultural activities, regions are characterised by different cultural landscapes with various qualities. Cultural landscapes are not only formed by people, they also influence the behaviour of regional actors and the population of a region, e.g. by the identity-establishing effects of the landscape. The special qualities of cultural landscape also shape the attractiveness and the image of a region. Cultural landscape can also be an important factor in regionalisation processes. To recognise and empower cultural landscape in that sense as an endogenous factor and a potential force for regional development it is necessary to understand the social construction of cultural landscape and the driving forces of cultural landscape change. Because of that, the analysis of the social character of cultural landscape and of landscape

related human behaviour from the perspective of an institutional theory of cultural landscape offers new insights (cf. Apolinarski et al. 2004).

It can often be observed that the same actors derive benefit from the high quality of a cultural landscape on the one hand but do not contribute to maintaining this quality, or even damage the cultural landscape, on the other. This phenomenon indicates that cultural landscape possesses the typical attributes of a common good – everyone can derive benefit without consideration. But cultural landscape is not a homogeneous good, it is a heterogeneous regional common good consisting of a multiplicity of regionally bounded elements with different functions, e.g. the natural and cultural heritage, the results of open space or settlement activities, the current structures of industrial or agricultural production. These single elements can provide diverse common or private goods or services. But as the different functions of the cultural landscape elements are highly integrated with one another (multifunctionality of landscape) the actors cannot reduce their activities with regard to a single function without positive or negative consequences for others. These positive or negative external effects can be detected in the dealing not only with common goods but also with private goods. The impacts of these external effects on the cultural landscape of a region are dependent on the economically and socially determined behaviour of the actors.

According to institutional theory (cf. Young 2002, p. 5) human behaviour is influenced by a wide range of formal and informal, centralised and decentralised institutions. Formal institutions are sets of rules and regulations or administrative structures articulated in constitutive documents. Institutions in that respect must not be confused with organisations, which are themselves actors only influenced by institutions. It is important to recognise, however, that especially formal institutions do not simply provide orientation for actors; they are themselves subject to (re-)shaping by actors (Scharpf 1997). The landscape related behaviour of actors is not only influenced by formal institutions but also by informal institutions, e.g. traditions, regional identity, images, customs and ecological or social values. They are often highly resilient and it is very difficult to change them.

Given the multifunctionality and heterogeneity of the common good cultural landscape, comprehensive institutional regimes designed to regulate the development and use of cultural landscape as a whole cannot exist. In fact the change of cultural landscape is more or less a by-product of market forces, sectoral policies and their different institutional regimes which are often oriented monofunctionally. The consequences for cultural landscape are often not taken into consideration when designing or adapting institutions and the effects on cultural landscape – positive and negative – are therefore often unintentional.

In general institutions concerning landscape can be divided into three categories: those concerned with the utilisation of landscape (agriculture, silviculture, settlement activities), those concerned with the protection of landscape (nature conservation, heritage conservation) and those concerned with the integration of both aspects (spatial and regional planning, landscape planning). Each of these institutional regimes is characterised by a different understanding of the term cultural landscape as well as by special institutional configurations and logic of action.

From an institution-based perspective, the problems of cultural landscape can be seen as, in essence, institutional problems of interplay, fit and scale (Young 2002, p. 20).

The variety of landscape elements lead to a high density of institutions affecting cultural landscape and because of the given functional interdependencies, problems of interplay (Young 2002, p. 23) can occur. Current tendencies expanding the ranges of sectoral rules and regulations in the sense of multifunctionality as a political concept (cf. *OECD* 2001) lead to increasing institutional interactions and require deliberate consideration of these facts. To avoid institutional conflicts institutional interplay can also be intentionally designed by "politics of institutional design and management" (Young 2002, p. 23). Another dimension of interplay in connection with the change of cultural landscape is the interplay between formal and informal institutions. Due to the different goals of institutional regimes the behaviour of actors in using the given scope of institutions and identifying institutional windows of opportunity with regard to different aspects of cultural landscape is essentially influenced by informal institutions.

Institutional problems of fit (ibid., p. 20) concern, in the case of cultural landscape, factual compatibility or spatial congruence between institutional arrangements designed to manage particular human activities and the specific requirements of cultural landscape at the regional level. Whereas cultural landscapes can be the subject of regionalisation and regional management independent of administrative areas, formal institutions are mostly bounded by administrative areas, so that problems of spatial fit can occur.

Institutional problems of scale (ibid., p. 26) result from the spatial difference, for instance, between the level at which especially formal institutions are created and the level of cultural landscape at which institutions work. Another aspect of scale is finding the right level for managing cultural landscape. Formal institutions, representing goals of centralised public policy, are often designed in a generalised manner at the state, federal or European level to regulate different issues shaping landscape.

The historical development of cultural landscape often leads to path-dependencies at the level of landscape as well as at the institutional level. They can limit the given scope of action for cultural landscape development. Path-dependencies can arise from the intensive use of specific landscape functions accompanied by huge structural investments or other extensive measures changing the landscape considerably, affiliated with a corresponding institutional regime. Examples of landscapes characterised by strong path-dependencies are e.g. mining landscapes, drainage or irrigation landscapes and urban landscapes. After the abandonment of a development path, persistent elements without real functions are usually left. Because they are often also symbols of the history of the cultural landscape and in this way identity-establishing, cultural landscape management must find ways to discover opportunities for the dealing with these remnants.

THE EUROPEAN SPATIAL DEVELOPMENT PERSPECTIVE AND THE EUROPEAN LANDSCAPE CONVENTION – COMPLEX APPROACHES FOR DEALING WITH CULTURAL LANDSCAPE

To establish cultural landscape as a regional potential institutional arrangements integrating the interests of both utilisation and protection are required. At the European level there are two formal institutions concerned with these requirements: the European Spatial Development Perspective (ESDP) of the European Union (European Commis-

sion 1999), adopted in 1999, and the European Landscape Convention (ELC) of the Council of Europe (Council of Europe 2000), operative from 2004.

In the ESDP the "conservation and management of natural resources and the cultural heritage" (Art. 18) is one of three fundamental goals for spatial development in all the regions of the EU, because the "characteristic territorial feature of the European Union (EU) is its cultural variety, concentrated in a small area. This distinguishes it from other large economic zones of the world (…) This variety – potentially one of the most significant development factors for the EU – must be retained in the face of European integration" (Art. 1). Regarding the application of the ESDP in the Member States "it is proposed that the Member States (…) take into account the policy aims and options of the ESDP in their national spatial planning systems" (Art. 184). But the cultural landscape related principle of the Federal German Regional Planning Act of 1998, two years before the ESDP was adopted, is relatively fragmentary and concerned with protection: "Historical and cultural relationships and regional affiliations shall be maintained; the characteristic features and the cultural and natural monuments of evolved cultural landscapes shall be preserved." (ROG § 2 (2) 13.) In recent years working groups have debated problems and requirements for the operationalisation of this principle (cf. Matthiesen et al. 2006).

The aims of the ELC are "to promote landscape protection, management and planning, and to organise European co-operation on landscape issues" (Art. 3) and "to establish and implement landscape policies" (Art. 5b) at the national and regional levels in line with these goals. Of 46 member states of the Council of Europe 13 states had ratified the ELC and 19 further states had signed it by 2005. The ELC has not yet been signed by the German government although this has been recommended by landscape planning associations in the context of various activities.

The ESDP, like the ELC, comprises a wide spectrum of landscape related issues and strategic guidelines emphasising specific, and partly additional, aspects in detail, which are related to the disciplines of spatial and regional or landscape planning. The preamble of the ELC highlights "that the quality and diversity of European landscapes constitute a common resource" and because of that "its protection, management and planning entail rights and responsibilities for everyone". Both regulations cover the total spectrum of landscapes: "urban areas and in the countryside, (…) degraded areas as well as (…) areas of high quality, (…) areas recognised as being of outstanding beauty as well as everyday areas" (ELC Preamble) or "towns and cities, their hinterland and rural areas" (*ESDP*, Art. 134).

The ESDP emphasises the existing rich diversity of cultural landscapes as a result of "the way in which local and regional communities through the centuries have dealt with their environment and cultivated the land" (Art. 323). The ELC defines the character of landscape as "the result of the action and interaction of natural and/or human factors" (Art. 1a). The ESDP and the ELC include socio-cultural aspects in the term "landscape" because "cultural landscapes contribute through their originality to local and regional identity" (*ESDP*, Art. 151) and "to the formation of local cultures" (ELC, Preamble). The ELC also highlights the innovative aspect of landscape perception in extension of traditional approaches and states that " 'Landscape' means an area, as perceived by people" (Art. 1a).

Regarding the potentials of cultural landscape for regional development both the ESDP and the ELC focus on the importance of the quality of life which "plays an increasingly important role in the location decisions of new companies" (*ESDP*, Art. 134). Landscape "constitutes a resource favourable to economic activity and (…) can contribute to job creation" (ELC, Preamble). The image of "a distinctive landscape can be used to promote the qualities of an area for attracting new industry, for tourism and for other types of economic investment" (*ESDP*, Art. 323).

Regarding the causes and motives for landscape change the ESDP states that "measures affecting landscapes are frequently uncoordinated. Their results tend to be random and often just reflect various interests of each participant" (Art. 153). A special problem is seen by the ESDP in insidious cultural landscape change because the "destruction of landscapes is not always dramatic. In some areas it is occurring gradually and almost unnoticed. It can be difficult to develop a specific protection policy for these landscapes, because it is the whole composition, not individual elements which provide the value" (Art. 324).

To develop cultural landscape as a regional potential the goal should be "to achieve sustainable development based on a balanced and harmonious relationship between social needs, economic activity and the environment" (*ELC, Preamble*). Therefore different management strategies outlined by the ESDP are necessary: "A creative approach is required, to reverse in a number of areas the predominant trend of neglect, damage and destruction and thus pass the cultural heritage, including current achievements, on to future generations" (Art. 133), because "rigorous protection measures (…) can only cover a small part of this heritage" (Art. 133). "In a great number of cases the creative further development or the restoration of landscapes is more important than preservation of the current situation" (Art. 153) and "in some cases, the countryside can deteriorate through a lack of human intervention. This happens, in particular, where traditional agricultural land use methods are given up" (Art. 154).

The policy options outlined by the ESDP for dealing with cultural landscape aim at the "preservation and creative development of cultural landscapes with special historical, aesthetical and ecological importance, (the) enhancement of the value of cultural landscapes within the framework of integrated spatial development strategies, (the) improved co-ordination of development measures which have an impact on landscapes (and the) creative restoration of landscapes which have suffered through human intervention, including recultivation measures" (Art. 155). Because of the heterogeneous driving forces of cultural landscape change it is necessary (according to the *ELC*) "to integrate landscape into (the) regional and town planning policies and in (the) cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape" (Art. 5d). The management approach of the ELC aims at "landscape policy" and "landscape management". " 'Landscape policy' means an expression by the competent public authorities of general principles, strategies and guidelines that permit the taking of specific measures aimed at the protection, management and planning of landscapes" (Art. 1b). " 'Landscape management' means action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes which are brought about by social, economic and environmental processes" (Art. 1e).

The ELC also includes measures to influence informal institutions concerned with landscape, such as the increasing of "awareness among the civil society, private organisations, and public authorities of the value of landscapes, their role and changes to them" (Art. 6) and the increasing of knowledge about the landscape. Another aspect is the establishment of "procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of the landscape policies" (Art. 5c). Regarding transfrontier landscapes "co-operation on local and regional level" should be encouraged (Art. 9).

CASE STUDIES OF SUBURBAN AND RURAL CULTURAL LANDSCAPES IN GERMANY

The problems of managing cultural landscapes and their activation as a potential force for regional development will be examined using the example of two contrasting case studies in German suburban and rural areas. The cultural landscape of Barnim is based on the geo-morphological Barnim Plateau on the outskirts of Berlin. The cultural landscape Oderbruch is a settled polder region along the river Oder on the German-Polish border (Figure 1). Barnim is a growing suburban region whereas the peripheral Oderbruch is characterised by negative population growth.

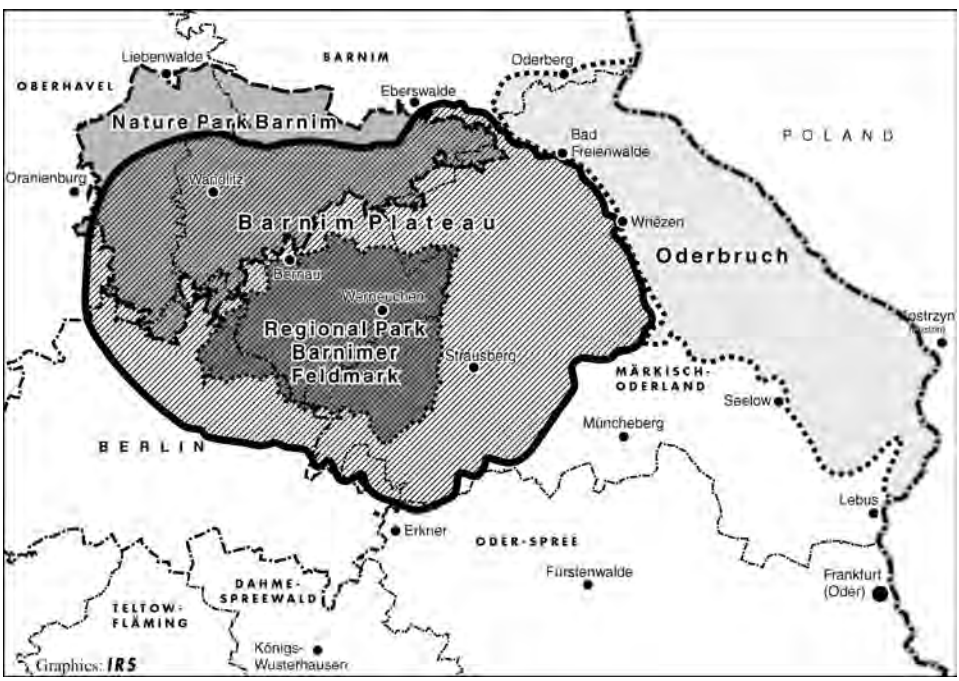


Figure 1. Case study regions: cultural landscapes of Barnim and Oderbruch

CASE STUDY BARNIM

The character of the cultural landscape of the Barnim Plateau in the North-East of Brandenburg was defined over centuries by agricultural and silvicultural land use. Since the rise of Berlin as the capital of Prussia and afterwards of Germany, Barnim increasingly assumed compensational functions vis-à-vis the growing metropolis. Consequently the cultural landscape of Barnim underwent a fundamental change: particularly in the direct neighbourhood of Berlin and along the traffic routes, settlements and urban infrastructures grew at the expense of open spaces. Furthermore, additional structures such as sewage fields or areas for weekend homes and other leisure uses increasingly dominated Barnim. In addition to the process of suburbanisation, which continued under the German Democratic Republic (GDR) in the form of massive residential construction in the former rural parts to the east of Berlin, other processes such as the intensification of agriculture or the abandonment of historical land uses such as fruit-growing led to a sustained landscape change.

Figure 2. Between metropolis and countryside: cultural landscape Barnim

Thus Barnim nowadays is a heterogeneous landscape with urban, suburban and still rural portions and therefore characteristic for other landscapes at the edge of an urban agglomeration. As a predominantly suburban landscape (Figure 2) Barnim is affected by institutional problems of interplay between sectoral institutional arrangements such as agriculture, settlement development, infrastructure development, recreation planning, and nature conservation. Active attempts to solve landscape-related problems of interplay in Barnim often tend to fail due to their institutional embedding in sectoral actor

systems. Therefore it appears promising to bundle sectoral goals at the level of specific projects (e.g. the touristic and conservational redevelopment of historical gardens and castles) or to use the work of multifunctional organisations such as local committees or civic associations for the development and the management of the cultural landscape (e.g. the association "Regionalpark Barnimer Feldmark e.V.") However, multifunctional projects or organisations do not normally solve severe area conflicts, but concentrate on integrable landscape uses.

Since the early 1990s the process of suburbanisation was reinforced and required new institutional answers for the protection of common good functions such as nature protection or local recreation. This situation was the starting-point for the re-formation of Barnim as a cultural landscape – and at the same time as an administrative district.

- 41 years after the abolition of the district – and also the term "Barnim" – under GDR law, the Barnim administrative district was re-instituted in 1993. However, its area of activity is identical neither with the Barnim Plateau nor with the historical district of Barnim, which existed from 1608 to 1952.
- Based on an offer by the Joint State Development Programme for Berlin and Brandenburg Regional Park, Barnimer Feldmark to the north-east of Berlin was founded in 1996.
- Nature Park Barnim to the north of Barnim was founded in 1999 based on the involvement of local nature conservationists and supported by the environment administrations of the federal states of Berlin and Brandenburg.
- Further areas of activity such as the recreation area "Berliner Barnim" or the tourism region "Barnimer Land" were called into existence.

Hence the cultural landscape Barnim does not fit spatially into one regional area of activity but is characterised by overlapping and fragmentations. The complexity of this situation is amplified by the fact that Barnim as a transboundary landscape is divided by the frontier between the federal states of Berlin and Brandenburg which, together with its apportionment to several administrative districts in Brandenburg and the variety of landscape-related areas of activity, hinders a coherent approach to the entire cultural landscape. Beside a common cultural landscape policy these problems of spatial fit represent barriers to a common regional identity. The construction of new competing Barnim identities and the inflationary utilisation of the term "Barnim" will arguably lead in future to the consolidation of partial spacial identities and landscape images.

Like many other cultural landscapes Barnim does not have a clear and unique landscape image due to the fact that it has no distinct characterising singularity. Barnim is, rather, a diverse landscape with lakes, forests, open lands and urbanisations without unique selling-points or typical structures. Regional Park Barnimer Feldmark and Nature Park Barnim are therefore trying to give Barnim a clear and marketable external and internal image, but are confronted with the persistent reality of the cultural landscapes such as the urban sprawl around Berlin, the cleared agricultural landscape of the Barnimer Feldmark or the abandoned sewage fields. The creation of a new Barnim image as a touristically and, from a nature conservation standpoint, attractive cultural landscape demands active landscaping and also the reinterpretation of certain unattractive landscape features (Figure 3).

Figure 3. Reinterpretation of landscape features: land-art "canoe" in a former sewage field

Both tasks also require answers to the problems of interplay for multifunctional institutional arrangements or regional landscape management procedures. Nature Park Barnim and Regional Park Barnimer Feldmark stand for contrasting approaches here. While Nature Park Barnim is a large-scale reserve under formal protection and managed by a state-run administration unit, the development of Regional Park Barnimer Feldmark is based on an informal and voluntary association of local communities and people living and working in the area (e.g. persons providing tourism services) and also of open space users such as farmers. Consequently Nature Park Barnim works efficiently concerning compliance to the sectoral goals of nature conservation programmes but it is inadequate concerning collaboration with land users or local communities; complementary organisations such as a development association or a board of trustees therefore assist the administration unit.

In contrast Regional Park Barnimer Feldmark depends – like other regional parks in Germany (cf. Gailing 2005) – not on the top-down approach of public landscape protection but on bottom-up activities. An institutional void, which becomes manifest in a lack of financial resources, a lack of collaboration between Berlin and its surroundings and a lack of efficient management structures, results indeed in only a small number of projects being realised, but offers good prospects for actions integrating the motives of land users and for civil society based associations. Thus, landscape policy opens up perspectives for sustainable development following the principle "ecological protection by sustainable socio-economic use".

Given that governance structures require a regional anchorage, Nature Park Barnim and Regional Park Barnimer Feldmark strongly depend on identity-building projects, cooperative arrangements, the recreation of regional traditions and references to the history of the cultural landscape Barnim.

CASE STUDY ODERBRUCH

Today, the cultural landscape "Oderbruch" is a settled polder region and consequently a landscape strongly shaped by humans, situated along the river Oder on the German-Polish border. As part of the land reclamation policy of the Prussian king Friedrich II in the 18th century, which was aimed at strengthening the agricultural sector, river training measures were carried out on the basis of a masterplan from 1747: the construction of the New Oder Canal, the embanking of the river Oder and the drainage of the former wetlands. About 40 new settlements were placed on the reclaimed land and populated by people from other parts of Germany and several European countries.

The land use and water regime thus created has been perfected by further drainage and water control measures, in other words by the same logic of action, over a period of 250 years. Especially during the complex improvement between 1965 and 1985 drainage within the polder was considerably enhanced in connection with an increase in the intensity of agricultural production by large collective farms, causing negative ecological consequences and a further loss of landscape structures. Land use in the Oderbruch has been shaped up to now by intensive farming on large plots of fertile cropland. Parts of the Oderbruch are specialised in vegetable production. Meadowland dominates in the immediate vicinity of the Oder river and in the lower parts of the polder region. Drainage channels, tree-lined roads, typical village structures, but also a lack of valuable biotopes and nature reserves, characterise the scenery of the Oderbruch (Figure 4).

Figure 4. Settled polder region: cultural landscape Oderbruch

The drainage measures, the water control and the flood protection, characterised as common goods, have been an elementary precondition for the agricultural land use and settlement activities in the Oderbruch. But the strong interdependence between land use and the water regime, the persistent elements of the drainage infrastructure with the accompanying extensive investment and especially the fact that the Oderbruch is a populated polder region, have led to a strong path dependency limiting the scope for the development of the region. In addition to that, the development of the cultural landscape Oderbruch has been considerably influenced by central political decisions and central institutional regulations: from the "top down" decision concerning drainage and colonisation, through the governmental programme of complex improvement to the impacts of the Common Agricultural Policy (CAP) on the behaviour of the agricultural enterprises.

During the extreme Oder flood in 1997 the Oderbruch was faced with a major flood threat. Because of extensive operative flood control measures and embankment stabilisation a flood disaster like that of 1947 could be averted. But the 1997 flood has triggered a new discussion regarding the limitations and opportunities of the future development of the Oderbruch, which is not only affected by the above-mentioned strong path dependency of the polder region but also by the effects of the social and economic changes in the 1990s with the loss of jobs in agriculture and the negative growth of the population, as well as by new requirements e.g. of the Habitats Directive and the Water Framework Directive of the European Union.

The concept "Oderbruch 2010", based on long-term scientific work and experience and worked out step by step since 1991 (Quast and Ehlert 2005, p. 9), as well as a position paper adopted at a symposium on the occasion of the 250th anniversary of the opening of the New Oder Canal in 2003 (Quast 2005, p. 116) which characterised the Oderbruch as a "unique cultural heritage of European importance" (Quast 2005, ibid.), aimed at measures adapting the land use and water regime and improving the ecological situation in the Oderbruch by ensuring efficient agriculture production. In addition to that, measures for the diversification of the regional structure of the Oderbruch in a sustainable manner, e.g. by tourism (which did not exist in the region before 1990) have been recommended. As an intended by-product of the ecological measures the attractiveness of the landscape should increase. Both papers also aim at the networking of the Oderbruch with other comparable polder landscapes such as those in the Polish Vistula wetlands and in the Lithuanian Nemunas lowlands. All the recommended measures require stakeholder participation and acceptance for their success.

The state of Brandenburg's 1997 Oder programme, aimed at the repair of the damage caused by the flood, at embankment reconstruction and the improvement of flood protection, also included a large number of infrastructure measures, such as road reconstruction or village redevelopment. In connection with the flood protection measures a new Oder cycle-track was built on the top of the reconstructed embankment of the Oder river. Its high acceptance is due to the positive effects for the villages and guesthouses which are situated directly along the river. All these infrastructure measures offer good preconditions for private and charitable, tourist and socio-cultural activities, which are often government sponsored, e.g. by Leader-plus or national support programmes, some of which had already been initiated at the beginning of the 1990s. But the activities are

mostly linked only in the context of their social or smaller regional milieus or at the level of the separate, partly overlapping, development programmes.

The historical development and the relatively homogeneous current problem constellation of this spatially clearly defined cultural landscape have led to a distinctive regional identity of the Oderbruch (Figure 5). On the one hand this identity is shaped by long-term inhabitants with their traditions. This identity finds expression e. g. in the activities of local history clubs or in the anniversary events of the village foundations. On the other hand it is also shaped by people who have moved from outside into the Oderbruch, e.g. artists from Berlin, seeking rurality or solitariness and discovering the specific cultural heritages and the aesthetic qualities of the wide and open landscape. The 1997 flood strengthened not only togetherness and regional identity, but the Oder region and the Oderbruch became well-known nationwide.

Figure 5 Persistence of traditional settlement structures: typical colonist village in the Oderbruch

In contrast to this distinctive regional identity and the spatially clearly defined cultural landscape the image of the Oderbruch is relatively weak. The cultural landscape Oderbruch does not appear as an independent action arena managed by a form of regional governance. But creating a positive long-term image, derived from the regional identity and the cultural landscape potentials, realising the ideas of the concept "Oderbruch 2010", linking the separate regional activities and ensuring stakeholder participation requires regional management at the cultural landscape level. In that way the "window of opportunities" opened by the 1997 Oder flood and taken up by the concept "Oderbruch 2010"

should be used for the future development of the cultural landscape Oderbruch in a more conscious and sustainable manner.

CASE STUDIES BARNIM AND ODERBRUCH – SYNOPSIS

	Barnim	Oderbruch
Form of regional structure	predominantly suburban landscape	rural, shrinking peripheral landscape
Dominating institutional systems	multitude of sectoral institutional arrangements (agriculture, settlement and infrastructure development, recreation planning or nature conservation)	water management and agricultural land use; influence of central institutions
Path dependency	persistent processes and features like the urban sprawl, the cleared agricultural landscape of the Barnimer Feldmark or the abandoned sewage fields	strong path dependency of the settled polder landscape; persistent elements of the drainage system
Potentials of cultural landscape development	re-formation of a cultural landscape in favour of the protection of common good functions such as nature protection or local recreation; cultural landscape as a soft location factor	consolidation of the typical cultural landscape potentials in the combination of nature and culture; cultural landscape as an important factor for future development
Dangers in cultural landscape development	negative effects of suburbanisation with related problems of institutional interplay	negative growth of the population has a damaging effect on traditional village structures
Action arena (problems of spatial fit)	cultural landscape does not fit spatially into one action arena (overlappings and fragmentations); variety of landscape-related action arenas	the spatially clearly defined cultural landscape does not appear as an independent action arena
Regional identity	construction of new competing Barnim identities	relatively distinctive traditional Oderbruch identity
Landscape image	no clear, unique landscape image (no distinct characterising singularity); necessity of the reinterpretation of certain unattractive landscape features	relatively weak image in the face of the existing cultural landscape potentials and the regional identity
Regional management activities	Nature Park Barnim, Regional Park Barnimer Feldmark	without regional management at the level of cultural landscape

CONCLUSIONS FOR CULTURAL LANDSCAPE RELATED REGIONAL MANAGEMENT

In order to strengthen cultural landscape as a potential force for regional development, the key issues for cultural landscape policy and cultural landscape related regional management can be characterised as follows.

– It should be recognised by the regional actors as well as by the people of the region that all landscapes shaped by humans, whether beautiful designed park landscapes or everyday landscapes, are cultural landscapes. But the real quality of a cultural landscape, which distinguishes it from others, will often be detected only by people from outside the region. Cultural landscape should also be discerned as a regional common good. This means not only that everyone can derive benefit from a high quality of cultural landscape, but also that it is necessary to maintain and supply this quality consciously.

– The given multifunctionality of the cultural landscape and of its heterogeneous elements should be applied as a conceptual approach to avoid or to solve the institutional problems of cultural landscape. Therefore it is necessary to use the given scope of the different sectorally oriented, central institutional systems and motivate the actors to adapt their behaviour to the special regional requirements of cultural landscape. In doing so the different sectoral understandings of the term "cultural landscape" should be taken into consideration to activate and to involve a broad spectrum of cultural landscape activities and projects e.g. of nature protection, regional history, the reactivating of traditions, regional innovations or the marketing of regional products.

– Within the context of regionalisation processes cultural landscape can become an area of activity. Governance structures characterised by project orientation, cooperative arrangements and the participation of local stakeholders can conduct cultural landscape management in addition to administrative authorities and formal planning instruments. But the spaces of cultural landscapes, the relevant institutional arrangements and administrative territories rarely fit. Consequently, areas of activity with different backgrounds often overlap and the cultural landscape management has to deal with this fact.

– Cultural landscape management requires creative dealing with path-dependencies and persistent elements. Persistent elements can often be rediscovered or reinterpreted as remarkable historical highlights shaping the cultural landscape and regional identity.

– Cultural landscape is an essential source of identity-establishing effects. It should be taken into account that regional identity is an important social factor for the stability and development of regions. Regional identity can be used as an aspect for the definition of areas of activity and of cultural landscape images. But as an informal institution regional identity cannot directly be influenced by management activities.

– Cultural landscapes are distinguished by an image which is the result of the long-term development of a region. These images are effective as informal institutions and are characterised by a high inertia, often independent of changes in the real structures. Attempts to influence or to create an image and to promote it by regional marketing are often confronted with obstacles because its acceptance depends on its correspondence with the real existing qualities of the cultural landscape and with the real behaviour of the regional actors who fill this image. Cultural landscape images can e.g. support marketing strategies for regional products and for tourism activities.

REFERENCES

Antrop, M. (2005) Why landscapes of the past are important for the future, *Landscape and Urban Planning* 70, 21–34.

Apolinarski, I., Gailing, L., Röhring, A. (2004) *Institutionelle Aspekte und Pfadabhängigkeiten des regionalen Gemeinschaftsgutes Kulturlandschaft*, IRS-Working Paper, http://www.irs-net.de/download/Kulturlandschaft.pdf.

Bürgi, M., Hersperger, A., Schneeberger, N. (2004) Driving forces of landscape change – current and new directions, *Landscape Ecology* 19, 857–868.

Council of Europe (2000) *European Landscape Convention (ELC),* Florence.

European Commission (1999) *European Spatial Development Perspective (ESDP),* Luxemburg.

Gailing, L. (2005) *Regionalparks – Grundlagen und Instrumente der Freiraumpolitik in Verdichtungsräumen,* Dortmunder Beiträge zur Raumplanung Vol. 121, Dortmund.

Matthiesen, U., Danielzyk, R., Tzschaschel, S. and Heiland, S. (2006) *Kulturlandschaften – Herausforderung für die Raumordnung,* Forschungs- und Sitzungsberichte der ARL, Hannover.

OECD (2001) *Multifunctionality – Towards an analytical framework,* Organisation for Economic Co-operation and Development, Paris.

Quast, J., Ehlert, V. (2005) *Concept ODERBRUCH 2010 as an example towards sustainable multifunctional use of polders in the context of integrated land, water and flood management,* in online proceedings of the 21st ICID European Regional Conference, 1–12 http://www.zalf.de/icid/ICID_ERC2005/HTML/ERC2005PDF/Topic_5/Quast.pdf (accessed November 7, 2005).

Quast, J., (2005) *Reasons for historical hydraulic engineering measures for the draining of the Oderbruch and their valuation in today's view,* in German Water History Association, *Integrated Land and Water Resources Management in History,* Schriften der DWhG, Sonderband 2, Siegburg, 115–122.

Scharpf, F.W. (1997) *Games Real Actors Play – Actor-Centered Institutionalism in Policy Research,* Westview Press, Boulder (CO) / Oxford.

Schenk, W. (2001) *Kulturlandschaft in Zeiten verschärfter Nutzungskonkurrenz: Genese, Akteure, Szenarien,* in Akademie für Raumforschung und Landesplanung and Österreichische Gesellschaft für Raumplanung (eds.), *Die Zukunft der Kulturlandschaft zwischen Verlust, Bewahrung und Gestaltung,* Forschungs- und Sitzungsberichte Forschungs- und Sitzungsberichte der Akademie für Raumforschung und Landesplanung 215, Hannover, 30–44.

Sieferle, R.P. (2003) *Die totale Landschaft*, in Oswald, F. and Schüller, N. (eds.), *Neue Urbanität – das Verschmelzen von Stadt und Landschaft*, gta, Zürich, 59–76.

Young, O. (2002) *The Institutional Dimensions of Environmental Change – Fit, Interplay, and Scale,* MIT-Press, Cambridge (MA) / London.

EUROPA XXI
2006, 15: 29–34

SPACE POLARISATION AND PERIPHERAL REGIONS IN CZECHIA

MIROSLAV MARADA, PAVEL CHROMÝ, VÍT JANČÁK, TOMÁŠ HAVLÍČEK

Faculty of Science, Charles University in Prague
Albertov 6, 128 43 Prague 2, Czechia
marada@natur.cuni.cz; chromy@natur.cuni.cz; jancak@natur.cuni.cz

Abstract: Authors perceive periphery as territory not sufficiently integrated into – at given place and time dominating – structures, processes and systems. As specific territory with disordered relations of function-space and social-space characters, which are the results of uneven influence of mutually conditioned social, economic, political, cultural and physic-geographical factors. The authors approach the study of centre and periphery model a) from the point of development, b) from the point of structure and c) from the point of hierarchy and/or scale. With increasing significance of information collecting and classification, the rate of activity of subjects/agents in the territory is decisive then. Periphery is at the same time determined by ability and speed to accept new information and innovation. Besides dichotomy concepts core and periphery are often anchored in thinking and ideas of involved subjects.

Key words: core, periphery, space polarization, Czechia, intensive and extensive research, delimitation, development

INTRODUCTION

Polarised space with poles, core and periphery standing against each other is a result of uneven development of the society in the environs. Due to a lot of factors (historical, political, geopolitical, economic and other) an asymmetric arrangement of settlement structure has formed resulting at the origin of core and periphery areas. In literature, peripheries are mostly characterised as the areas without bigger settlement centres. Classical periphery is the area lying out of economically intensively used area, which is characterized by high rate of unemployment along with higher employment at primary economic

sectors (particularly in basic agricultural production) and generally lower living standard. Peripheral regions are thus the areas not sufficiently integrated at the given place and time of dominating structures, processes and systems.

PERIPHERAL AND MARGINAL REGIONS

Sometimes *peripheral* (lying "at the edge", geometrically distant from the centre) and *marginal* (separated out of the regional system) areas differ conceptually. Though peripheral regions are in a subordinate position towards the centre (particularly from the decision making point of view) on the contrary to the marginal regions they are partially integrated to the system. Thus problems of marginal regions are deeper and the interference of an outer agent is necessary for their solving.

These two terms are not distinguished in our conception and/or we put equals sign between them because marginal regions are difficult to find in Czechia besides other. From the content point of view, specifying of the factors, on the basis of which basic types of peripheral regions, possibly overlaying in their territorial delimitation, can be distinguished, is more substantial. Generally subjective and objective factors can be distinguished. While e.g. sense of belonging of inhabitants to peripheral regions or their resistance belongs to the former ones, objective factors play the decisive role. The basic „objective" factor is geographical location (inner and outer).

DELIMITATION OF PERIPHERAL REGIONS

The factors negatively influencing the life of population (altitude, relief segmentation, climate) dominate if the periphery is delimited on the basis of physic-geographical factors. The main factor for geometric delimitation of periphery is its distance from the core. Series of researches demonstrate peripheries also e.g. along administrative borders inside the state. "*Economic periphery"* is based on regional differentiation of economic activities in the area, "*social periphery"* then on marginalisation of social groups, which socialising process has been somehow disturbed from different reasons (Leimgruber 1994). A special form of "social periphery" is "*culture periphery"* based on segregation of culture minorities. The area at "political periphery" is from various reasons out of the interest of the state administration or it has a special position from this point of view. Understanding of "*environmental periphery"* can be opposite. From this point of view the core is the area of the high-quality environment of little or no use of man (from the perspective of economic activities of periphery) and in contrast there are areas densely populated, altered to rather extent or devastated by human activities (from the perspective of economic activities of *the core*).

Only partial approaches to the delimitation of peripheral regions are characterised in the given overview. Space polarity however is a complex phenomenon therefore it is desirable to approach the study of peripheral areas in a complex way. Geographical approach, based on the effort to joint individual partial approaches to the delimitation of periphery, enables that.

It is important to consider the scale at the research of space polarisation (delimitation of the core and/or peripheral regions). The degree of "peripherness" of the given area, or even a simple classification whether it is a peripheral area or not, depends on the selected scale of view, on the degree of the level of hierarchy of regions. The current dynamic process of globalisation is for example accompanied by the increasing concentration of administrative functions into the core, which can intensely strengthen the importance of the mezzo-regional core that is macro-regional periphery at the same time (Havlíček, Chromý 2001). Post-industrial society prefers territorial concentration of progressive and administrative functions (change of agents of space polarisation mechanism) and on the other hand also the development of modern information technologies (the internet, mobile phones and other) that on the contrary help to integrate "problem" (marginal, peripheral) regions into the regional system.

The evaluation of factors of objective character through multidimensional statistical analysis has demonstrated that the "peripherness" is the feature of the areas occurring as in border areas as in inland in Czechia (Marada 2001; Havlíček, Marada 2004). Thus we can distinguish "*inner peripheries"* situated in inland (often along the borders of administrative regions) from "*outer peripheries"* lying along the state borders of Czechia.

DEVELOPMENT OF SPACE POLARISATION

The occurrence of problem regions in the territory of Czechia has its historical roots. These can be find first in the development of settlement structure – colonisation processes in the Middle Ages and in modern times, mainly in the connection with industrial, agricultural, transport and demographic revolutions and/or industrialisation (forming of industrial regions) and the concentration of population into cities (urbanisation) since the first half of the 19th century. These processes deepened the regional differentiation of the territory of Czechia and consequently led to the sharpening of the dichotomy between more developed northern and less developed southern part of the republic being obvious up to now. The role of the development of transport system (firstly railroad, roads and motorways then in the 20th century) at deepening of differences among regions (namely particularly on the lowest – micro-regional level) cannot be neglected.

The impact of the processes of general character has led to forming of several main zones of concentration and exposed areas and developmental zones/axes (Hampl, Gardavský, Kühnl 1987). The important (specific) interference in the development of the settlement system have been the events connected with the Second World War particularly the post-war transfer of the Czech Germans and consequent insufficient resettlement of the borderland amplified by the origin of the so called Iron Curtain. Besides destruction of hundreds of settlements the mentioned events have projected themselves not only into the quantitative (low population density) but also to the qualitative state of the borderland (the population show different demographic characteristics – by age, the level of education, religion and the like) compared to inland.

The differences inside borderlands have become more apparent from economic point of view. On the one hand there has been significant support of "industrial" borderlands (north-western and northern Czechia) and on the other hand there has been even bigger

decline of traditional (poor) „agricultural" and/or „rural" borderlands (e.g. Šumava, the Czech-Slovakian borderland). Socialistic industrialisation and artificial levelling of differences among regions, directed by the state, helped the reduction of differences.

The change of political system after the year 1989 and the impact of the processes of transformation have proved also by the change of geographical differentiation of the territory. The fall of artificial barriers and increasing importance of neighbourhood of Czechia with the countries of the EU brought about the cardinal turn in the tendencies of polarisation. Deepening of macro-regional polarisation namely in view of the position of individual areas towards the core areas of the EU can be seen in the period of transformation. The micro-regional polarisation is getting weaker. A new process, touching particularly the peripheral areas in the hinterlands of great cities, is suburbanisation. Limited and/or regulated flat market, and traditional conservative approach of inhabitants to labour migration slow down the deepening of regional differences.

Long-term and complicated development of geographical organisation of Czechia has led to the forming of core and peripheral areas of various levels and types. Problem areas, called by Hampl (2003) "old", "classic", "rural" peripheries and peripheries "new" or "industrial" have originated.

Thus the typology of peripheral areas can be created also according to the types of problems they are struggling with. The first group is formed by the areas economically weak, of which the below-average level of industrial development has been influenced by worse natural conditions over the course of centuries and consequently by lower productivity of agriculture as well. Besides the borderlands (e.g. the Jeseníky region, Šumava) often also areas of "inner" peripheries (the region of Vysočina, the boundary of the middle and southern Czechia, southern and western Czechia; Musil 1988; Jančák 2001) are concerned. The second group is formed then by the peripheries formed in the connection with the transfer of original inhabitants and the decline of industrial base during the 20th century. These are some structurally affected industrial agglomerations (e.g. North-Bohemian basin, Ostrava region), where the high rate of unemployment is the main problem nowadays.

USE AND POSSIBILITIES OF DEVELOPMENT OF PERIPHERAL AREAS

Problem areas seem to be particularly rural, economic weak areas from the land use potential and possibilities of development points of view. Right their landscape is often under various levels of protection (national parks, protected landscape areas, biospheric reserves, but also natural parks) while facing various pressures of commercial sphere. The tension, which can be understood in the sense of the core-periphery polarisation (on institutional level) sense increases here. While the municipalities and the population in the peripheries solve economic problems and the deficiency of employment opportunities and welcome the interest of investors, the centre presented by central bodies of the state administration (the bodies of the landscape and the environment conservation in particular) try to maintain the current state. Thus the municipalities meet restricting of activities the nature and the landscape conservation represented for them the barrier in their development. Considering the fact that peripheral regions mostly demonstrate also higher con-

centration of recreational buildings for the second housing (Fialová 2001) predominantly used by the inhabitants of the centres, the tension on the level of human relations (local population versus holidaymakers) can increase as well. Even more difficult situation arises in the areas, of which the future use is in connection only with agricultural activities (with a low potential for recreational use). Right here, particularly in the sector of agriculture, the problems in the sense of traditional economic activities arise. Two processes of land use changes can be recorded in peripheral regions in the period of transformation after the year 1990 as well. These are conducted and non-conducted grassing over. Conducted grassing over, thus changing arable land into wasteland, is demonstrated by the change of the culture (significant decrease of arable land in favour of the permanent grasslands). Farmers obtain subsidies mainly from European sources and they are forced to take care of the landscape in a new state. They however often understood this process as the pressure of the centre. The land lying fallow is still registered as arable but farmers don't cultivate it from economic reasons. The higher stage of this process is a gradual afforestation evident for example in the areas situated in higher altitudes (The White Carpathians). This process cannot be observed however through the analysis of the land use data it is obvious from the "land cover" researches using the method of the direct field mapping or aerial photography evaluating. Similar pressure can be expected also in the areas with a specific regime – military training areas. Also these arouse predominantly in peripheral areas and/or areas sparsely populated, possibly in the areas insufficiently resettled after the transfer of the Czech Germans. Therefore it is legitimate to ask a question, how these areas, frequently valuable from natural point of view, would have developed in case the conducted regime had been released and the areas of today's military training areas had become the part of regional structures. Being aware of the fact that these areas are not of a little extent (e.g. Doupovské hory, Brdy, Boletice) it is supposable that the total area of problem regions would become even greater.

REFERENCES

Bičík, I., Chromý, P., Jančák, V., Jeleček, L., Kupková, L., Štěpánek, V., Winklerová, J. (2001) Land Use/Land Cover Changes in Czechia over the past 150 Years – An Overview, in Himiyama Y., Mather A., Bičík I., Milanova E. V. (eds.), *Land Use/Cover Change in Selected Regions in the World*.,Vol. I, Part IV, Issued by IGU SG LUCC, IGU-LUCC Research Reports IL-2001-01, Institute of Geography, Hokkaido Univ. of Education, Asahikawa, 29–39.

Bičík, I., Chromý, P., Jeleček, L., Kupková, L., Šefrna, L. (2002) *Comparison of land use changes in and outside biosphere reserves in Czechia*, in Himiyama Y., Hwang M., Ichinose T. (eds.), *Land Use Changes in Comparative Perspective*, Chapter 19. Oxford & IBH Publishing, New Delhi, 249–258.

Fialová, D. (2001) Druhé bydlení a jeho vztah k periferním oblastem, *Geografie – Sborník ČGS* 106, 1, 36–47.

Hampl, M. (2003) Diferenciace a zvraty regionálního vývoje Karlovarska: unikátní případ nebo obecný vzor? *Geografie – Sborník ČGS* 108, 3, 173–190.

Hampl, M., Gardavský, V., Kühnl, K. (1987) *Regionální struktura a vývoj systému osídlení ČSR*, UK, Praha.

Havlíček, T., Marada, M. (2004) *Územní diferenciace v Česku*, in Jeřábek, M., Dokoupil, J., Havlíček, T. et al. (eds.) *České pohraničí – bariéra nebo prostor zprostředkování?* Academia, Praha, 103–114.

Chromý, P., Jančák, V., Winklerová, J. (2003) Land use changes in the peripheral regions of Czechia, *Acta Universitatis Carolinae – Geographica*, XXXVIII, 1, 2003 (printed in 2005), 95–103.

Chromý, P., Janů, H. (2003) Regional identity, activation of territorial communities and the potential of the development of peripheral regions, *Acta Universitatis Carolinae – Geographica*, XXXVIII, 1, 2003 (printed in 2005), 105–117.

Jančák, V. (2001) Příspěvek ke geografickému výzkumu periferních oblastí na mikroregionální úrovni, *Geografie – Sborník ČGS* 106, 1, 26–35.

Leimgruber, W. (1994) *Marginality and marginal regions: problems of definition*, in Chang-Yi David Chang (ed.), *Marginality and Development Issues in Marginal Regions,* Proceedings of Study Group on Development Issues in Marginal Regions. IGU, Taipei, 1–18.

Marada, M. (2001) Vymezení periferních oblastí Česka a studium jejich znaků pomocí statistické analýzy, *Geografie – Sborník ČGS* 106, 1, 12–24.

Marada, M., Chromý, P. (1999) Contribution to studies on Peripheric Regions of Czechia, *Acta Facultatis Rerum Naturalium Universitatis Comenianae,* Geographica Supplementum, 2/I, Univerzita Komenského, Bratislava, 241–255.

Musil, J. (1988) Nové pohledy na regeneraci našich měst a osídlení, *Územní plánování a urbanismus* 15, 2, 67–72.

ACKNOWLEDGEMENT

The contribution has been written in the frame of the grant project of GA CR No. 403/03/1369 "Peripheral regions of Czechia as a part of the space polarisation in the connection of European integration".

EUROPA XXI
2006, 15: 35–41

IDENTIFICATION OF REGIONS OF TRANSPORT MARGINALITY IN SLOVAKIA

MARCEL HORŇÁK

Department of Human Geography and Demogeography Comenius University
Faculty of Natural Sciences
Mlynská dolina, 842 15 Bratislava, Slovakia
e-mail: hornak@fns.uniba.sk

Abstract: Though in some regions in the west and south-west Slovakia a launch of rapid economic development has been observed in recent years, most of the regions located in the rest of the country´s territory still remain in an economic and social depression. One of the reasons is their transport position within the country, as well as within the major transport networks. Some of the weak regions suffer with low quality of their own transport infrastructure and bad accessibility towards major centres and transport routes. We will show regions of transport marginality according to a set of selected indicators.
Key words: transport infrastructure, accessibility, marginality, peripherality

INTRODUCTION

Territorial differences in dynamics of economic development as well as life-quality aspects in Slovakia have become a frequent issue of Slovak human geography. Transport infrastructure is highlighted as one of the key factors causing growth of regional disparities in territory of the Slovak Republic.

Concerning the issues of regional disparities´ growth closely related to geographical position, discussions on spatial marginality or peripherality occur frequently. Hurbánek (2004) emphasizes the need to differ between the terms “peripherality” and “marginality” in a more detailed interpretation. However, it is also possible to see them as syno-

nyms. This is how we intend to deal with the two above mentioned terms in the following paper.

Leimgruber (1994) defines four elementary approaches to identification of marginality (or peripherality): geometric, ecological, economic and social. Economic aspect of marginality can be derived from the production potential, accessibility, infrastructure (including transportation networks), attractivity and some other factors. Relationship between transport infrastructure and marginality is very close, although the term "transportation marginality" is very rare in scientific studies. Reffering to Leimgruber´s study, the view on the economic marginality can be focused on accessibility of transport networks, thus transportation marginality can be derived from the position towards the key elements and lines of transportation networks. We do not intend to introduce a definition of "transport marginality", our intention is to pay attention to the fact that an unfavourable accessibility of major transport infrastructure can significantly add to economic marginality. Using the values of accessibility towards a set of selected transportation elements, we will indentify the regions within Slovakia with unfavourable position towards international and inter-regional transportation networks.

It is almost impossible to identify direct effects of transportation infrastructure on economic and social development, however, it seems that there exists a correlation between investments into major transportation infrastructure (or position of supra-regional transportation networks, respectively) and dynamics of economic indicators, such as per capita GDP or unemployment. However, this correlation can also result from the historical agglomeration process (NFPFFG 2000).

In Slovak scientific studies we find several authors who perceive the issue of marginality in horizontal aspect. Pašiak, Gajdoš and Falťan (2001) identified a group of marginal regions in the territory of Slovakia, according to selected social, economic and spatial indicators. We can name also several Slovak geographers who either deal with the marginal or peripheral regions from the aspect of economic problems and social particularities of these regions (Spišiak 1999) or pay attention to cross-border cooperation in peripheral regions of Slovakia (Halás 2005). Hurbánek (2004) focuses on some theoretical aspects of marginality/peripherality in relationship with definitions of rural space.

IDENTIFICATION OF REGIONS OF TRANSPORT MARGINALITY – METHODOLOGY

The aim of the analysis is identification of marginal regions of Slovakia based on their position towards major transportation networks. For this purpose, we used quite simple indicators of accessibility towards a set of selected elements of transport infrastructure. All existing types of transport infrastructure have been considered, with exception of pipe-line transportation which represents very specific means of transport with no (or very low) direct effect on social and economic development of regions.

The following transportation networks of Slovakia were used in the analysis (the networks outside Slovakia were not considered):

- Arterial railways (double-track electrified lines)
- Highways and express-ways
- Public river-ports

- Public airports
- Combined-transport terminals

Location of principal linear and nodal elements of transportation networks is a result of several factors (natural conditions, historical urban development, etc.). It is impossible to locate the principal international/inter-regional transportation networks in every region. Better accessibility of transport infrastructure will have a positive effect on regional development however the spatial impact of principal transportation infrastructure elements usually reaches far behind the regions of their location.

Our territorial analysis was based on administrative territorial division of Slovakia into 79 districts valid from 1996 to 2003, although we are aware of the fact that this territorial division does not respect natural transport regions and daily urban systems, which has been criticised by various experts including geographers. However, the districts serve as statistical regions which, also enables an easy convertibility into GIS.

Two modifications were made in the above mentioned territorial division of Slovakia, respecting needs of the submitted analysis: a large Bratislava region was created from the area of Bratislava city (consisting of urban districts Bratislava I – V) and the rest of Bratislava County (districts of Malacky, Pezinok and Senec) and a large region of Košice was created analogously (Košice-okolie and urban districts of Košice I – IV). Finally, we analysed 68 regional units, of which 66 are equal to relevant statistical districts. Due to this step, we have moved away a bit from the territorial division into districts, that is why more neutral term "region" is going to be used in the following text instead of "district".

To identify the position of the regions towards transport infrastructure, we used indicator of the shortest metric distance (in km, along roads or railways) of each region from the nearest element (line, node) of each transport infrastructure network. For measurement of the distances, former administrative centres of districts were used. These centres represent residential and economic cores of the regions (former districts). In disputeble cases, we used other criteria, such as population size or intra-regional transport position.

Accessibility of principal railways was measured on railway tracks in case of airports road distance was used. In case of river ports and combined transport terminals, we applied arithmetic mean of road and railway distances (where possible; for regions without railways only road distances were utilized). In disputable cases (e. g. when the shortest distances along roads and railways showed two different aiports) we applied the lowest arithmetic mean of both road and railway distances to identify the nearest infrastructure element.

The network of highways and express-ways in Slovakia requires a specific approach because it is still discontinuous at the present stage, represented by several disconnected sections. A large continuous highway system has been completed so far only in western Slovakia, including several sections of the D1, D2 and D4 highways and R1 express-way (272 km in total in 2003), spreading from border lines on Czechia, Austria and Hungary in western and southwestern directions and reaching to Ladce in the north and Nitra in the east. This large system represents an important element in international and inter-regional transport, thus plays a crucial role in economic development of adjacent regions. In central and eastern Slovakia, only several separated sections of highways and express-ways are in operation. Accessibility of highways and express-ways (both types can be

considered as equal) was measured by two indicators. The first one indicates distance to the nearest highway/express-way section (at least 20 km long). The second indicator shows accessibility of the large continuous highway system in western Slovakia (described above). As the final indicator, representing general accessibility of highways/expressways, we used arithmetic mean of both values.

Generally, existence of a certain transport infrastructure in a region means, that the region was given the value 0 km. A value (in kilometres) equivalent to the shortest distance from a certain transport infrastructure element was assigned to region where the respective type of infrastructure is missing. The values for the group of 68 regions were transformed into a scale reaching from 0.00 to 100.00 for each type of transport infrastructure. In the scale, the value 100.00 was assigned to region with the best accessibility value, and vice versa, the value 0.00 to region with the most unfavourable accessibility value. The other regions were given values from the interval between 0.00 – 100.00. The following equation was used to standardize the values:

$$h_{xi} = [(x_{i\ max} - x_i) / (x_{i\ max} - x_{i\ min})] .100$$

where: x_i is the value of accessibility for region i before standardization, $x_{i\ max}$ a $x_{i\ min}$ are the highest/lowest values of the accessibility parameter and h_{xi} is standardized value of the parameter for region i; i reaches from 1 to 68 (= number of regions).

Thus each region was characterized by a set of 5 parameters with each one, representing accessibility of a certain type of transport infrastructure.

RESULTS OF THE RESEARCH

Each of 68 regions of Slovakia was characterized by a synthetic value, created as an arithmetic mean of parameters 1 – 5 for each region. The synthetic values lie within the interval of 15.40 (for Medzilaborce region) to 100.00 (Bratislava region). According to the level of the synthetic value, the regions were divided into 5 categories. The territorial units with synthetic values equal to 40.00 and less can be considered as regions of strong transport marginality, the regions with values within the interval 40.01–60.00 as regions with indications of transport marginality (see Figure 1).

The regions of strong transport marginality form a vast territory in southern part of central Slovakia (regions of Veľký Krtíš, Lučenec, Poltár, Rimavská Sobota, Revúca) and in north-eastern Slovakia (Bardejov, Svidník, Stropkov, Medzilaborce, Humenné, Snina and Sobrance). These regions have a peripheral position towards important transport corridors and suffer with low quality of their own intra-regional transport networks, with no highways and underdeveloped (or absent) railways inadequately connected to the major railway lines. Regions of Poltár, Stropkov and Medzilaborce stay separate from the 1st class roads network. Regions of transport marginality lie in a periphery of the country, which is even strengthened by the fact that neighbouring regions of Hungary, Poland and the Ukraine have also a peripheral position in these countries. From this aspect, the most difficult seems to be the position of north-eastern Slovakia. Moreover, all these regions lie far from the pan-European multi-modal corridors which handicaps them in any at-

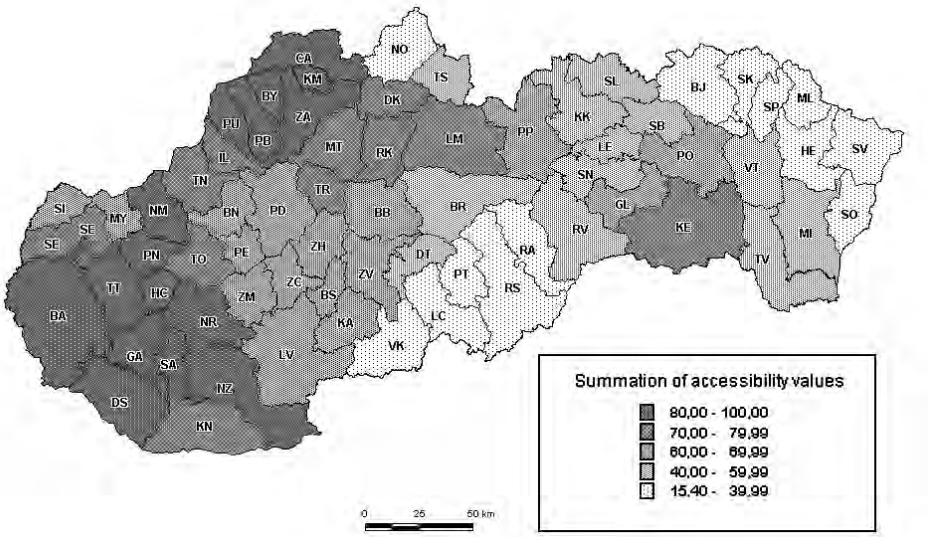


Figure 1. Accessibility of selected transformation networks in Slovakia (2003)

tempt to apply for state or EU financies for major infrastructure development and shifts a complete modernization of their transport networks into a very far future.

In the category with values between 40.01 – 60.00 we can find several regions of central Slovakia (Tvrdošín, Brezno, Detva) but eastern Slovakia predominantly (Kežmarok, Stará Ľubovňa, Levoča, Sabinov, Spišská Nová Ves, Rožňava, Vranov nad Topľou, Michalovce a Trebišov). These regions are remote from the important transport corridors, but they have quite favourable accessibility towards the major transport lines.

Both above mentioned categories of regions are concentrated in southern and northern parts of central Slovakia and in northern, north-eastern and eastern part of eastern Slovakia.

Transportation networks in the southern part of central Slovakia in territorial belt from Levice to Rožňava used to be effected by a historical fragmentation in the 19th and 20th centuries. This resulted into a relatively slow economic development of these regions. Neither the socialist period brought any shift towards improvement of transportation linkage of this territory with western Slovakia and Bratislava, although this territory offers magnificent position and favourable morphological conditions for establishment of a corridor connecting Bratislava and Košice, which was highlighted by Slovak geographers (Podhorský 1974: Bašovský, E. Povincová, E. Hvožďarová, L. Hagara 1987; M. Lukniš 1985) and also by official governmental documents guiding regional economic and urban development of the country in the socialist era (*Projekt urbanizácie SSR*, 1983 update). After 1989, the discussion on so-called "south corridor" connecting Bratislava and Košice was re-opened again. With general economic and social underdevelopment and vulnerability of southern regions of central Slovakia, there appears a need of an ef-

ficient transport Bratislava – Košice axis led through this territory which could also play an important role in east – west communication networks in Europe (Paulov 1996).

Correspondingly, the northeastern territory of Slovakia suffers with the peripheral position. This area was neither in the existence of Austro-Hungarian Empire, nor during the socialist period properly equipped with railways, which brought about (together with other factors) a retardation of economic and urban development. Its position in the neighbourhood of peripheral regions of Poland and the Ukraine is the reason why this territory has not been very attractive for principal international corridors.

In the north of central Slovakia one can find slightly isolated Orava region with unpropitious transport position, mostly due to morphological reasons (mountain barrier in the south part of Orava). The Orava region has always been a peripheral area, strongly underindustrialized yet in the 1950s, although lying not far from the prestigious historical Košice-Bohumín railway.

We can sum up common features of regions of transport marginality in Slovakia as follows:

- peripheral position within the country,
- adverse accessibility of arterial raiways or total absence of railway network,
- adverse accessibility of highways/express-ways, underdeveloped 1st-class road network,
- adverse accessibility of river-ports, combined-transport terminals,
- position apart from pan-European multimodal corridors,
- shortage of investments into major transportation infrastructure development,
- neighbourhood of underdeveloped regions of Poland, Hungary and the Ukraine with low quality of transport infrastructure.

CONCLUSION

The submitted analysis has shown a long-lasting transport peripherality of certain regions of Slovakia. This peripherality has predominantly historical roots however it was reinforced in the period of socialist industrialization and urbanization. Today, construction of highway and express-way networks is presented as one of the solutions that can improve position of the peripheral regions. Nevertheless, it is very difficult to guide domestic or foreign companies and force them to invest into transport infrastructure in regions with low capital returnability. Contemporary dynamics of economic development in regions of southern or northeastern Slovakia, as well as low traffic loads in these territories do not guarantee a quick returnability of investments into major transport infrastructure. This is the reason why development and modernization of transportation networks in these regions is predominantly in the hands of the state government.

REFERENCES

Bašovský, O., Povincová, E., Hvožďarová, E., Hagara, L. (1987) Juhoslovenské okresy v širšom geografickom kontexte a potenciál ich ďalšieho rozvoja, *Acta Facultatis Rerum Naturaliu Universitatis Commenianae*, *Geographica* 27, Bratislava, 15–52.

Halás, M. (2005) *Cezhraničné väzby, cezhraničná spolupráca (na príklade slovensko-českého pohraničia s dôrazom na jeho slovenskú časť)*, Univerzita Komenského Bratislava.

Hurbánek, P. (2004) Zmeny úlohy priestorového aspektu v interpretáciách pojmov periférnosť (marginalita) a vidiek, *Geografie a proměny poznání prostorové reality,* Ostravská univerzita, Ostrava, 102–110.

Leimgruber, W. (1994) *Marginality and marginal regions: problems of definition*, in Chang-Yi, David Chang-Sue-Ching, Jou-Yin-Yuh, Lu (eds.), *Marginality and development issues in marginal regions*, Proceedings, 1–7 August 1993. National Taiwan University and International Geographic Union, Taiwan, 1–18.

Lukniš, M. (1985) Regionálne členenie SSR z hľadiska jej racionálneho rozvoja, *Geografický časopis* 37, 2–3, SAV Bratislava, 137–163.

National Focal Points of Finland, France and Germany (2000) *Study Programme on European Spatial Planning,* Working Group 1.1, Geographical Position, Final Report, Part 1.

Pašiak, J., Gajdoš, P., Falťan, Ľ. (2001) Regional Paterns in Slovak Development, *Central Europe in Transition: Towards to EU Membership*, Regional studies association. Warszawa, 330–363.

Paulov, J. (1996) The Transformation Process in Slovakia: Some Thoughts on Spatio-Temporal Regularities, Regional Pattern and Possible Regional Shift, *Acta Facultatis Rerum Naturaliu Universitatis Commenianae*, *Geographica* 37, Bratislava, 112–121.

Podhorský, F. (1974) *Doprav*a, in Plesník, P. et al. (eds.), *Slovensko. Ľud – part I.*, Obzor, Bratislava, 183–210.

Projekt urbanizácie SSR, 1st update, 1983 URBION, Bratislava.

Spišiak, P. (1999) Poľnohospodárstvo v marginálnych oblastiach (na príklade Belych Karpát), *Acta Facultatis Studiorum Humanitatis et Naturae Universitatis Prešoviensis, Prírodné vedy, Folia Geographica* 3, 199–203.

ACKNOWLEDGEMENT

This work was supported by Science and Technology Assistance Agency under the constract No. APVT-20-016704.

EUROPA XXI
2006, 15: 43–49

ACCESSIBILITY OF PERIPHERAL REGIONS: A CASE OF CZECHIA

MIROSLAV MARADA and TOMÁŠ HUDEČEK

Faculty of Science, Charles University in Prague
Albertov No. 6, 128 43 Prague 2, Czechia

Abstract: This paper presents the accessibility of peripheral regions in the Czech Republic after the period of transformation, which caused the differences between the core and the peripheral regions even on the micro-regional level. The tendency of development and regional differentiation of individual car transport and public transport have been also taken under consideration.

Key words: Czech Republic, peripheral regions, accessibility

INTRODUCTION

Accessibility is one of the crucial points connected with the issue of peripheral regions. During the transformation period the process of concentration of services, production and other activities became more dynamic and will be further contributing to the increase of the differences between the core and the peripheral regions. The spatial polarization will increase even on the micro-regional level. When there is a lack of job opportunities and absence of basic services in the place of their residence, it is becoming more and more necessary for the inhabitants to commute, and accessibility becomes one of the most important requirements for the life in peripheral regions. In this broad sense of meaning accessibility is also defined by Hoyle&Knowles 1998 as a possibility of getting to the desired place. From the psychological point of view the travel time is more important than the travel distance. For example, the commuting from nearby villages to Prague is influenced by the existence of high-speed transport networks (especially motorways and major railway lines) rather than the distance between the villages and the capital (Vondráčková 2004).

In peripheral regions there is higher demand for accessibility than in cities in the sense of the necessity of journeys made to provide for basic needs of the inhabitant. On the other hand, the number of inhabitants demanding accessibility is low, which causes non-rentability of public transport serviceability. Therefore, passenger transport by trains and buses is economically least effective in the regions of fragmented settlement, where there was the biggest drop in bus passenger transport during the transformation period (Pirochta 1996; Jansa 2004 and others). It can be assumed that the decreasing quality of public transport service in peripheral regions will be with higher frequency replaced by individual car transport, or other alternative methods of service (e.g. municipal taxis, micro buses etc.). The tendency should show itself in the automobilization development, which should be higher in the peripheral regions for the reasons stated above. Nutley already discovered this relationship when researching rural regions of Great Britain and the USA (1996, 1998) and in Australia (2003) and this causality is probable also in Czech situation (Marada 2003a, 2003b). Higher automobilization can be also expected in "rich" metropolitan regions (for a case of Poland see Komornicki 2003). However, causes of higher automobilization differ in the regions stated above. In the first case it is caused by the necessity of ensuring basic needs. The second case is conditioned by the higher economical level of big cities. Therefore, both of these categories may differ greatly in the quality of the car fleet, i.e. the average age of cars and the "luxuriousness" of the car types.

DATA REVIEW AND MONITORING METHODOLOGY

The possibility to verify the hypotheses stated is strongly limited by the accessibility of data. Car quantities and the quality of the car fleet are currently registered in the Central Car Registry of the Ministry of Interior of the Czech Republic. Since the mid 1990s car registration has been performed by the District Traffic Inspectorates of the Czech Police and the overall inventory has not been declassified yet. Therefore, comparison of data concerning the whole Czech Republic could be done only for the years 1998–2005. The databases are available for districts, i.e. 77 administrative units of the state administration, from the years 1960–2002. Even though the delimitation of these units was not very organic and some of them do not correspond to the spontaneous "flow of the inhabitants", it can be considered as satisfactory for the evaluation of automobilization.

There is also the question of a reliability of the data mentioned. For example, the figure representing the average age of the cars in the districts is about 15 years, which indicates that a number of unused cars was probably included. The car owners must pay a fee required by law so-called motor liability insurance, which puts pressure on them to deregister the old and unused cars. However, data concerning the number of those who do not pay this fee are not available. Moreover, it is difficult to verify and amend the Central Car Registry data. The only further car-owner data source is the census taken every ten years, in which the number of cars owned is monitored in the section of household equipment. It is not possible to convert the number of households into the number of inhabitants and this data serve only as an outline. Even though the official registry data do not necessarily have to correspond with the actual state, the regional differentiation of

the degree of automobilization (see below) shows that the registry data are sufficient for relative comparison, give evidence about the basic trends and the regional differentiation, which is supplemented by further household analysis.

On the actual method of evaluation: All 77 Czech Republic districts were divided according to the density of population (as simple degree of peripherness) into three categories: twenty most heavily populated districts, twenty districts with the lowest density of population and other districts (37 units). Similarly, Czech districts were divided into three groups (20–37–20) according to economical level, namely according to so called economic aggregate, which serves as a replacement of an unavailable GDP for districts. The indicator is a product of the number of job opportunities and the figure standing for the average wage of the district (for more see e.g. Hampl 2005). When classifying the districts the economical aggregate value was relativized with regard to the average of the Czech Republic. Within the district categories mentioned the degree of automobilization for the years 1996 and 2005 was stated, together with its changes and the average age of the car fleet.

For better illustration, the classification of types according to density of population is shown in the maps of the regional differentiation of the monitored indicators by cross-hatching over the full-colour values.

REGIONAL DIFFERENTIATION OF AUTOMOBILIZATION WITH REGARD TO PERIPHERAL REGIONS

There was a dynamical growth in the number of cars in the Czech Republic during the transformation period. In simplified terms we can say that the 30-year development of the western developed countries was concentrated in the Czech Republic into ten years. The number of registered cars grew by 58 % since 1990. The degree of automobilization (number of inhabitants per one passenger car) grew from 4.3 in 1990 to 2.7 in 2004 (and in the capital city of Prague even to less than 2 inhabitants per one passenger car).

Figure 1 shows values for automobilization, i.e. nuber of inhabitants per one passenger car in one district (at January 1st, 2005). Index of change in automobilization over in the years 1998 to 2005 is shown in Figure 2. The comparison shows that the value for automobilization grew generally in all the districts but that Bohemia remains more automobilized than Moravia. It is not possible to look for an explanation in the necessity of accessibility and the wealth of the districts only but also for example in the inhabitants' scale of values. The effect of the contact diffusion of the lifestyle could also be taken into account because the south-west of the Czech Republic bordering with Bavaria was more automobilized even in the Communist era. Higher automobilization of rural regions (verified by Nutley (1998) in the case of Great Britain) is proved in general features by Table 1, which states the average degree of automobilization and the average age of the vehicles in groups of districts mentioned above, i.e. groups defined with regard to their economical level and their population density (as a simple, "crude" feature of periphery). It is obvious that the age of passenger cars in the group of economically most developed districts as well as in the group of central districts is lower than the Czech Republic average. Concerning the degree of automobilization the situation is different: In the "richest"

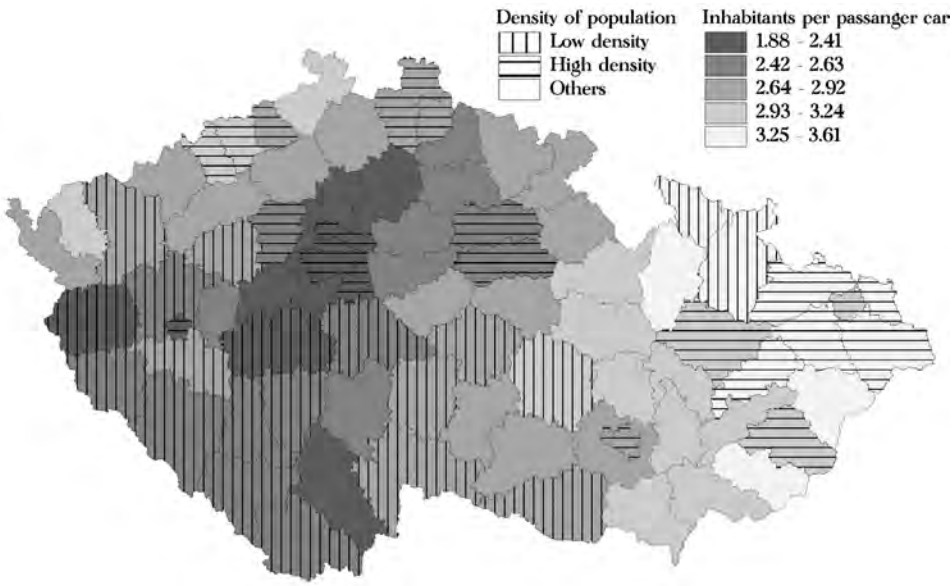


Figure 1. Automobilization of Czech districts in 2005

Source: Figures 1-3: Central Car Registry, Ministry of Interior of the Czech Republic, Czech statistical office

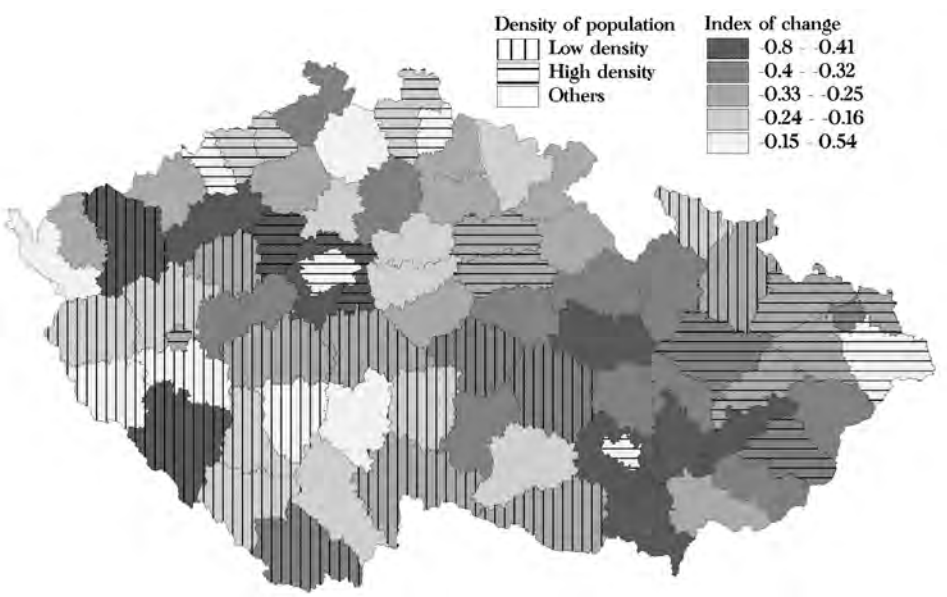


Figure 2. Index of change of the level of automobilization in Czech districts between 1998 and 2005

Table 1. Level of automobilization and age of car fleet according to density of population and economic aggregate

Group of districts	Average automobilisation in 2005	Average year of car production in 2005
20 districts with the lowest density of population	2.73	1990.65
Czechia	2.79	1990.99
20 districts with the highest density of population	2.87	1991.60
20 districts with the lowest economic aggregate	3.03	1990.75
Czechia	2.79	1990.99
20 districts with the highest economic aggregate	2.62	1991.50

Source: Central Car Registry, Ministry of Interior of the Czech Republic, Czech statistical office, Hampl 2005
Notice: Automobilization at January 1st, 1998 and January 1st, 2005; economic aggregate see Hampl 2005 and the text of the artilcle

districts it is naturally higher than the republic's average and higher than the value of automobilization of "poor" districts. On the other hand, the evaluation of automobilization with regards to the population density in districts with high population density we find out that it is lower than the republic's average and even lower than automobilization in districts with the lowest population density. Nevertheless, the correlative dependencies confirm this relationship only partially (Table 2) because close correlation exists only between the variable economic aggregate per capita and automobilization, while the relationship between population density and automobilization is independent. To conclude we could say that it is necessary to verify the discovered connections on the lower regional level because the district data almost always include values for the core of the district and Czech districts were often designated in an inorganic way. Further monitoring will be enabled for example by the mentioned data from the Population and Housing Census

Table 2. Correlation coefficient of selected indicators of Czech districts

Indicator	Density of population	Economic aggregate per capita	Average age of car fleet in 2005	Automobilization in 2005	Index of change of automobilization in 1998–2005
Density of population	1.000	0.740	0.446	-0.101	0.080
Economic aggregate per capita	0.740	1.000	0.554	-0.460	0.046
Average age of car fleet in 2005	0.446	0.554	1.000	-0.223	-0.099
Automobilization in 2005	-0.101	-0.460	-0.223	1.000	0.182
Index of change of automobilization in 1998–2005	0.080	0.046	-0.099	0.182	1.000

Source: Central Car Registry, Ministry of Interior of the Czech Republic, Czech statistical office, Hampl 2005
Notice: Automobilization at January 1st, 1998 and January 1st, 2005; economic aggregate see Hampl 2005 and the text of the artilcle

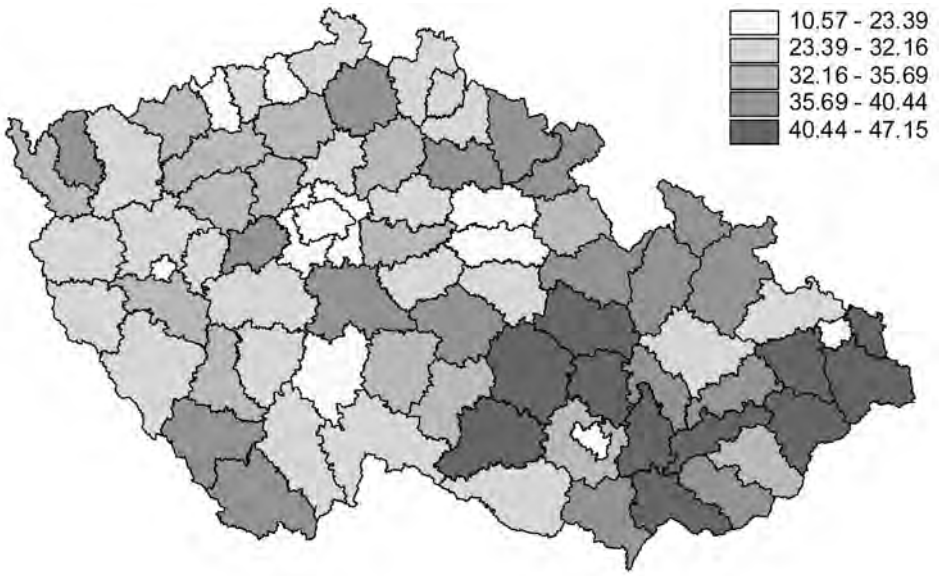


Figure 3. Share of commuters using public transport in 2001

2001, which includes the means of transport used for commuting to school and work. Examples for particular districts are shown in Figure 3 and it is obvious that public transport in Moravian districts is used more frequently than in Bohemian ones. This fact could also be connected with the differences in the lifestyle – a secondary condition for the degree of automobilization.

CONCLUSION

It can be presumed that the serviceability of peripheral regions by public transport will be stabilized or will worsen slightly. Because of the continuation of the concentration process it is necessary to keep the current transport serviceability at the same level, also because of the fact that some groups of population (e.g. children, elder people) depend on it (see also Taylor 2003). Authorities concerned should therefore consider alternative possibilities to ensure serviceability (like so called municipal taxis, buses on call, supporting of car-pooling etc.). Another solution is the transportation of services towards consumers. This means various mobile shops (quite common earlier in the rural areas) but also mobile libraries, dental surgeries, postal services etc. Without such creative solutions the inhabitants of peripheral regions will be more frequently forced to commute causing a drop in their quality of life.

REFERENCES

Hampl, M. (2005) *Geografická organizace společnosti v České republice: Transformační procesy a jejich obecný context,* Katedra sociální geografie a regionálního rozvoje, Přírodovědecká fakulta Univerzity Karlovy v Praze, Praha.

Hoyle, B., knowles, R. (1998) *Transport geography: an introduction*, in Hoyle, B., Knowles, R., (eds.) *Modern Transport Geography*, 2nd rev. ed., Wiley and sons, Chichester, 1–12.

Jansa, J. (2000) *Jansy Kvalita dopravní obslužnosti a její vztah k vybraným socioekonomickým jevům: Příklad Náchodska,* Diplomová práce, katedra sociální geografie a regionálního rozvoje, PřF UK, Praha.

Komornicki, T. (2003) Factors of development of car ownership in Poland, *Transport reviews*, 23, 4, 413–431.

Květoň, K. (2004) Změny dopravních poměrů na Jesenicku v průběhu transformačního období, *Ročníková práce*, Katedra sociální geografie a regionálního rozvoje, PřF UK, Praha.

Marada, M. (2003a), Dopravní hierarchie středisek v Česku: vztah k organizaci osídlení, *Disertační práce,* Katedra sociální geografie a regionálního rozvoje PřF UK, Praha, 116 p.

Marada, M. (2003b) Dopravní infrastruktura a hierarchie středisek v českém pohraničí, *Geografie – Sborník ČGS* 108, č. 2, Česká geografická společnost, Praha, 130–145.

Nutley, S. (1996) Rural transport problems and non-car populations in the U.S.A. A UK perspective. *Journal of Transport Geography* 4, 93–106.

Nutley, S. (1998) Rural Areas: Accessibility Problem, in Hoyle, B., Knowles, R., (eds.), *Modern Transport Geography,* 2nd rev. ed., Wiley and sons, Chichester, 185–215.

Nutley, S. (2003) Indicators of transport and accessibility problems in rural Australia, *Journal of Transport Geography* 11, 55–71.

Pirochta, P. (1996) Veřejná doprava a mikroregionální rozvoj, Diplomová práce, katedra sociální geografie a regionálního rozvoje, PřF UK Praha.

Seidenglanz, D. (2001) *Vývoj veřejné dopravy na příkladu okresů Šumperk a Jeseník*, in Novák, S. (ed.), *Geografické aspekty středoevropského prostoru – předpoklady vstupu ČR a SR do Evropské unie*, Sborník příspěvků z IX. ročníku konference, Sborník prací PedF MU, sv. 161, řada přírodních věd, č. 21, Geografie XII, Brno, 170–173.

Taylor, Z. (2003) *Accessibility to facilities versus daily mobility of rural dwellers: The case of Poland*, in Higgs, G. (ed.), *Rural services and social exclusion, European research in regional science* 12, Pion, London, 95–125.

Vondráčková, P. (2004) *Dálnice D8 a regionální rozvoj*, Ročníková práce, katedra sociální geografie a regionálního rozvoje, PřF UK, Praha.

Centrální registr vozidel – website Ministerstvo vnitra ČR, www.mvcr.cz.

Výsledky sčítání lidu, domů a bytů v roce 2001, 2003, Český statistický úřad.

EUROPA XXI
2006, 15: 51–61

ACCESSIBILITY OF THE RAILWAY NETWORK IN SLOVAKIA

DANIEL MICHNIAK

Institute of Geography, Slovak Academy of Sciences
Štefánikova 49, Bratislava 814 73
e-mail: geogmich@savba.sk

Abstract: The aim of this study is to point to the state of the railway network and the position of the railway transport in Slovakia; to assess the accessibility of the railway in terms of accessibility of the nearest railway station of passenger transport from the individual communes and to point to regional disparities in the matter. Regional disparities in railway accessibility were assessed based on the maximum distance from the commune to the nearest railway station and based on the mean weighted distance from the commune to the nearest railway station. The effect of closing the passenger transport on 15 regional tracks for the level of railway station accessibility was also assessed.

Key words: accessibility, railway network, railway station, multimodal trip, competitiveness, Slovakia

INTRODUCTION

Spatial movement or mobility as the capacity to move from one place to another is one of the basic activities of population determined by the need of humans to participate in varied activities dispersed in space. Such trips of individual inhabitants normally take place between the place of living (the starting point) and the place of activity (final point) while their nature is as a rule cyclic. The most frequent regular movement of cyclic character is commuting (to work or to school).

Many population's trips from one place to other in advance set place cannot be made as simple trips from the starting point to the final point – they consist of chain of movements. Such trips require a complicated process of selection and decision from different

transport modes with different transport cost and time. In this manner individual transport modes enter into relative competition. The key factors that determine the modal choice are time, price, reliability, and comfort (Gorter et al. 1999).

The existing distance between the starting and the final points can be overcome by means of unimodal (by car) or by means of multimodal transport which is normally the combination of walk and the public transport (bus or train). In this study we will focus on trips, part of which, is the railway transport and a special attention will be paid to the first part of such multimodal trip – the section starting at the place of living as far as the transfer point (node) which railway station is in this case.

Railway station is accessible on foot, on bicycle, a car, public transport or taxi. Each of these transports takes different time and the price differs as well. Meanwhile, these criteria are considered important for the choice.

The railway station is often the place where different transport modes connect and it also is the transfer point from one to another transport mode. The railway station also collects and distributes passengers. For the sake of competitiveness of the public transport with unimodal transport, the shortest time of transport from and to this transfer node and the shortest time possible for the transfer (interconnectivity of the individual transport ways are desirable) (Gorter et al. 1999). In this context, accessibility of the railway station is important.

M.J.N. Keier and P. Rietveld (1999) emphasized the importance of accessibility of the local railway station. The quoted authors consider the acceptable level of railway station accessibility as important factor for successful operation of rail services as the sufficient speed and reliability of the service. Apart from that, access to transport is also considered an important factor for measuring the peripherality of a region (*European Communities* 2004).

If the final point of the trip (for instance certain service) is the locality with high quality infrastructure, which is also accessible from other localities, it will presumably function better and consequently population will more frequently use it. Localities in the neighbourhood of the railway station can be more competitive than the localities in greater distance from the railway station because railway passengers use them.

M. Horňák (2004, 2005) is the author who dealt with accessibility of railway stations in Slovakia. He evaluated distribution of communes with the direct access to the railway (with railway station and passenger transport), while he included communes with the distance of 1.5 km to the nearest railway station in this group. Changes in population distribution in Slovakia with regards to the distance from the railway in 1921 and 1971 studied O. Bašovský and E. Majbová (1977). V. Székely (2004) assessed the relative accessibility of district towns within the railway network based on direct transport connections.

The aim of this study is to point to the state of the railway network and the position of the railway transport in Slovakia; to assess the accessibility of the railway in terms of accessibility of the nearest railway station of passenger transport from the individual communes and to point to regional disparities in the matter. Regional disparities in railway accessibility were assessed based on the maximum distance from the commune to the nearest railway station and based on the mean weighted distance from the commune to the nearest railway station. The effect of closing the passenger transport on 15 regional tracks for the level of railway station accessibility was also assessed.

RAILWAY NETWORK IN SLOVAKIA AND POSITION OF RAILWAYS IN PASSENGER TRANSPORT

The present railway network in Slovakia has developed during 150 years. Natural conditions of the country have greatly influenced the course of lines as did the changing economic and political conditions during the individual political systems that existed in the territory of what is today Slovakia (Austria-Hungary, the First Czechoslovak Republic, Slovak State during the Second World War, the period of socialism, disintegration of the Czechoslovakia, accession of Slovakia to the EU). Nowadays, the membership in the EU is the decisive factor, which manifests in modernization of tracks included into the pan-European transport corridors (Figure 1).

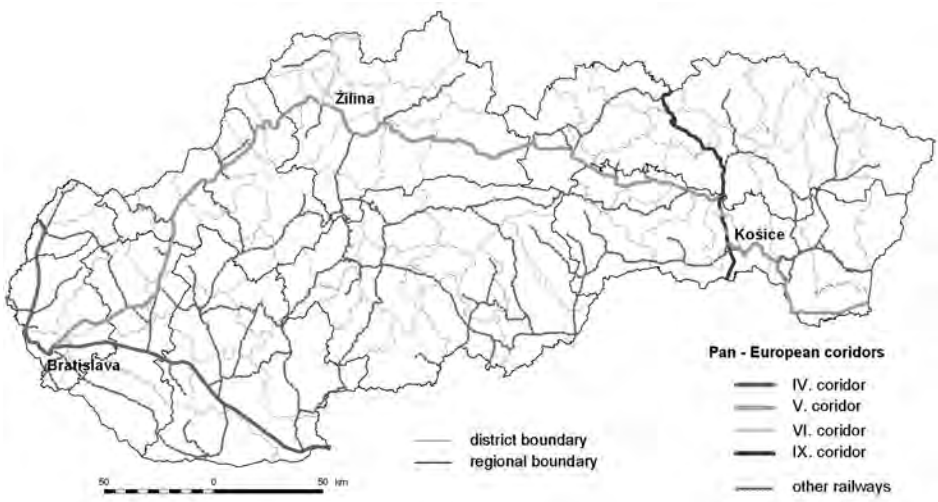


Figure 1. Pan-European transport corridors in the railway network of Slovakia

According to the Statistical Year Book of the Railway Company (*Železničná spoločnosť* 2005) in 2004 Slovakia had 3,660 km of railway lines including 2,640 km of single-track (72.1 %) and 1,020 km (27.9 %) of double and multiple track lines. Classified by the gauge, there are 3,510 km of lines with standard gauge (95.9 %), 100 km (2.7%) of broad gauge and 50 km of narrow gauge lines. The total length of lines includes 2,104 km (57.5%) of not electrified lines and 1,556 km (42.5%) of electrified lines (including AC 25000V/50Hz 737 km (20.1%) a DC 3000V (other) 819 km (22.4%)). The construction length of rails was total 6,881 km.

A comparatively dense network with obsolete technology can characterize infrastructure of the railway transport. The technical basis of the infrastructure is not adequately prepared for the changing conditions and structure of the transport market. This situation is the result of low technological level and quality of railway transport and of neglected maintenance (*Ministerstvo dopravy, pôšt a telekomunikácií Slovenskej republiky* 2006).

The most important change in passenger transport in 1989 is the increase of the individual transport to the detriment of the public transport (Figure 2). While in 1995 their performance was approximately at the same level, in 2004 the performance of public transport represented slightly more than a half of the non-public passenger transport. In public transport public road transport and railway transport experienced a significant decrease. In 1995-2004, the performance of the public railway transport decreased from almost 90 mill. to about 50 mill. passengers a year (see Figure 3).

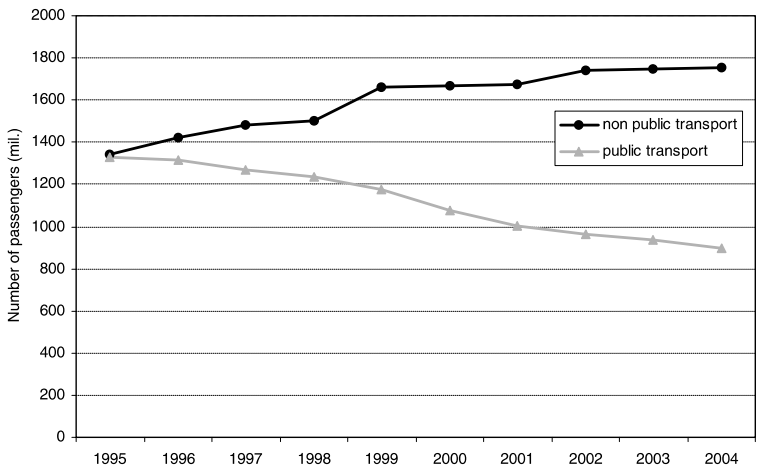


Figure 2. Performances of passenger transport (non public vs. public transports)
Source: http://www.telecom.gov.sk/externe/idic/index.html)

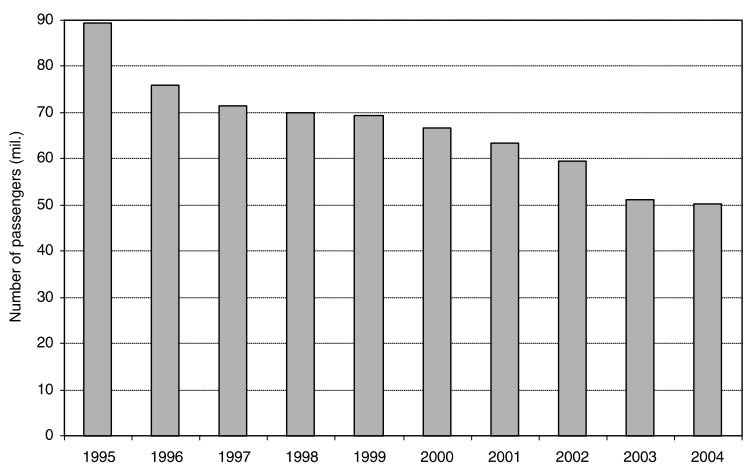


Figure 3. Performances of passenger railway transport
Source: http://www.telecom.gov.sk/externe/idic/index.html

ACCESSIBILITY OF THE RAILWAY NETWORK FROM THE INDIVIDUAL COMMUNES IN THE SR

Accessibility of the railway network from the individual communes in the SR was studied on the basis of the distance measured from the centre of the commune to the nearest railway station.

The distance from the commune to the railway station (RS) was computed as the shortest road distance from the commune centre (or the centre of its biggest part) to the nearest RS. Road distances applied were those quoted in the detailed road atlas of the SR at scale 1 : 100 000 (Vašek et al. 1999), where the length of the individual road section is quoted with the precision of 0.5 km. The shortest distance from the centre of the commune to the nearest RS was set at 0.5 km even if the RS was located right in the centre. The attractiveness of the RS (frequency of connections, position of the railway line in the railway network) was not taken into account in the assessment of their accessibility. Figure 4 and Table 1 represent the distribution of population by the distance to the nearest railway station.

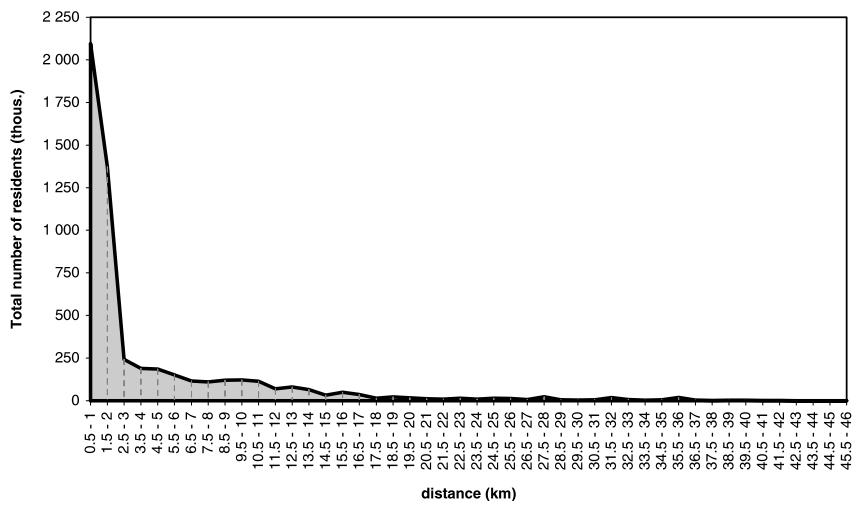


Figure 4. Distribution of residents according to distance to the nearest railway station

If the distance to the nearest railway station according to the distance categories is considered, it is obvious that the largest portion of residents lives in communes where the distance to the nearest RS is below 1 km (almost 39%) followed by the distance category 1.5 – 2,0 km (25.5%). It suggests concentration of population along the railway line with passenger transport. It is possible to conclude that in terms of accessibility, the system of railways seems to have a good prospective to attract passengers from communes with distance to the nearest RS up to 2 km. Three quarters of Slovak population (75.9%) live in the zone below 5 km and 87.5% live in the zone below 10 km. Residents with the distance

of at least 20 km to the nearest RS (3.3%) makes use of railways above all for irregular trips to a longer distance.

Table 1. Distribution of residents according to distance to the nearest railway station

Distance (km)	Number of inhabitants	Percentage of inhabitants
0.5–4.5	3 992 314	74.21
5.0–9.5	661 861	12.30
10.0–14.5	400 772	7.45
15.0–19.5	138 887	2.58
20.0–24.5	58 185	1.08
25.0–29.5	56 757	1.06
30.0–34.5	36 507	0.68
35.0–39.5	30 474	0.57
40.0–46.0	3 698	0.07

Distribution of residents according to the distance to the nearest RS (Figure 5) facilitates identification of potential use of the individual transport modes. In a case of regular travelling by means of railway transport the distance up to 1.5 km can be overcome on foot (cf. Horňák 2004), the distance up to 4.5 km by bicycle and the distance up to 9.5 km by public transport (bus). The distance of 10 km and more to the nearest RS is considered unsuitable from the point of view of railway accessibility for daily commuting. Hence, the residents living in such areas are compelled to use bus transport.

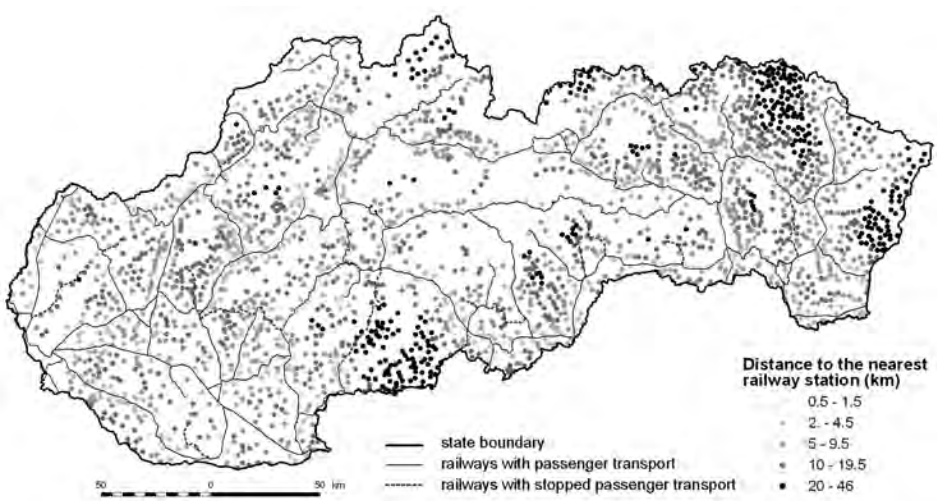


Figure 5. Distance from the commune centre to the nearest railway station

Based on the RS accessibility, the peripheral areas, which contain communes located in the distance of at least 10 km away from the nearest RS, can be identified. There are 1,013 such communes in Slovakia with total number of residents 725 thousand. All communes of districts Veľký Krtíš and Sobrance are at least 10 km away from the nearest RS. More than 90% of population live in communes with unsatisfactory accessibility of railways in districts Stropkov (99.2 %), Svidník (95.7 %) and Námestovo (94.3 %). More than a half of population in districts Krupina (80.5 %) and Levoča (58.9 %) live in the peripheral areas in terms of railway accessibility. On the other side, all population in districts Bratislava, Košice, and Spišská Nová Ves live in distance less than 10 km to the nearest RS.

A very adverse situation in terms of railway accessibility was found in communes that are 20 or more km away from the nearest RS. There are four big areas of this type in Slovakia: in the northern part of eastern Slovakia, next to the Ukrainian border, in the south-western part of central Slovakia and in the northern part of Orava region.

REGIONAL DISPARITIES IN ACCESSIBILITY OF RAILWAYS

Regional disparities in railway accessibility were assessed according to two indicators. The first indicator is the maximum distance between the commune and the nearest RS and the second is the mean weighted distance from the commune to the nearest RS while the number of inhabitants of the individual communes (data were obtained from Population Census 2001) was used as the weight. Regional differences were observed in 72 districts while Bratislava and Košice were considered independent districts although in fact they consist of 4 and 5 districts respectively. In case of Bratislava and Košice, the calculations of the two indicators were based on the division into 22 and 17 urban parts respectively.

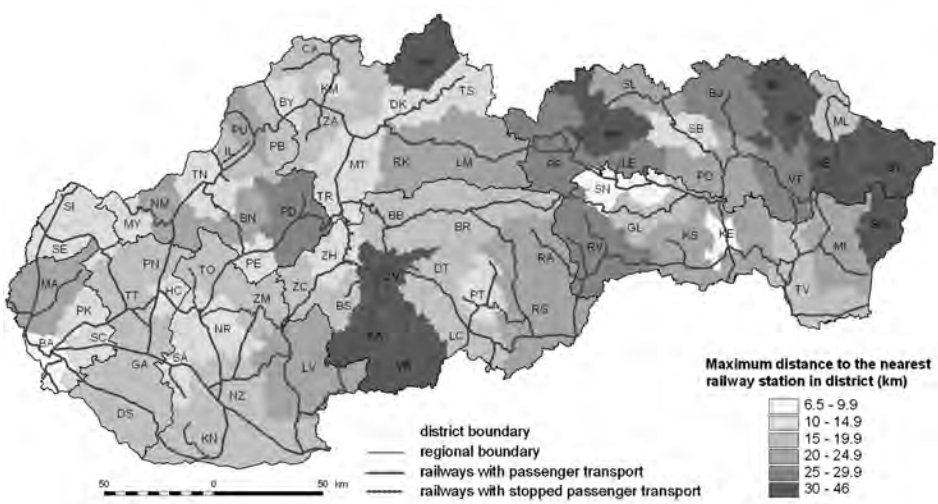


Figure 6. Maximum distance between the commune and the nearest railway station

The most favourable values of maximum distance between the commune and the nearest RS (see Figure6) are in smaller districts with railway lines such as Bratislava, Košice, Kysucké Nové Mesto, Partizánske, Turčianske Teplice, Tvrdošín, Myjava, Šaľa and other. On the other side, unfavourable values in railway accessibility were found in districts Sobrance, Humenné, Stropkov and Snina in the north-eastern part of Slovakia.

Communes with the shortest distance to the RS of at least 20 km were found in 29 districts; communes where this distance is at least 30 km are in ten districts and in two districts (Veľký Krtíš and Svidník) there are communes situated more than 40km away of the nearest RS. The absolutely remotest commune in terms of its distance to the RS is Havranec in district Svidník (46 km).

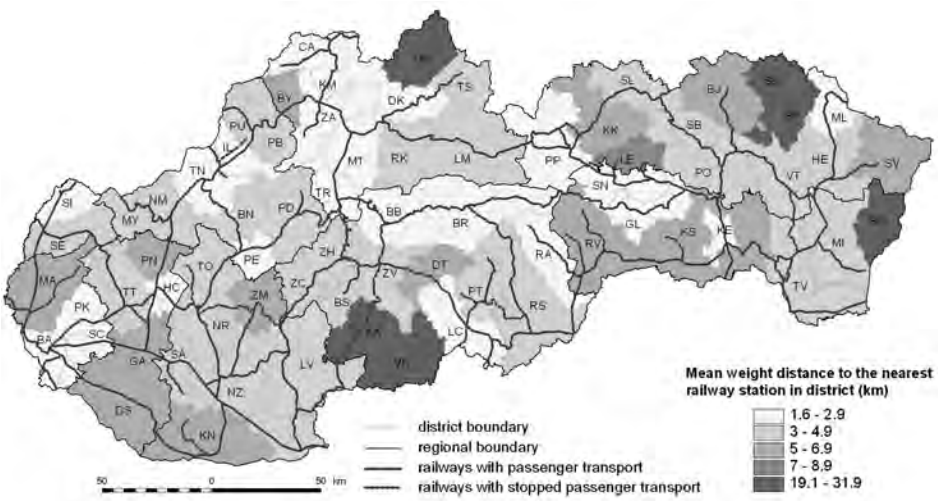


Figure 7. The mean weighted distance from the commune to the nearest railway station

The mean weighted distance represents the mean accessibility of the nearest RS for all district inhabitants (Figure 7). Unfavourable situation in the RS accessibility was found in district Krupina (19.1 km), where the passenger transport ends in town Dudince; then in four districts without railway lines Námestovo (22.3 km), Sobrance (23.5 km), Stropkov (25.2 km), Svidník (25.5 km) and also in district Veľký Krtíš (31.9 km), where the railway line between Slovakia and Hungary exists but it does not operate any passenger transport. Situation of district Levoča (8.9 km) and some bigger districts such as Malacky, Dunajská Streda, Galanta, Komárno, Rožňava, Košice-okolie, Snina is not favourable either. On the other side the best accessibility level of the railway is in region Bratislava and the central and western part of region Žilina.

THE INFLUENCE OF ABOLISHED PASSENGER TRANSPORT ON 15 REGIONAL LINES ON THE RAILWAY ACCESSIBILITY

In February 2003 the Railway Company (ZSSK) closed passenger transport on 25 regional lines while in three of them (Trenčín – Chynorany, Levice – Štúrovo, Zvolen – Čata) buses operated by the Railway Company replaced it. The reason of closure was their financial ineffectiveness. These changes along with the reduction of connections provoked strike of railway workers, which was stopped after several days by judicial order. Operation of lines Žilina – Rajec and Zohor – Záhorská Ves was re-opened after an agreement concluded with the higher administrative territorial unit who reimbursed the loss. In June 2003 ZSSK re-opened operation of 9 from 25 regional lines (Šaľa – Neded, Zlaté Moravce – Úľany nad Žitavou, Hronská Dúbrava – Banská Štiavnica, Plešivec – Muráň, Bánovce nad Ondavou – Veľké Kapušany, Trenčín – Chynorany, Levice – Štúrovo, Šahy – Čata, Žilina – Rajec) and the line Zohor – Záhorská Ves was run by the Bratislavská regionálna koľajová spoločnosť – Bratislava Regional Rail Company (Zachar 2004). But the Railway Company took over the operation of line Zohor – Záhorská Ves on 29 May 2006 and this was accompanied by harmonization of transport, i.e. elimination of bus connections that coincided with trains. These lines are: Zohor – Plavecký Mikuláš, Jablonica – Brezová pod Bradlom, Komárno – Kolárovo, Lužianky – Kozárovce, Zbehy – Radošina, Prievidza – Nitrianske Pravno, Nemšová – Lednické Rovne, Lučenec – Kalonda, Breznička – Katarínska Huta, Poltár – Rimavská Sobota, Plešivec – Slavošovce, Rožňava – Dobšiná, Spišská Nová Ves – Levoča, Moldava nad Bodvou – Medzev, Trebišov – Vranov nad Topľou.

The quoted changes in passenger transport also manifested in the decrease of the railway station accessibility in 25 districts. District Krupina suffered most from closed line, which passed through the whole district in the north-south direction. After this change, the maximum distance between a commune and the nearest RS increased by 22 km and the mean weighted distance from the individual communes to the RS increased by 15.3 km. An important drop of the RS accessibility level was also found in district Rožňava, where in the consequence of closure of two regional lines, the maximum distance increased by 13 km and the mean weighted distance by 3.8 km. Among districts, where these changes manifested most at the level of RS accessibility, are districts Levoča, Malacky, Myjava and Púchov as well.

Regional transport in Slovakia is characterized by a comparatively low quality. Investments went to facilities of the stations above all, instead purchase and renovation of trains. According to Zachar (2004) an efficient functioning of regional transport perhaps requires the transfer of decision-making competencies concerning train connections to self-governments that are able to control only the public bus transport as yet. Railway transport may also need entry of private capital.

CONCLUSION

Incessant decrease of performances of passenger railway transport has been observed recently in the consequence of increased individual car transport and after 2003 also closure of 15 regional railway lines. The main incentive that might interrupt this decline and encourage the development of the railway seems to be the modernization of tracks included into the pan-European corridors with the financial assistance from the EU – although it is a slow process. Along with modernization of trains and provision of passenger reductions, the Railway Company tries to maintain and increase the number of passengers.

Accessibility of railway, as one of important factor for successful operation of rail services, based on the distance between the individual communes and the nearest railway station was assessed in this study. Three quarters (75.9 %) of Slovakia's population live within 5 km distance to the nearest RS and mainly they have chances to make use of the railway for regular travelling. On the contrary, the 10 or more km distance to the nearest RS is considered not satisfactory from the point of view of daily commuting by train. Communes at least 10 km away from the nearest RS are considered peripheral in terms of the railway accessibility. Population living in such area is compelled to use bus transport. The worst railway accessibility, of course, was found in regions where the railway was not constructed (Námestovo, Svidník, Stropkov, Sobrance) and in regions lacking passenger service on existing lines (Krupina, Veľký Krtíš). Closure of passenger service on 15 regional lines in 2003 affected railway accessibility above all in districts Krupina and Rožňava.

The maximum distances to the nearest RS and the mean weighted distances between all communes and the nearest RS at the level of districts (used for the assessment of regional disparities in railway accessibility) can be used as partial quality of life indicators for population in individual districts.

An improved assessment of railway accessibility requires to take into account the position of the RS within the railway network – number of trains that stop at the particular station, number of passengers departing from the RS, etc. as the population instead of making use of the nearest RS may use one on a more important line, or the one with better bus connections. Further research should also assess the accessibility of railway stations where fast trains EuroCity or InterCity stop.

The decision about using railway or bus transport also depends on location of destination (place of human activity) with respect to the RS. If the destination is near a particular RS, the people are willing to go to a distant RS. But if the destination is in greater distance, people prefer to use bus transport as bus stops are more accessible than RSs. This is the reason why localities in the proximity of RS are more competitive that those that are in greater distance. Location of the living place near RS is therefore more advantageous for the regular use of railway transport and the same is true for location of destination.

This article was prepared as part of the project No. 2/6038/26 "Economic performance and competitiveness of localities and regions", funded by the Slovak VEGA Grant Agency.

REFERENCES

Bašovský, O., Majbová, E. (1977) Koncentrácia obyvateľstva SSR a problémy životného prostredia, *Acta Facultatis Rerum Naturalium Universitatis Comenianae – Formatio et Protectio Naturae II*, 27–42.

European Communities (2004), *Interim Territorial Cohesion Report* (Preliminary results of ESPON and EU Commission studies).

Gorter, C., Nijkamp, P., Vork, R. (1999) Analysis of Travellers' Satisfaction on Transport Chains, *Discussion paper TI*, No. 99-058/3, Tinbergen Institute, Amsterdam, 1–21.

Horňák, M. (2004) Rozmiestnenie obyvateľstva vzhľadom k železničnej sieti SR ako jeden z argumentov pre podporu rozvoja osobnej železničnej dopravy, *Acta Facultatis Rerum Naturalium Universitatis Comenianae – Geographica* 45, 27–37.

Horňák, M. (2005) Pokračujúca transformácia železničnej dopravy na Slovensku a niektoré jej dopady na regióny, *Národohospodářský obzor* 5, 4, 21–32.

Keijer, M.J.N. and Rietveld, P. (1999) How do people get to the railway station; a spatial analysis of the first and the last part of multimodal trips, *Research Memorandum* 9, Vrije Universiteit, Faculty of Economics, Amsterdam, 1–20.

Ministerstvo dopravy, pôšt a telekomunikácií Slovenskej republiky (2006) Operačný program Doprava 2007–2013, Bratislava.

Székely, V. (2004) Priame dopravné prepojenia okresných miest Slovenska, *Prace Komisji Geografii Komunikacji PTG* 10, 281–302.

Železničná spoločnosť (2005) Štatistická ročenka 2004, Bratislava (Železničná spoločnosť a.s.).

Vašek, J., Buday, R., Fábryová, M. (1999) *Podrobný autoatlas – Slovenská republika 1 : 100 000.* VKÚ (Harmanec).

Zachar, D. (ed.) (2004) *Reformy na Slovensku 2003–2004, Hodnotenie ekonomických a sociálnych opatrení,* Inštitút pre ekonomické a sociálne reformy, Bratislava, 75–77.

EUROPA XXI
2006, 15: 63–75

THEORETICAL PRECONDITIONS VERSUS THE REAL EXISTENCE OF CROSS-BORDER RELATIONS IN THE SLOVAK-CZECH BORDERLAND

MARIÁN HALÁS

Comenius University, Faculty of Natural Sciences
Bratislava 842 15, Slovakia
e-mail: halas@fns.uniba.sk

Abstract: The submitted article deals with a comparison of theoretical preconditions and cross-border relations in the Slovak-Czech. For a partial analysis of theoretical preconditions for cross-border relations, two basic indicators have been selected – transport communication through the border crossings and the settlement hinterland of the border region. For an analysis of the real existence of cross-border relations, the most important indicator is that of labour migration across the borderline. We try to present a final regionalisation of the Slovak part of the Slovak-Czech borderland synthesising the studied theoretical preconditions for and the real existence of cross-border relations.

Key words: cross-border relations, cross-border interaction potential, cross-border labour migration, Slovak-Czech borderland

INTRODUCTION

Cross-border relations represent a complex of all processes that are a result of the dependence of a territory from one side of the State border on the potential of a territory from the other side. A basic impulse for the creation of such relations rests on differences between the supply and demand of selected social-economic components of the geographic environment in the regions situated on both opposite sides of the border. These differences are thus a fundamental impetus to balance such disequilibrium as well as motiva-

tion for inhabitants to use a more advantageous supply of components from the other side of the border (free jobs, supply of goods and services and the like).

Our analysis of cross-border relations may be divided into two levels: the first is formed by potential (theoretical) preconditions for the existence of relations; the second one resides in a direct evaluation of the real state and development of cross-border relations. The application of both levels to the region of the Slovak-Czech borderland makes it possible to prepare its final regional characterisation. With respect to the asymmetric nature of cross-border relations in the studied region (the prevalence of relations in the direction from Slovakia to the Czech Republic) we try to make a regionalisation of the Slovak part of the Slovak-Czech borderland only in dependence of the intensity of relations towards the Moravian part. (Note: Because of local specificities we use a more frequent term "the Moravian [not Czech] part" of the Slovak-Czech borderland in the contribution.)

THEORETICAL BASIS

CROSS-BORDER INTERACTION POTENTIAL

In particular, the accessibility of centres from the other side of the border and their size structure is important for a detailed analysis of the potential creation of cross-border relations. Therefore, we use an interaction potential frequently applied to geography in order to evaluate theoretical possibilities of cross-border relations.

Let us define a set of basic territorial units $A = \{a_i; i = 1, 2, ..., m\}$ and a set of target territorial units $B = \{b_j; j = 1, 2, ..., n\}$. The theoretical number of moving entities (persons, goods, raw materials, information etc.) from a_i to b_j is denoted as T_{ij}. Then we may express a gravitational (interaction) hypothesis in its most simple form as follows (Paulov 1986):

$$T_{ij} = K.M_i.Q_j.f(d_{ij})$$

where K is a constant, proportionality coefficient; M_i is the mass (e.g. the number of inhabitants) of a basic territorial unit a_i; Q_j is the mass of a target territorial unit b_j; $f(d_{ij})$ is a function of the distance, d_{ij} represents the distance from a_i to b_j.

We obtain the interaction potential of a point (a settlement in our case) as a sum of the interactions of neighbouring points (settlements) having an influence on it; in this case we must not take into account the power itself of the basic point. Then, this relation is valid:

$${}_iV = K.\sum_{j=1}^{n} \frac{Q_j}{d_{ij}^{\,b}}$$

Every bell-shaped curve, asymptotically approaching the x-axis, may be used as a function of spatial interaction (Řehák 2004). A principle that the force expressing the influence of a settlement is increased with rising mass and decreased with growing distance is respected by that. Besides the power function given in the relation, we can also use the exponential function or the special function with an inflection point (Grasland 1991). But most often the power function is used to set the interaction potential with regard to the possible daily movement of population. The determination of the exponent b corrects the weight of the number of inhabitants or of the distance to define the final potential. Tikunov (1985) argues that this value may vary from 0.5 (the greatest emphasis

on the distance) up to 3.5 (the greatest emphasis on the power). In our case – after a test analysis – we chose the value of 2 as the most suitable exponent, the power of a settlement is represented by its number of residents in 2001, and the distance d is calculated as the road distance of settlements measured in a road atlas at a scale of 1 : 100 000 with the accuracy of 0.5 km. The constant k can equal to 1, since we do not express a concrete movement but examine the interaction potential generally.

On the basis of the above stated premises, we obtain the relation:

$$_iV = \sum_{j=1}^{n} \frac{Po_j}{d_{ij}^2}$$

where Po_j is the number of inhabitants in the target settlements. In this manner we may determine the interaction potential of all communes in the delimited Slovak part of the Slovak-Czech borderland with an area from the other side of the border for $n = 1, 3, 5$. Because the results for these three values of n are not much different, we use $n = 5$ in the cartographic interpretation. It means that we obtain the values for the interactions of the communes with five most influencing towns on the Moravian side (Moravian rural settlements were not taken into account since their impact is almost negligible). The final results are thus denoted as the cross-border interaction potential.

After that, for the rural settlements, we carried out a comparison of their cross-border interaction potential with the towns on the Moravian side ($_iV\check{c}$) and their cross-border interaction potential with the towns on the Slovak side ($_iVs$). This was done with the help of a relative cross-border interaction potential $_iv$ with an area on the other side of the border, defined by the relation:

$$_iv = k.\frac{_iV\check{c}}{_iVs}$$

where the constant k was determined as 100, and the individual shares were once again calculated separately for $n = 1, 3, 5$. For the same reasons as in the case of the (absolute) cross-border interaction potential, we take only the values for $n = 5$ in the cartographic interpretation into account. (Note: The Slovak part of the Slovak-Czech borderland is defined with the help of the districts located in the direct hinterland of the border – i.e. those of Čadca, Kysucké Nové Mesto, Bytča, Považská Bystrica, Púchov, Ilava, Trenčín, Nové Mesto nad Váhom, Myjava, Senica, and Skalica – Figure 1).

SYNTHESIS OF POTENTIAL AND REAL CROSS-BORDER RELATIONS

The regionalisation of the Slovak part of the Slovak-Czech borderland on the basis of the intensity of cross-border relations requires an inclusion of theoretical preconditions for their forming on the one hand as well as the existing reality on the other hand. According to our opinion, we used for both categories the most representative indicators being considered as equivalent. The theoretical part is expressed by means of the cross-border interaction potential V for $n = 5$ (i.e. interaction with the five most influencing towns beyond the border), reality is represented by commuting to work – more precisely by the share of those commuting to work across the State border in the total number of commuting. (Note: Because we deal with the border area, we may use the term "commuting to work" instead of "labour migration".)

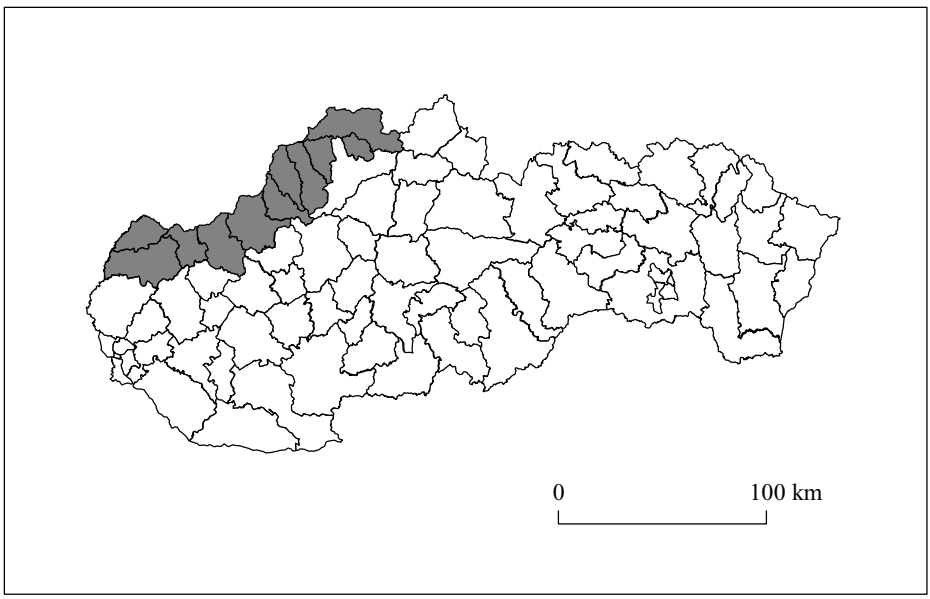


Figure 1. Delimitation of the studied region
(Slovak part of the Slovak-Czech borderland).

In this context, data on commuting at the level of communes were applied, namely from the census taken in 1991; at present sole accessible detailed data. Although the absolute numbers of Slovaks on the Czech labour market, have markedly been increased since then, accessible data from the inter-censual period at the level of districts suggest that no radical changes happened in the main directions of commuting in the borderland. The only exception is made by a modest weakening of commuting flows in the northern part of the Slovak-Czech borderland.

Reasons to select right these indicators are as follows: the cross-border interaction potential V for $n = 5$ is the most balanced variable used to express theoretical preconditions for cross-border relations and implies both transport accessibility and the size structure of urban settlements from the Moravian side of the border. Then, commuting to work maps best the cardinal flows of the daily movement of inhabitants and, at the same time, it is an indicator used most frequently to evaluate settlement-spatial relations. One could polemise with the fact that just one direction of this movement was taken into account. However, the inverse direction is in this case of minimum significance (position of a "weaker" vs. "more powerful" nation) and even negligible when compared to commuting from the Slovak side to the Moravian one.

We ensured necessary equivalence in this way: the median (this parameter was chosen not to influence the results by some very extreme values that were quite evident particularly in the case of the cross-border interaction potential) value of 1 was attributed to the cross-border interaction potential as well as commuting to work. The values for the communes were subsequently defined in a proportional way (for instance, if the median had

equalled to 4 and the value for the *a* commune had equalled to 5, after recalculation the median was 1 and the value for the *a* commune made 5 : 4, i.e. 1.2). For each commune we thus obtained two data and their total then determined the intensity of cross-border relations of the commune with the territory on the Moravian side of the Slovak-Czech borderland.

Within the cartographic interpretation, some corrections were necessary for classifying the single communes into the individual categories. Communes, that occurred alone in a certain category (i.e. did not neighbour with any commune of the same category) and this was not caused by any explicit natural or artificial barrier, were classified into the closest (by its value) category, in which minimally one neighbouring settlement had to be included. In so doing, the regulation of deviation – that may happen in small sets as are communes in view of commuting – was ensured. In this way we achieved a regionalisation of the Slovak part of the Slovak-Czech borderland on the basis of cross-border relations synthesising theoretical and factual indicators.

RESULTS

POTENTIAL PRECONDITIONS FOR THE CREATION OF RELATIONS IN THE SLOVAK-CZECH BORDERLAND

The cross-border interaction potential of communes in the Slovak part of the Slovak-Czech borderland is spatially rather polarised (Figure 2). The highest values may be found in its northern and southern parts. As regards the north, i.e. the Kysuce region, it is a result of the influence of the Ostrava city and a group of surrounding towns (Havířov, Třinec, Frýdek-Místek, Karviná). Though – in comparison with the towns of Hodonín and Břeclav in the south – these are more remote, their size structure is here more pronounced. In the south, the obvious influence of Hodonín (mostly in the Skalica district and the north of the Senica district), Břeclav (mostly in the west of the Senica district) and partly also of the Brno city, 70 km far from the border, is evident. The very maximum values of interactions were registered in the region of Northern Záhorie (Holíč and the nearest communes) due to the position of Hodonín. The impact of Brno was manifest even in the Myjava district and some communes of the Nové Mesto nad Váhom district, both with good access to the border; on the other hand the influence of Ostrava is also noticeable in the northern part of the Púchov district.

The Central Považie region interacts with Moravian towns much less compared to the north and south of the borderland. The low accessibility of the Považská Bystrica district (especially its northern and southern parts) was here clearly proved. It was also interesting to study the impact of the Váh River as a natural communication barrier. However, the barrier influence of this river did not show itself as significant; it was basically apparent only south of the section Púchov-Ilava where the distance between two neighbouring bridges over the river (17 km by road) is the greatest. On the whole, we may consider the number of passages across the Váh River in the studied section to be sufficient.

The spatial differentiation of the relative cross-border interaction potential is diametrically opposed (Figure 3). It does not decrease with growing distance from the border but mainly in the direction from marginal territories to regional settlements. Some com-

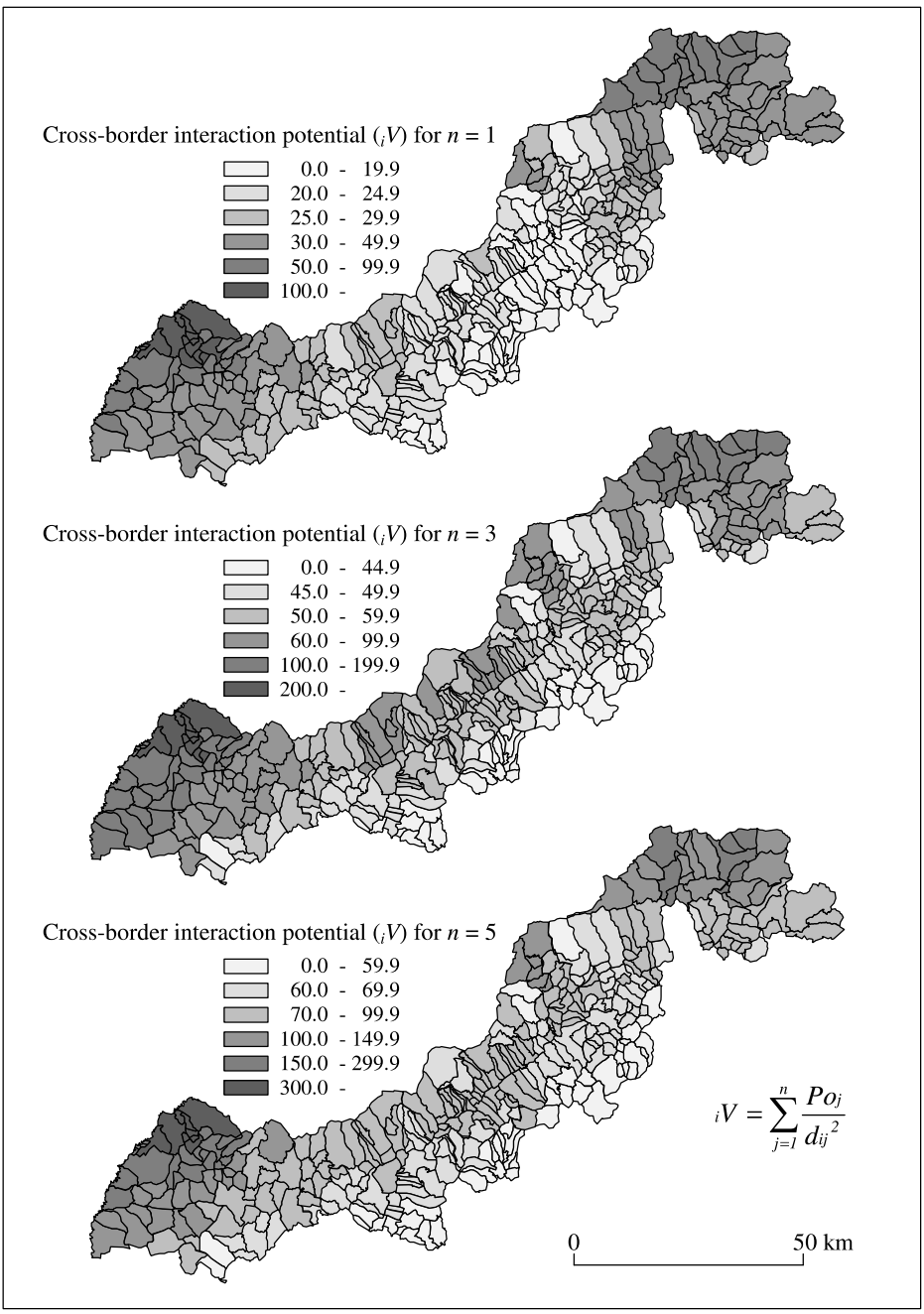


Figure 2. Cross-border interaction potential in the Slovak part of the Slovak-Czech borderland

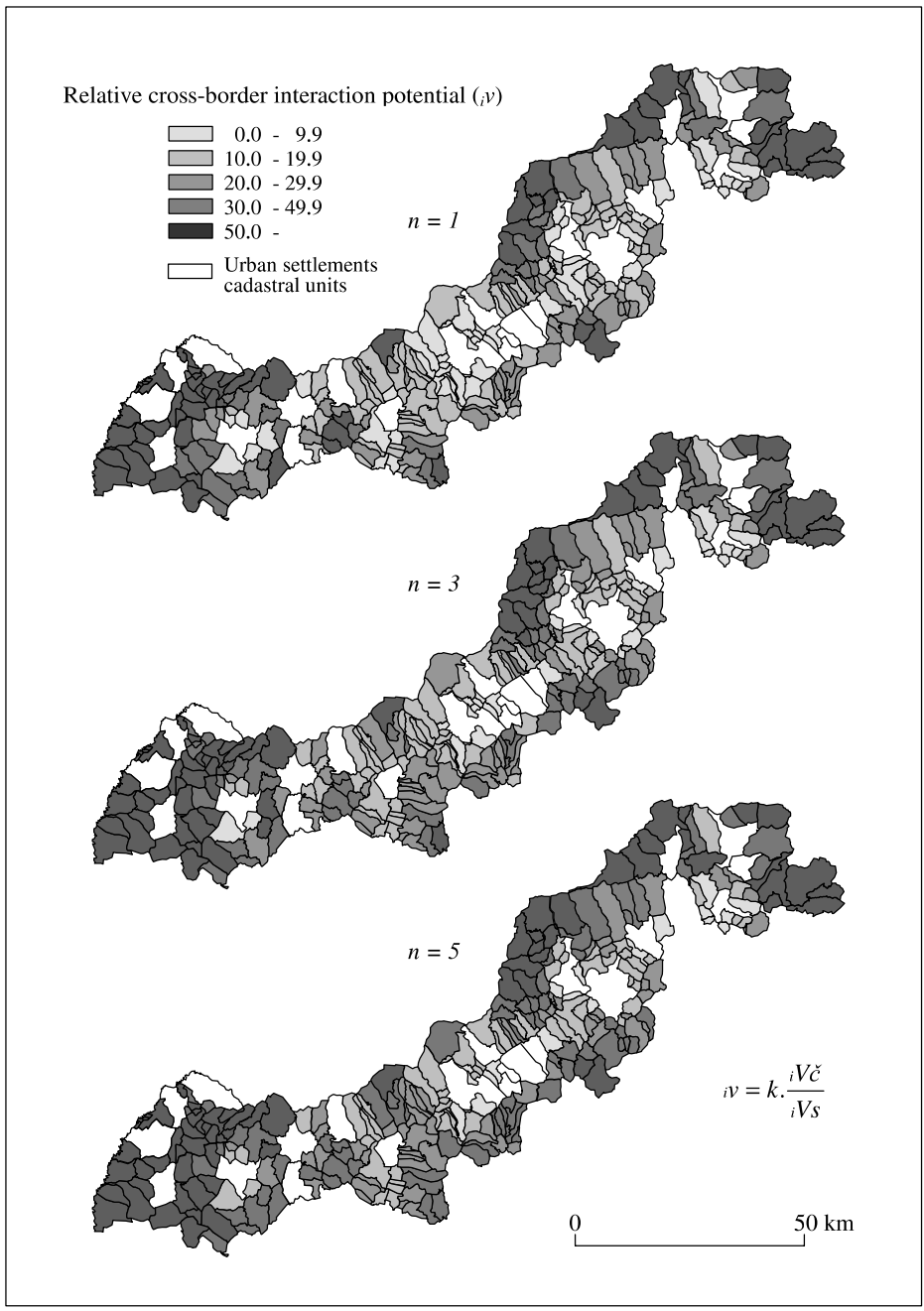


Figure 3. Relative cross-border interaction potential in the Slovak part of the Slovak-Czech borderland

munes at the foot of the Strážovské Mts. and the Považský Inovec Mts. may reach high values too. However, this is not thanks to the direct interaction influence of the Moravian side, but as a consequence of impaired transport accessibility and a weaker impact of Slovak towns. On the contrary, the lowest values are achieved by rural settlements from the central part of the Považie basin; they have very good connections to a numerous set of towns in the Považie region and, at the same time, a weaker cross-border interaction potential.

The highest values of the relative cross-border interaction potential may again be found in the northern and southern parts; only their spatial distribution is moderately different. The influence of Žilina is unequivocally evident in the Kysuce region: though communes of the Nové Mesto nad Váhom district, belonging in essence to the functional urban region of Žilina, have – as a result of this city's impact – visibly lower final values of the relative cross-border interaction potential in comparison with the Čadca district.

REAL (MIGRATION-COMMUTING) RELATIONS IN THE SLOVAK-CZECH BORDERLAND

Labour migration (commuting to work) across the Slovak-Czech border was last ascertained in detail during the census taken in 1991 (Figure 4). Data from the census of 2001 comprise only single section "foreign countries"; therefore their utilisation is considerably limited in our research. In 1991, the border districts (except for the Bytča district) recorded as much as 27.4% out of the total labour migration of Czech citizens to the Slovak Republic, whereas 19.6% in the opposite direction. These values approximately corresponded to a share of daily commuting, which is basically a logical fact with regard to the traffic conditions. In the former case, the share of the borderland in labour migration radically decreased (making merely 6.3% in mid-2003) due to the growth of migration towards Bratislava. In view of the labour migration of Slovak citizens to the Czech Republic, the share of the borderland fell to 15% immediately following the split of Czecho-Slovakia; this value continues to be the same up to now.

When analysing briefly the situation in the Slovak-Czech borderland we can also lean on a research by the Geographical Institution of the Faculty of Natural Sciences at Masaryk University in Brno. The research was carried out at labour offices within the border districts as of September 30, 1997 (Figure 5). The research examined – among other things – the main directions of commuting to work from the Slovak Republic to the territory of six Moravian border districts. According to this research, the most intensive intercommunal commuting flows were as follows: Holíč – Hodonín (538 persons), Čadca – Třinec (209 persons), Skalica – Hodonín (173 persons), Brodské – Břeclav (172 persons), Kúty – Břeclav (123 persons), Kopčany – Hodonín (113 persons) and Skalité – Třinec (106 persons). The most significant interdistrict (taking the former Slovak districts into account) commuting flows were these: Senica – Hodonín (1 867 persons), Čadca – Frýdek-Místek (1 650 persons), Senica – Břeclav (917 persons) and Čadca – Vsetín (603 persons). Some other intensive interdistrict connections such as Čadca – Ostrava-město and Čadca – Karviná (the third and fourth most numerous ones in 1991) were not observed and thus identified in this research since Ostrava-město and Karviná are not districts neighbouring with Slovakia.

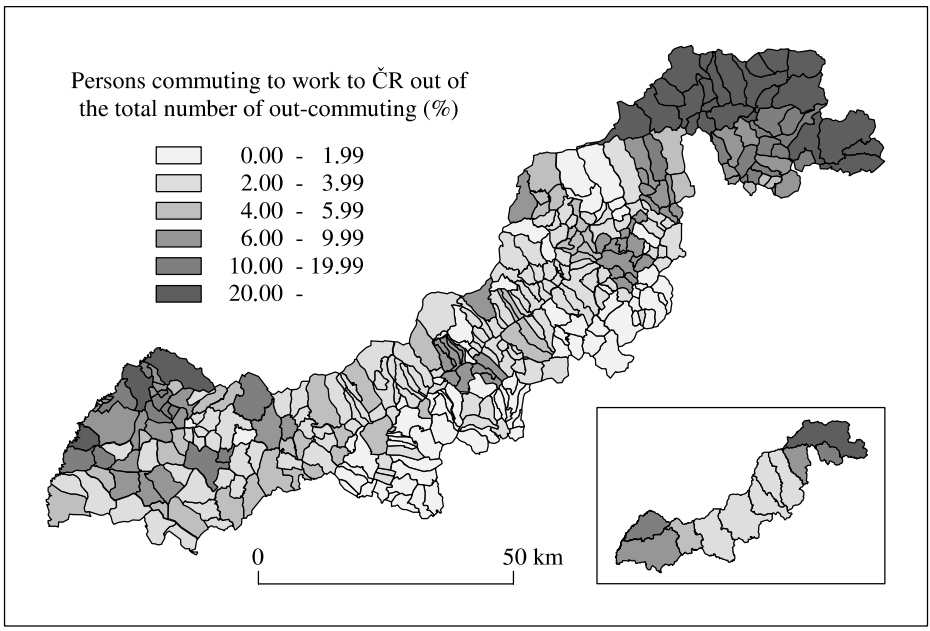


Figure 4. Labour migration from the Slovak part of the borderland
to the Czech Republic (1991)

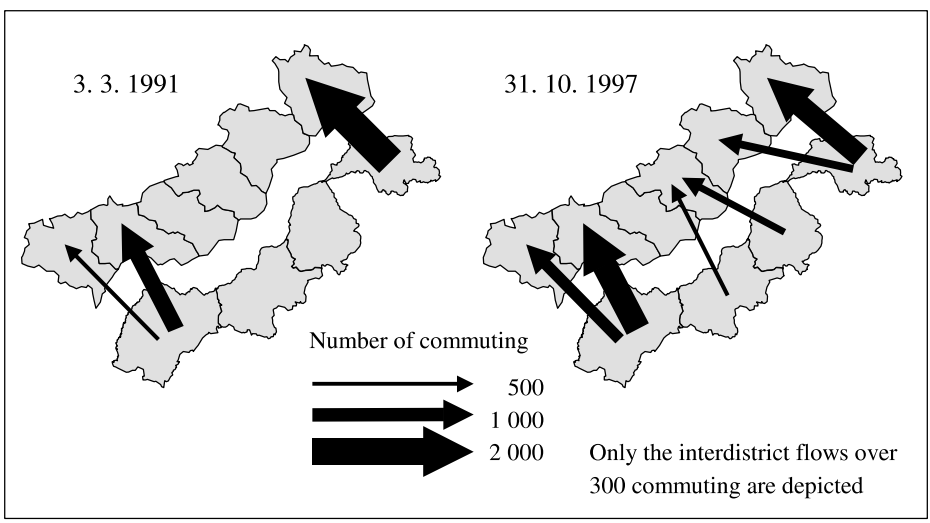


Figure 5. Changes in labour migration in the Slovak-Czech borderland
(direction SR-ČR)

The intensity of population mobility across the border expressed by the frequency of its passages (i.e. the intensity of movement through the official border crossings) is also included in the evaluation of migration-commuting relations. A radical increase of this indicator was registered at the Slovak-Czech border during 1994–1996 – then the number of its passages (through the railway and road crossings in total) by inhabitants increased 2.4 times. From then, this intensity has not been increasing further; even we may say that it slightly decreased in the period of 1996–2002. Changes in the number of Slovaks on the Czech labour market had the greatest influence on the growing pressure of border crossings – the number of Slovaks employed in the Czech Republic increased from 25,000 to 70,000 persons between 1994 and 1996. This is a quite understandable phenomenon considering a 15 per cent share of daily commuting from Slovakia to the Czech Republic. Other ways (i.e. for other reasons) – with a several times lower frequency – do practically not influence total mobility through the border. As an example, introducing the return of VAT by the Czech side for foreigners shopping in the country may be given. This act, without any doubt, brought a certain increase in the number of ways for shopping to the Czech Republic. The return of VAT came into effect in April 2000; however, no substantial increase in monthly changes of the overall pressure on border crossings has been recorded since then.

SYNTHESIS OF POTENTIAL AND REAL CROSS-BORDER RELATIONS, REGIONALISATION

On the basis of achieved results, we delimited the four essential categories of regions in evaluating the cross-border relations (Figure 6):

- Region with a very high intensity of cross-border relations with the Moravian side
  - Subregion with prevailing real cross-border relations
  - Subregion with the prevailing theoretical potential for cross-border relations
- Region with a high intensity of cross-border relations with the Moravian side
- Region with a mean intensity of cross-border relations with the Moravian side
- Region with a low intensity of cross-border relations with the Moravian side

The northern-southern polarisation of both theoretical and real preconditions had to be reflected in the final regionalisation. The first category with very strong cross-border relations well corresponds to the area of the Čadca district (except for the Dunajov commune) in the northern part and to the area of the Skalica district (except for the communes of Oreské and Lopašov) in the southern part of the borderland – the strategically situated (from the viewpoint of its transport position) commune of Kúty also belongs to this category. We divided this first category into two subcategories on the basis of marked differences due to the way of obtaining final results – the subcategory with prevailing real cross-border relations (in the north) and the subcategory with the prevailing theoretical potential for cross-border relations (in the south). The second category with a high intensity of cross-border relations – besides the Nové Mesto nad Váhom district and the substantial parts of the Bytča and Senica districts – includes also three communes in the Púchov district (Lysá pod Makytou, Lazy pod Makytou and Lúky) completed with two communes in the Myjava district (Vrbovce, Myjava). They all are situated in a territory with the good transport accessibility of the border and within the partial influence of the strong hinterland of towns in the northern and southern parts of the Moravian side of the Slovak-Czech borderland.

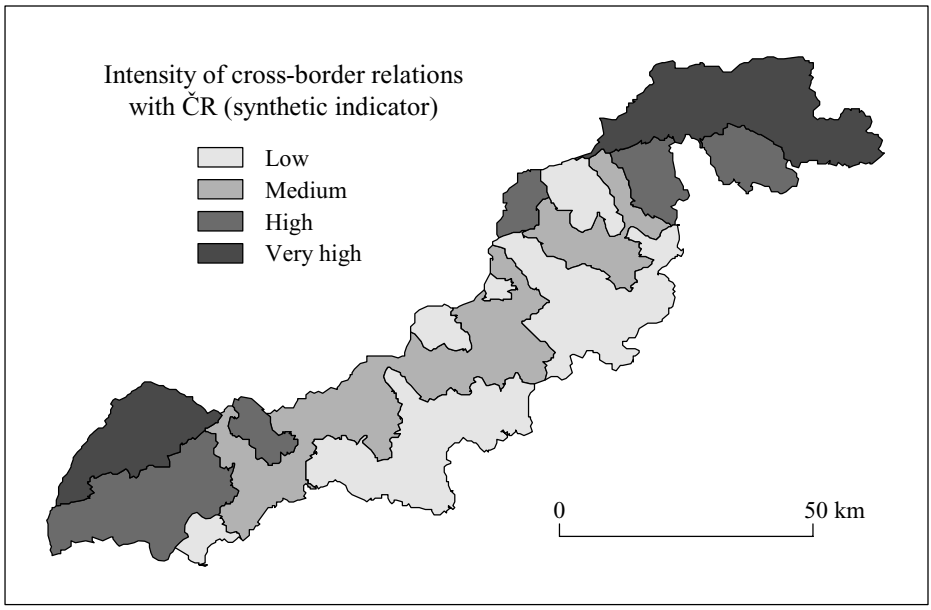


Figure 6. Regionalisation of the Slovak part of the Slovak-Czech borderland on the basis of the intensity of cross-border relations with the Czech Republic

On the other side, a mean to low intensity of cross-border relations is typical of nearly the whole Central Považie region, the Myjava district (except for the Vrbovce and Myjava communes), and the south-west of the Senica district. The intensity of cross-border relations over almost all this area is conditioned by the spatial distribution of border crossings. The lowest impact of the Moravian side is logically manifested in communes with the greatest distance from the State border, i.e. in the southern parts of districts in the Považie region. The low intensity of cross-border relations is also reached by some communes close to the border in an air line but without a direct connection to the other side. The potential development of these communes is thus considerably limited for spatial reasons (they are accessible only in one direction – the so-called dead-end communes). Among such communes belong those of Papradno, Horná Mariková and Dolná Mariková in the Považská Bystrica district (the already mentioned worst accessibility of the Moravian part), Zubák and Lednica in the Púchov district, Vršatské Podhradie and Krivoklát in the Ilava district as well as Horná Súča and Dolná Súča in the Trenčín district. (The latter two pairs of communes arose during the final regionalisation as an isolated unit coming under the lowest category.) The given communes deserve the greatest attention in the framework of supporting the border regions because – with regard to their marginal geographical position – they have also the greatest predisposition to social-economical marginalisation. In the southern part of the borderland, the communes of Cerová, Prievaly and Plavecký Peter from the Senica district show the low intensity of cross-border relations. This is a result of the specific character of the settlement network in the Záho-

rie region. The barrier impact of a military district (Military training area of Záhorie) here limits the transport interconnection of the western and eastern parts of the Záhorie region (which would be more pronounced if the research was extended by the Malacky district.

CONCLUSION

The intensity of cross-border relations is high especially in the northern and southern parts of the Slovak-Czech borderland; but both sections are of a clearly different character. Theoretical preconditions for the creation of relations and cross-border collaboration are unequivocally the best in the southernmost part. Besides a good permeability of the State border, this is also a consequence of the location of urban settlements in its close vicinity. This fact makes it possible to expand intersettlement relations. At the same time, considering short transport distances, the creation of relations may already be evoked by minimal differences in partial social-economic components, which are worth of travelling across the border. Over against, in the north, much greater differences are needed for mobility across the border. In fact, they always were here very perspicuous and now are still persisting (though moderately decreasing after the required restructurisation of heavy industry in the region of Northern Moravia). Therefore despite lesser theoretical preconditions (compared to the south), inhabitants of the Kysuce region in Slovakia are highly oriented to the urban centres of the Ostrava-Karviná region in the Czech Republic. These centres are more remote from the State border in comparison with Hodonín or Břeclav in the south, but are much more numerous and larger. However, development after the split of Czecho-Slovakia is increasingly aiming to fulfil theoretical preconditions and cross-border relations as well as cross-border collaboration in the north begin to stagnate compared to the situation in the south. In the central section of the borderland, the intensity of cross-border relations is the lowest. The reason for that is the orientation of local communes mainly to the regional centres (linear urban system) of the Central Považie region.

This work was supported by Science and Technology Assistance Agency under the contract No. APVT-20-016704.

REFERENCES

Divinský, B. (2004) *Migration trends in selected EU applicant countrie. Volume V – Slovakia : An acceleration of chalenges for society,* Bratislava, International organisation for migration.

Dojížďka a vyjížďka do zaměstnání a škol (1992) Federální statistický úřad, Praha.

Drbohlav, D. (1999*) International migration and the Czech Republic,* in Hampl, M. (ed.), *Geography of Societal Transformation in the Czech Republic,* PřF UK, Praha, 223–242.

Grasland, C. (1991) Potentiel de population, interaction spatiale et frontières: des deux Allemagnes à l´unification, *L´Espace géographique* 3, 243–254.

Grasland, C., Cattan, N. (1994) *Dynamiques migratoires et recompositions teritoriales en Tchecoslovaquie 1960–1992,* Paris, Équipe P.A.R.I.S. (CNRS – Université Paris I).

Horáková, M. (2004) *Mezinárodní pracovní migrace v ČR,* Bulletin č. 13. [online, 15. 6. 2004], <http://www.vupsv.cz>.

Paulov, J. (1986) Gravitačný model: Analytický nástroj štruktúrneho výskumu v geografii, *AFRNUC, Geographica* 25, 79–99.

Řehák, S. (1999) *Kartometrická analýza dopravní propustnosti státní hranice ČR*, in Jeřábek, M. (ed.) *Geografická analýza pohraničí České republiky,* Sociologický ústav AV ČR, Ústí nad Labem, 128–131.

Řehák, S.(2001) *Analýza sídelního zázemí nejdůležitějších silničních hraničních přechodů ČR,* in Jeřábek, M. (ed.) *Reflexe regionálního rozvoje pohraničí České republiky,* Sociologický ústav AV ČR, Ústí nad Labem, 47–53.

Řehák, S. (2004) *Geografický potenciál pohraničí,* in Jeřábek, M., Dokoupil, J., Havlíček,T. (eds.) *České pohraničí – bariéra nebo prostor sprostředkování,* Academia, Praha, 67–74.

Slavík, V. (1998) *Turistický potenciál regiónu Skalica,* Projekt Ecos/Ouverture – Inward II, Mestský úrad, Skalica.

Slavík, V., Halás, M. (1998) Cezhraničné väzby a cezhraničná spolupráca SR a ČR na príklade okresu Skalica, *Geografické informácie VI,* Nitra, FPV UKF FPV – UNESCO katedra IRIE, 65–75.

Tikunov, V. S. (1985) Modelirovanije v social'no-ekonomičeskoj kartografii, SPN, Moskva.

Zamestnávanie občanov ČR v SR a nezamestnanosť občanov SR z územia ČR v Slovenskej republike, (2003) [online, 15. 12. 2003], <http://www.nup.sk>.

EUROPA XXI
2006, 15: 77–86

RURAL AREAS OF SUCCESS – IN SEARCH OF DEFINITIONS AND MEASURES

KONRAD Ł. CZAPIEWSKI

Institute of Geography and Spatial Organization, Polish Academy of Sciences,
Twarda 51/55, 00-818 Warszawa, Poland,
e-mail: konrad@twarda.pan.pl

Abstract: This paper is an introduction to the discussion on rural areas of success, their definitions, methods of delimitation, conditions of localization and relationships with other socio-economical phenomena. Areas, where all indices describing civilization development are relatively high and which are characterised by a constant progress in chosen measures in a given time, should be considered as the rural areas of success. 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. Very important feature of the area of success is their relativity, which in great extend depends on the reference point.

Key word: success, rural areas, methodology

INTRODUCTION

Why do rural areas need a success? In Poland one can observe a clear division into large towns that are characterised with a high development potential and the other areas. This situation confirms the presence of the processes of socio-economical space polarisation. 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-subsi-

dized 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. The latter are commonly understood as a periphery, but one can name rural localities or areas where socio-economical situation is good.

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. A balance of all spheres of civilization development is assumed for units like this.

This paper is an introduction to the discussion on areas of success, their definitions, methods of delimitation, conditions of localization and relationships with other socio-economical phenomena. Firstly we present main ideas of the concept of integrated rural development which is the basis of research on socio-economical success in rural areas. Introductory definitions, examples of analysis and research methodology are also presented.

INTEGRATED RURAL DEVELOPMENT

European Union (EU) applied a new approach in programming the rural areas development in current planning period (2000–2006). In opposition to the sector-oriented one that was preferred in the previous periods, it is based on multi-functional and integrated activities. Realized programs were directed to the local societies that inhabited individual regions and were based on the common application of endogenous and exogenous funds. A holistic approach in the development of rural areas is supposed to prevent the deepening diversification of the regions and counteract the exclusion of areas characterised with lower economical potential.

The holistic approach has become a widespread research paradigm nowadays again. A term *integrated rural development* is used more and more often in the rural studies (Wilkin 2003). This idea includes territorial approach in research and planning (at local, regional, national and EU level) as well as programming the development in three spheres: economical, socio-cultural and natural. Similar aspects of diversity of rural areas were introduced in the *Plan of the Rural Areas Development* (*Plan Rozwoju Obszarów Wiejskich* 2004).

Examples from three countries are here presented in order to depict changes in approach to the rural studies.

Italian scientists applied a *nuova ruralita* concept that is based on the territorial not the sector-oriented perspective and in which rural areas are treated as a subject of a complex analysis. Investigations cope with the interaction between society and territory, which includes all aspects of human activity, related to the agriculture in a defined area: from cultural to social and economical ones. Analysis covers the phenomena that are characteristic for an individual region and that differentiate it with its unique identity. Rural space is characterised as an inhabited precinct with defined natural, cultural, social and economical conditions (milieu). Methods from various disciplines e.g. anthropology,

culture studies, sociology, demography, ethnography, economy and geography are applied in the research (Grilloti di Giacomo, 2001).[1]

Countryside capital term that includes physical capital, natural capital and social capital has recently appeared in the Anglo-Saxon literature. All these three elements should be recognized as an individual potential of rural areas. The potential considers landscape, flora and fauna, biodiversity, soils, environment quality, agricultural facilities, settlement structure, monumental dwellings and machines, roads, railways, lakes, rivers, local folklore and tradition, life styles and abilities of the inhabitants (Garrod, Wornell, Youell 2006).

The pressure of economical development is very strong in some areas in Denmark. That is why one emphasizes exquisitely important role of integrated and local development strategies in the proper functioning of rural areas (Aagaard Thuesen 2004). These strategies are based on endogenous factors as well as they assume better living conditions and harmonic social, cultural and economical development.

Integrated rural development requires not only co-operation of various social and professional groups, but also formation of the coherent development strategies at the different spatial levels. This matter relates also to the complex characteristic of the phenomena that occur in rural areas, wider perspective of the development conditions and application of time into the description of socio-economical processes. These assumptions build the basis for further investigation of the rural areas of success.

AREAS OF SUCCESS – DEFINITIONS

The term *problem areas* is often used in the scientific and planning literature (eg. Zagożdżon 1988; Ciok 1996; Bański 1999; Rosner 1999, 2002; Churski 2004). Idea of *areas of success* appears significantly more rarely (Komorowski 1998; Gorzelak i in. 1998; Głębocki, Kaczmarek 2005).

It is crucial to explain the term *success* in order to determine the definition of the areas of success. According to the Internet encyclopaedia *Wikipedia* success is the *activity at the highest level of an individual's ability in terms of fulfilling their dreams and desires with simultaneous balance in all spheres of life (www.wikipedia.pl).* Dobrołowicz (2001) and many other psychology textbooks present similar approach to this issue.

Application of such a definition of *success* conditions to great extend the definition of *areas of success*. Areas, where all indices describing civilization development are relatively high and which are characterised by a constant progress in chosen measures in a given time, should be considered as the areas of success. 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 (Czapiewski 2006b). Very important feature of the area of success is their relativity, which in great extend depends on the reference point.

[1] See Czapiewski 2006a for more about *nuava ruralita* concept.

Gorzelak et al (1998) define areas of success as those spatial units that utilize objective development conditions better than the other ones. Each local pattern has a defined set of the development conditions: localization, natural resources, cultural heritage values, economical level and features of local societies. Not every one was able to utilize them properly. Thus, *local success* is a relative phenomenon. In the simplest case, success is achieved by those areas that develop better than their neighbours that is units with similar development conditions, but not necessarily with border between one and other.

Komorowski (1998) recognised the situation when added value in the economy of a town exceeded total labour costs as a field of success in this town (Figure 1). The concept of a town success is complex and ambiguous, and is not only an economical construction and its dimension should not be noticed only in a quantitative way.

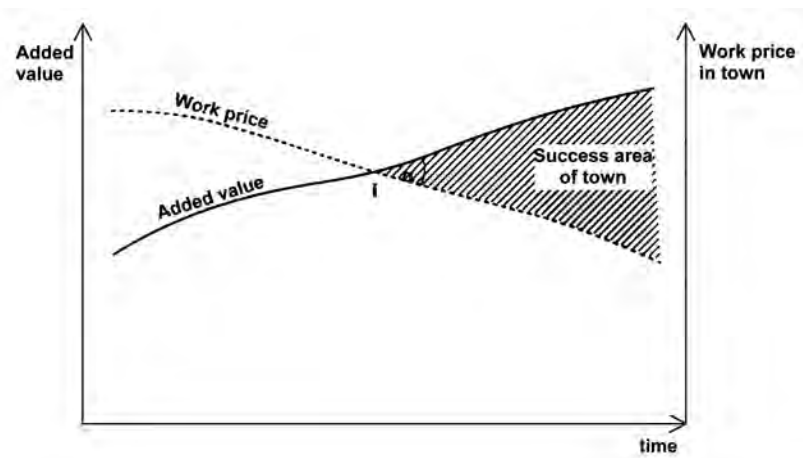


Figure 1. Fields of success in a town
Source: J. Komorowski [1998].

In the investigation on how deep it is possible to go down in the settlement hierarchy so that a given town could be recognized the development centre, Sobala-Gwosdz (2005) found out that although the locality has a sphere of influence it will not be a progress centre but only a place of success, unless it has at least sub-regional impact. The result is that the area of success does not have to be a means of innovation to the neighbourhood areas.

Bański (2005) defined success as a positive result of an undertaking. So, area of success will be characterised by the positive course of activities affecting the improvement of economical situation and living conditions. Success will result in improvement of technical and social infrastructure outfit, dynamic increase in commune budget incomes, progress in new dwelling houses construction and increase in people wealth. Identification of the areas of success in the rural areas have to be carried out in spatial and temporal scale. Economical success may be a process of constant development of an individual unit or dynamic economical increase caused by a single phenomenon. The previous is

more favourable as it shows intentional activities of local authorities and the presence of significant endogenous potential. The other form of success is usually a result of an external intervention of one-time stimulation kind.

Area of success is a multi-dimensional notion that consists of many variables depicting spatial diversity.

In communes ranking, Swianiewicz (2002) compared situation at the beginning and at the end of local authority tenure. He distinguished not the best-developed communes, but units where the greatest progress had taken place. The following types of success were depicted in the classification:

1. financial success- the highest increase in commune budget incomes; the commune may allot significantly more funds to fulfil its needs than at the beginning of the tenure,
2. economical success- units with the greatest progress of economical measures that is incomes of firms and people and where the unemployment rate has lowered or at least has grown the least,
3. infrastructure success- the greatest progress in infrastructure development,
4. socio-economical success- increase in social activity (number of NGOs, local elections turn-out), no attempts to impeach councils or boards of executives during the tenure as well as achievements of the departing authorities in the following elections.

Falkowski and Szamota (2005) also emphasised multi-dimensional character of the *area of success* term. They pointed out that analysis of the conditions of transformation success should include such aspects as: natural environment conditions and quality, geographical and economical localisation, activity and effectiveness of local authorities, infrastructure development level as well as activity and enterprising of local society. In turn, results of changes appear in following spheres: natural, social, economical and infrastructure.

The same four planes of spatial diversification were distinguished in *Raport o stanie przestrzennego zagospodarowania kraju (Report on the state of spatial management of the country)* (2005)[2].

According to Komorowski (1998) success of a town is a result of many causes that have direct (originating from various areas of town functioning) and indirect (their influence exceeds over time and is often difficult to measure) character. These conditions emerge from culture, intellectual and scientific potential, efficiency of the town management and realised economical policy, technical infrastructure, demographical structure, social and professional phenomena, spatial and transport structure as well as geographical localisation.

AREAS OF SUCCESS – MEASURES

Indices used in delimitation of rural areas of success should be included to the group of endogenous factors of socio-economical development of rural area. These factors constitute an area's individual potential, that is a set of features that result from commune localisation and inhabitants. High level of individual potential affects positively creation

[2] Raport published by IGiPZ PAN (Węcławowicz et al., 2006).

of favourable living conditions for the inhabitants and endogenous activity may cause self-sustaining social and economical development. Moreover, the level of the advantage taken from the elements coming from the outside (funds, investments, tourists or governmental and EU programs) depends on the level of the inner factors. External stimulation of the development is important, sometimes even indispensable, but even a great support will be wasted without proper local ground (Sobala-Gwosdz 2005).

While searching for proper measures and research methods of investigation of the areas of success one should take into the consideration three following features that characterise this phenomenon:

1. complexity,
2. dynamics,
3. relativity

On the basis of the literature one may point out that the socio-economical success of polish rural areas consists of:

- economical success – that depicts activity and enterprise of inhabitants and local authorities,
- social and cultural success – that includes demographic and education characteristic and elements of the social capital,
- infrastructural success – that characterise elements of social, transport and technical infrastructure,
- environmental success – that describes sanitary infrastructure and quality of the elementary features of natural environment

The definition of the areas of success assumes the balance of all planes that characterise civilization development. Graphical example of this assumption in the relation to four above-mentioned spheres of success of rural areas is presented on Figure 2. Subsistence of such a model situation is in reality almost impossible, so values of the accepted deviations should be applied in the analysis.

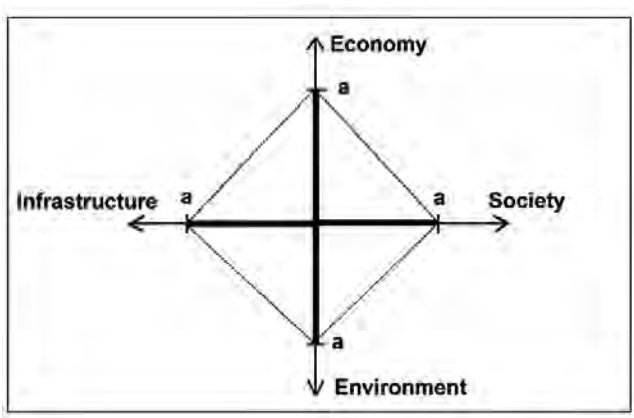


Figure 2. Idea of balance of all partial elements of the *area of success* term

Source: author's concept.

This way, of defining the areas of success results at the analysis stage in a specific form of delimitation of this kind of areas. Simplified scheme of the areas of success delimitation was constructed in order to picture above-presented definition and assumptions (Figure 3). We assumed subsistence of an area that consists of 100 spatial units. Later we calculated, indices for three various features that, in assumption, confirm civilization progress. 30 units with the highest values of analysed features A, B and C were marked. Last stage of the research is dedicated to distinguishing of those units, where all analysed features reached values above the average. As a result, we received 11 units that we called the *areas of success* as they meet the assumption of equally high level of all analysed factors.

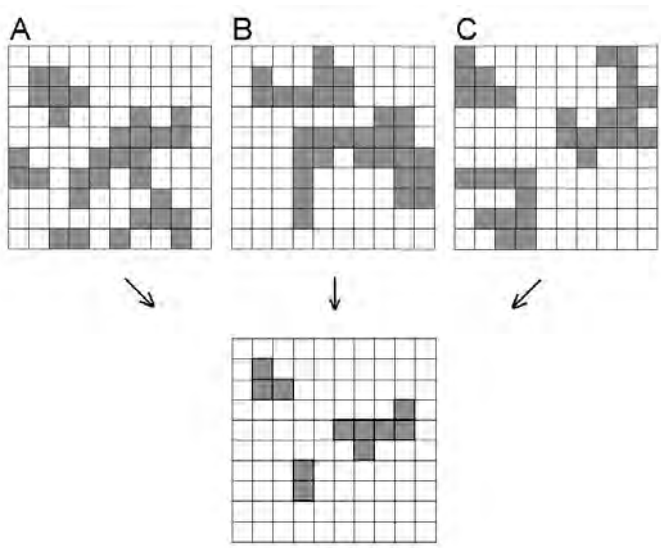


Figure 3. Areas of success delimitation scheme
Source: author's concept.

Methodology of the research on areas of success assumes not only the necessity of complex analysis, but also investigation of the phenomenon dynamics. This causes the need of establishing the reference point, which, in great measure, influences the results. Swianiewicz (2002) emphasised that in his ranking of local authorities units the success was not unequivocal to a good situation in the commune at the given moment. Furthermore, it was the measure of the progress (change). For example, if in commune A situation was very unfavourable at the beginning of tenure, and after four years is average, this means that the progress has been quite great. In turn, if in commune B the initial situation was good and remained so till the end of the analysed period, there was no change. According to the method, commune B will be at the bottom of the success ranking, although the level of appeasement is there still higher than in commune A.

The last feature of the areas of success is their relative perspective. It is present at many stages e.g.: choice of the indices, choice of the reference and analysed units (spatial

disaggregation), choice of the analysed period (its beginning and length) and choice of statistical methods. Komorowski (1998, p. 285) stated that *success of a town can be measured to some extend and the result depends strongly on applied indices*. However it has to be emphasised that this problem occurs in all analysis that investigate socio-economical phenomena in a complex way (eg. Stola 1987; Swianiewicz 1989; Kołodziejczyk 2002; Czapiewski 2005; Zawalińska 2005; Heffner, Rosner 2005).

Success in rural areas may be individual, local or regional in its character. There are different causes in each of these cases. It seems that spatial localisation (localisation within agglomeration or in suburbia, along the main transport roads, in the border areas, or in nature and tourist attractive places as well as in areas with dominant share of arable or forest land) is one of the most important factors that create rural areas of success.

SUMMARY

Significant civilization development that emerges in many aspects of socio-economical structure (education, non-agricultural activity, and infrastructure or local activity) has taken place recently in rural areas in Poland. A lot of unfavourable phenomena (e.g. youth migrations, decrease of income in agriculture, unemployment) accompany this process. However, it is crucial to notice the great positive qualitative and quantitative changes that have occurred in rural areas since 1989. That is why, apart from research on successes and loses of transformation period, analysis of positive effect of changes is important.

The objectives of this paper were to create the introductory definition of areas of success and working out the basis of the methodology for their investigation. Presented research procedure showed unusual complexity of the analysed phenomenon. Five stages of the analysis can be distinguished in the research of rural areas of success:

1. working out the definition,
2. choice of measures and statistical methods,
3. spatial delimitation,
4. determination of spatial localization conditions,
5. analysis of relationships with other phenomena of socio-economical structure.

Despite many limitations and difficulties, the matter of the areas of success is an exquisitely interesting research problem. The full analysis worked out according to the above described research procedure may answer a lot of questions about causes, conditions and spatial diversity of the processes that take place in rural areas in Poland. Obtained results may be applied widely in national and regional plans of development.

REFERENCES

Aagaard Thuesen, A. (2004) *The missing link? – Experience with partnership organizing in Danish rural policy!* http://www.cful.dk/log/filer/PaperNSNThemissinglink2004.pdf, The Danish Centre for Rural Research and Development.

Bański, J. (1999) *Obszary problemowe w rolnictwie Polski*, Prace Geograficzne 172, IGiPZ PAN, Warszawa.

Bański, J. (2005) *Sukces gospodarczy na obszarach wiejskich,* in B. Głębocki, U. Kaczmarek (eds.), *Obszary sukcesu na polskiej wsi*, Studia Obszarów Wiejskich 8, IGiPZ PAN, PTG, Warszawa, 9–20.

Chursk, P. (2004) *Obszary problemowe w Polsce z perspektywy celów polityki regionalnej Unii Europejskiej*, WSH-E, Włocławek.

Ciok, S. (1996) *Teoretyczne i empiryczne koncepcje obszarów problemowych*, Acta Univ. Wratisl. 1796, Uniwersytet Wrocławski, Wrocław, 5–26.

Czapiewski, K. (2005) *Living conditions and functional structure of rural communes in Poland*, Geografický Časopis 57, 1, 23–42.

Czapiewski, K. (2006a) *Koncepcja "nuova ruralità" we włoskiej literaturze geograficznej,* in T. Komornicki i Z. Podgórski (eds.), *Idee i praktyczny uniwersalizm geografii*, Dokumentacja Geograficzna 33, IGiPZ PAN, Warszawa, 32–38.

Czapiewski K. (2006b) *Obszary rolnicze – obszarami sukcesu?* in Głęboki B., Kacprzak E. (red.), *Przemiany struktury przestrzennej rolnictwa – sukcesy i niepowodzenia*, Bogucki Wydawnictwo Naukowe, Poznań, 21-36.

Dobrołowicz, W. (2001) *Psychologia sukcesu. Wprowadzenie*, Kreator, Pruszków.

Falkowski, J., Szamota, P. (2005) *Sukcesy i niepowodzenia w rozwoju obszarów wiejskich w latach 1989-2004 na wybranych przykładach północnej Polski,* in B. Głębocki, U. Kaczmarek (eds.), *Obszary sukcesu na polskiej wsi*, Studia Obszarów Wiejskich 8, IGiPZ PAN, PTG, Warszawa, 21–39.

Garrod, B., Wornell, R., Youell, R. (2006) Re-conceptualising rural resources as countryside capital: The case of rural tourism, *Journal of Rural Studies*, 22, 117–128.

Głębocki, B., Kaczmarek, U. (eds.), (2005) *Obszary sukcesu na polskiej wsi*, Studia Obszarów Wiejskich 8, IGiPZ PAN, PTG, Warszawa.

Gorzelak, G., Jałowiecki, B., Dziemianowicz, W., Roszkowski, W., Zarycki, T. (1998) *Dynamika i czynniki sukcesu lokalnego w Polsce,* in G. Gorzelak i B. Jałowiecki (eds.) *Koniunktura gospodarcza i mobilizacja społeczna w gminach*, Studia Regionalne i Lokalne, 25, Uniwersytet Warszawski, Warszawa, 81–151.

Grillotti di Giacomo, M. (2001) *Une nouvelle saison pour la géographie et pour l'agriculture,* in P. Di Carlo (ed.) *Nouvelle ruralité et politiques agricoles*, GECOAGRI, Genova, 9–14.

Heffner, K., Rosner, A. (2005) *Zróżnicowanie przestrzenne rozwoju gospodarczego na obszarach wiejskich w Polsce,* in K. Zawalińska (ed.) *Rozwój obszarów wiejskich. Doświadczenia krajów europejskich*, Problemy Rozwoju Wsi i Rolnictwa, IRWiR PAN, Warszawa, 229–241.

Kołodziejczyk, D. (2002) *Uwarunkowania społeczno-gospodarcze lokalnego rozwoju gospodarczego*, Studia i Monografie 113, IERiGŻ, Warszawa.

Komorowski, J. (1998) *Marketing a potrzeba sukcesu miasta*, Czasopismo Geograficzne 69, 3-4, 275–293.

Plan Rozwoju Obszarów Wiejskich 2004-2006 (2004), Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa.

Raport o stanie zagospodarowania przestrzennego kraju (2005), IGiPZ PAN, Warszawa.

Rosner, A. (ed.), (1999) *Typologia wiejskich obszarów problemowych*, IRWiR PAN, Warszawa.

Rosner, A. (ed.), (2002) *Wiejskie obszary kumulacji barier rozwojowych*, IRWiR PAN, Warszawa.

Sobala-Gwosdz, A. (2005) *Ośrodki wzrostu i obszary stagnacji w województwie podkarpackim*, IGiGP Uniwersytet Jagielloński, Kraków.

Stola, W. (1987) *Klasyfikacja funkcjonalna obszarów wiejskich Polski. Próba metodyczna*, Prace Habilitacyjne, IGiPZ PAN, Warszawa.

Swianiewicz, P. (1989) *Społeczno-ekonomiczna typologia miast i gmin w Polsce*, Rozwój Regionalny, Rozwój Lokalny, Samorząd Terytorialny 19, Uniwersytet Warszawski, Warszawa.

Swianiewicz, P. (2002) Sukces kadencji, *Tygodnik Wspólnota* (4.10.2002).

Węcławowicz, G., Bański, J., Degórski, M., Komornicki, T., Korcelli, P., Śleszyński, P. (2006) *Przestrzenne zagospodarowanie Polski na początku XXI wieku*, Monografie 6, IGiPZ PAN, Warszawa.

Wilkin, J. (ed.), (2003) *Podstawy strategii zintegrowanego rozwoju rolnictwa i obszarów wiejskich*, Uniwersytet Warszawski, Warszawa.

Zagożdżon, A. (1988) *Kilka uwag o obszarach problemowych,* in *Gospodarka przestrzenna, region, lokalność*, Biuletyn 138, KPZK PAN, Warszawa, 137–147.

Zawalińska, K. (2005) *Indeks Rozwoju Obszarów Wiejskich dla Polski (IROW) konstrukcja i propozycja praktycznego wykorzystania,* in K. Zawalińska (ed.) *Rozwój obszarów wiejskich. Doświadczenia krajów europejskich*, Problemy Rozwoju Wsi i Rolnictwa, IRWiR PAN, Warszawa, 93–111.

EUROPA XXI
2006, 15: 87–102

URBAN MUNICIPALITIES VERSUS RURAL MUNICIPALITIES – SELECTED ASPECTS OF QUALITY OF LIFE IN SLOVAKIA

VLADIMÍR SZÉKELY

Institute of Geography, Slovak Academy of Sciences
Štefánikova 49,
814 73 Bratislava, Slovakia
e-mail: szekely@savba.sk

Abstract: Quality of life is judged by means of a wide spectre of indicators. Ones of them are indicators connected with the quantity and quality of local and their material level of life quality. It is supposed the socialist history (with its special impact on the spatial redistribution of population – selective emigration of young and well educated people from villages to towns and cities) could be assessed as the most important element with the negative impact on the great differences in quality of life between inhabitants of urban and rural municipalities.
Urban municipalities represent the core regions in settlement structure of Slovakia, but rural municipalities represent the peripheral ones. The aim of this study is to describe, analyse, and compare the population structures and material level of life quality in urban (as core regions) and rural municipalities (as peripheral regions) aggregated into eight administrative regions. Regional aggregation allows us to identify and then to explain the relevant regional differences in Slovakia according to selected aspects of life quality in urban and rural municipalities.

Key words: indicators of quality of life, urban municipalities and rural administrative and regional units as regional units, core and periphery, Slovakia

INTRODUCTION

In the research into spatial differentiation and identification of spatial disparities that are immanent to geography since a long time, a quite strong exploring current emerged which is focused on study of spatial dualism – polarized space, on the study of the core-

periphery relationships (in the sense of J. Friedmann's theory 1966). The now widely accepted polarized space can be interpreted from varied aspects. Works, which define the core and periphery regions based on distance, economic performance or social status of population in their spatial units, are quite common in geography (Vaishar 2005). It is obvious that even in spite of applying very diverse indicators for delimitation of the core and peripheral regions, geometrical, economic and social polarizations are very closely interlinked.

Among the first studies in Slovakia that paid attention to the existence of the polarized space is that of Ivanička (1968), where the author delimited several types of regions from the point of view of growth theory, it means applying exclusively economic criteria. He does not mention core and peripheral regions yet – the terms he works with are in fact equivalents to those used today – regions – poles of growth, and regions economically inadequately developed (he also distinguishes regions – axes of development and growth, declining regions and regions of re-development).

The author of this paper will try to explore the differences between the core and periphery at two levels. The differences between territorial-administrative units of Slovakia represent one level. Their position in the regional structure of the country will be suggested in the light of the researched quality of life indicators. The second level, on which the paper focuses, is oriented to identification of intra-core and intra-peripheries inequalities. Intraregional inequalities mean differences between the aggregated indicator values for urban municipalities and aggregated indicator values for rural municipalities.

It should be emphasized that the subject, i.e. identification of differences between urban municipalities and rural municipalities at the level of core and peripheral regions is not very frequented in the Slovak geographical literature. Studies that exist are almost exclusively focused on demogeographical analyses. Examples are the studies of Bezák (1999), Podolák (2005) or Švecová (1998) who observe differences between the urban and rural municipalities by means of natural population change at the level of districts.

URBAN MUNICIPALITIES AND RURAL MUNICIPALITIES

The basic problem inherent to every comparison of urban and rural areas in order to identify differences of physical and human geographic nature between the densely and less densely populated spatial units is what shall we call town and what village. Even in spite of the fact that several authors (for instance, Elands and Wiersum 2001) point to complexity of a generally applicable definition of rural space, in Slovakia the problem is practically reduced to classification of basic administrative units (municipalities) into two categories: urban municipalities and rural municipalities.

Approaches to delimitation of urban and rural municipalities that responded to changed conditions caused by the urbanization process are summarized in the study of Podolák (2005). He wrote: *"In the past, historical criteria were used to define the town. Later, with ongoing urbanization, the quantitative features and the size of settlements were taken into account"* (p. 50). Delimitating of urban and rural municipalities became the matter of the Statistical Service, which also took into account the geographical criteria. Starting from 1961, every population census was accompanied by a separate classifica-

tion discerning the communes of urban and rural type (Bezák 1999). In the 1960s, the so-called status of town, approved by the Ministry of Interior was a new element applied to classification of towns. In the course of the following years, confession of the status of town became the decisive differentiating criterion for classification of a municipality as urban. According to the Act of the Slovak National Council No.369/1990 about municipal establishment, status of town can be obtained by the municipality, which fulfils the following conditions: 1. it is an economic, administrative and cultural centre, or centre of tourism or it is a spa, 2. it secures services for population living in the surrounding communes, 3. it has transport communication with the surrounding municipalities, 4. at least part of its territory is covered by urban fabric, and 5. its population is at least 5, 000. However, also a municipality that does not comply with the condition of population number can obtain the status of town, if it fulfils all above quoted legal requests.

Confession of the town status by the National Council of the Slovak Republic is now the decisive criterion for delimitation of urban municipalities. All other municipalities are rural. In 2001, i.e. in time of the most recent census, there were 2,883 municipalities in Slovakia (Figure 1), including 138 urban municipalities (4.8 %) and 2,745 rural municipalities (95.2 %).

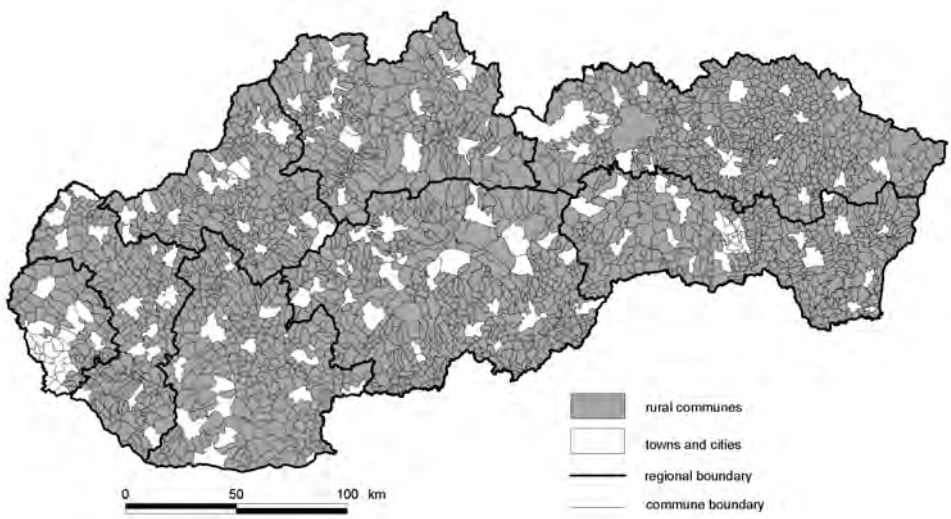


Figure 1. Urban communes (municipalities) versus rural communes (municipalities) in Slovakia

ADMINISTRATIVE DIVISION OF SLOVAKIA – A BASIS FOR THE REGIONAL STATISTICS

The question of delimitation of adequate regional units, which represent functional relationship in space, is the problem for identification of regional disparities not only in Slovakia but also in many other European states. Analyses focused on identification of

regional disparities in Slovakia are, as a rule, linked with administrative region, which is the product of territorial-administrative division. In 1996, 8 administrative regions and 79 districts were formed in the consequence of the new territorial-administrative division in Slovakia. They became automatically regional units from the regional statistics point of view with subsequent evidence and accessibility of spatially disaggregated statistical data (Figure 2).

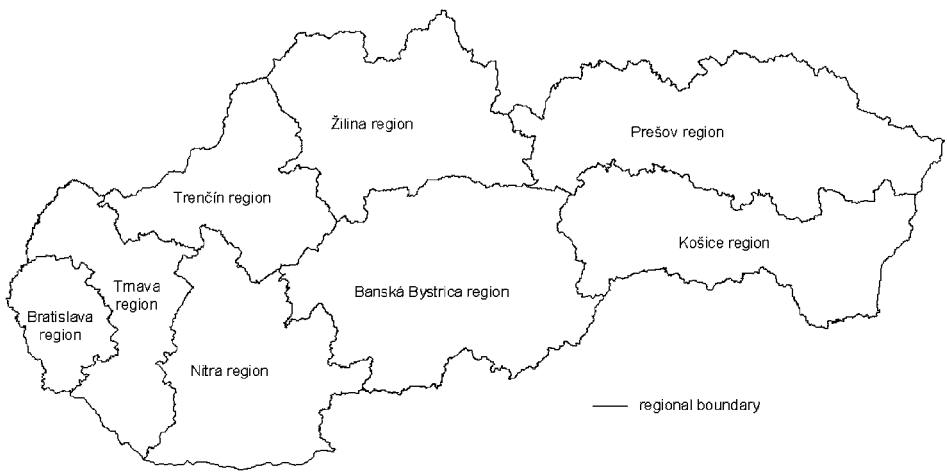


Figure 2. Administrative division of Slovakia into 8 administrative regions used for analysis of differences between urban and rural municipalities from the point of view of selected quality of life aspects

Bezák (2001) supposes that territorial-administrative units on principle cannot adopt the function of spatial or regional units as the establishment of the territorial-administrative division seldom takes into account scientific or any criteria other than political. Leaning on his analyses the author states that *"as far as the number of administrative regions and the choice of their administrative centres and demarcation of their boundaries are concerned, there exists a serious disproportion between the present regional structure and the new territorial-administrative division of Slovakia"* (p. 301). Even if we can agree with the above, the practical life shows that the regional statistics linked to the territorial-administrative units clearly determines the regional analyses. The study of literature and official governmental documents suggests the conclusion that the problem pointed to by Bezák is in spite of its rationale widely ignored.

Region is the lowest spatial unit for quotation of the GDP/capita value. It is the unit to which regional planning is applied. These are the principal reasons why division of Slovakia into regions, which represent the level NUTS III, became a certain standard in the study of spatial differentiation (mostly created and applied by economists). The results reached at the level of regions are presented in media in Slovakia and abroad what distinctly contributes to comprehension of spatial differentiation existing in Slovakia pre-

cisely by means of these comparatively big spatial units. Even in spite the fact that the values of selected quality of life indicators are also accessible at the level of municipalities, hence there is the possibility to create any and from the geographic point of view more rational spatial units, it was decided to present differences between urban and rural municipalities at the level of region. Basic data about number of municipalities of both urban and rural character in the individual regions, about population with permanent residence in these municipalities are presented as the background information (Table 1).

Table 1. Number and population of urban municipalities versus number and population of rural municipalities in administrative regions of Slovakia (2001)

	Number of municipalities			Number of population in municipalities		
Administrative region	urban	rural	all	urban	rural	all
Bratislava	7	65	72	503 413	95 602	599 015
Trnava	16	233	249	277 403	273 600	551 003
Trenčín	18	258	276	350 456	255 126	605 582
Nitra	15	335	350	343 157	370 265	713 422
Žilina	18	297	315	354 957	337 375	692 332
Banská Bystrica	24	492	516	359 889	302 232	662 121
Prešov	23	643	666	398 181	391 787	789 968
Košice	17	422	439	434 650	331 362	766 012
Slovakia	138	2745	2883	3 022 106	2 357 349	5 379 455

Source: Výsledky sčítania obyvateľov, domov a bytov 2001, Štatistický úrad SR (2003), CD ROM. Bratislava.

Differences in surface area are interlinked with those in number of municipalities. Both data may demonstrate disproportion of the new administrative division of Slovakia. The territory of extremely small region Bratislava consists only of 65 rural municipalities and 7 urban municipalities. On the other side, the territory of region Prešov (the largest in Slovakia) is composed by as many as 643 rural municipalities and 23 urban municipalities. Region Bratislava represents only 2.5% in the total number of both types of municipalities in Slovakia compared to region Prešov with 23.1%. Comparison of these two limit values shows that the difference between the first and the last region is more than 9-fold.

In case of population number, the proportionality of administrative units looks completely different. The concentration of 11.1 % of total population of Slovakia lives in the territory of region Bratislava (population number of region Trnava is lower), prevailingly in urban municipalities (84.0 %). Distinct disproportion in representation of urban and rural population in Bratislava region contradicts the most populated region Prešov (14.7% of total population), where the shares of population living in urban and rural municipalities are practically the same. Repeated comparison of two limit values of regions Trnava and Prešov reveals that in case of population number the difference between the first

and the last region dropped to 1.4-fold what practically proves balanced administrative units as far as the population number is concerned but also extreme differences in size of municipalities and population density. While the average size of municipality in region Bratislava is population 8,320 that in region Prešov is only 1,186. Such great size differences also involve many consequences concerning differences at the level of selected life quality indicators.

GEOGRAPHICAL ASPECTS OF QUALITY OF LIFE

Authors who have been studying the issue of quality of life state: *"There is no „general agreement" on the components, which make up quality of life. There is also dissent about the meaning of the term „quality of life", how to measure it, etc."* (Ira 2005, p. 84). However, the essential thing and from the point of view of research into different aspect of quality of life a very important fact is that the attributes of comprehensiveness and two-dimensionality expressed not only by objective reality of the examined indicators but also by their subjective interpretation are immanent to theoretical and application approaches of the representatives of several scientific disciplines. Geographic approach to life of quality investigation is based on the assumption that it has also got a spatial dimension. Quality of life in one geographically delimited area can be and is as a rule different from quality of live in other area. Massam (2002) talks about existence of what is referred to as "geographical dimension of quality of life" which can be assigned to conditions in which people live (for instance quality of dwelling) or to certain attributes of people themselves (for instance health situation or income level).

Choice of indicators that characterize the quality of life in geographically delimited area and confirm or reject values of subjective indicators is closely connected with study of "objective" quality of life (Andráško 2004). Choice of suitable "objective" indicators from a wide scale of statistically monitored, often also contradicting indicators for assessment of quality of life along with result interpretation is often heavily criticised. It is obvious that the selection of indicators used by scientist for characterization of geographical unit and its population can be purpose-bound and subjective quality of life interpretation can have far-reaching consequences for individual regions and towns as regards their competitiveness, population growth, business activities and visiting rate. Some regions and towns can be disadvantaged other can enter the category of not attractive spatial units in terms of permanent residence, entrepreneurial activities or leisure. As an example of application of heterogeneous quality of life indicators to characteristics of spatial differentiation in life conditions let us mention the studies of Ira (2003, 2005). In the first study he pays attention to differentiation of life quality in Slovakia by application of a series of indicators concerning the equipment of flats and its level. He dedicated his second study (Ira 2005) to differentiation of life quality in Bratislava. He works with smaller spatial units but the scope of used indicators is considerably richer. For their variety, they are classified into groups which represent 6 quality of life domains – environmental quality, dwellings equipment, ICT (information and communication technologies) facilities, physical and social health, social infrastructure and socio-demographic situation. Some of the used indicators, which are available for all municipalities in Slovakia, are also ap-

plied to the comparison of urban and rural municipalities in administrative regions of Slovakia. The principal aim of this study is not a comprehensive view of the quality of life issue, it is rather an illustration of varied manifestations of differentiation of quality of life in urban and rural space of Slovakia (intraregional inequalities) depending on specific physical and human geographical features of the delimited administrative regions (interregional inequalities).

URBAN VERSUS RURAL MUNICIPALITIES – AGEING INDEX

The human effort to attain a quality dwelling is natural. People are trying to choose such a place for their life, which is closest to their idea of optimal living place. Their ideas are influenced by a number of varied factors that every individual evaluates. He/she makes his or her multicriterial evaluation followed by final decision depending on personal priorities, which are often products of individual's life stage. In productive age, the choice of living place mostly depends on choice of working place. Individual jobs are not evenly distributed. They concentrate in urban municipalities, close to labour sources. During socialism, generation of jobs and construction of flats were closely associated. Many, above all industrial enterprises had their own pool of dwellings (flats) and the individual who tried to optimise cost of commuting often decided to change living in rural area for living in the town. It means that industrialization and urbanization were closely associated processes while consequences became evident in both types of municipalities. Rural municipalities were loosing their productive population component, what definitely reduced their action capacities and possibilities of demographic and economic development. On the other side, the influx of rural population to towns was, as a rule, accompanied by deterioration of life quality in towns.

Population transfers between the rural and urban municipalities not only ended up by absolute changes in their population number but they also affected their contemporary age structure. Municipalities with a high share of postproductive population and low share of preproductive population anticipate problems in term of their future endogenous development. The relationship between these two population components can be expressed by the ageing index, which expresses the ratio of postproductive to preproductive population component. Ageing index expresses how many males older than 60 and females older than 55 correspond to 100 boys and girls aged up to 15. The lower the ageing index of individual municipality is connected with the more progressive population and there are (hypothetically) more favourable conditions for endogenous development. As the ageing index does not specify the inner composition of the two compared population components (for instance ethnic structure, which in the consequence of specific social, demographic and cultural behaviour of the Roma population plays an extra important role in the context of Slovakia), no definite interpretation of ageing index value exists in terms of life quality comparisons. But is possible to express its differences in urban and rural environment of administrative regions of Slovakia (Table 2)

With the exception of region Bratislava values of ageing index are higher in rural municipalities in all regions and they decrease in the direction from the west to the east. The lowest ageing index value was found in region Prešov and the highest is in region

Table 2. Values of ageing index in urban, rural municipalities separately and in total in administrative regions of Slovakia

Administrative region	Ageing index		
	Urban municipalities	Rural municipalities	All municipalities
Bratislava	130.6	112.7	126.8
Trnava	90.8	114.4	102.8
Trenčín	90.6	124.0	104.4
Nitra	94.2	133.5	114.5
Žilina	79.4	87.4	83.3
Banská Bystrica	91.6	117.9	103.9
Prešov	62.3	76.3	69.7
Košice	77.8	90.3	83.7
Slovakia	88.4	103.0	95.2

Source: Výsledky sčítania obyvateľov, domov a bytov 2001, Štatistický úrad SR (2003), CD ROM. Bratislava, own calculations.

Bratislava. Differences between urban and rural municipalities in these two regions are evident above all in case of age composition of population in urban municipalities. While the aggregated ageing index of urban municipalities in Bratislava region exceeds by far the national average (Figure 3), urban municipalities of region Prešov are characterized by its very low value.

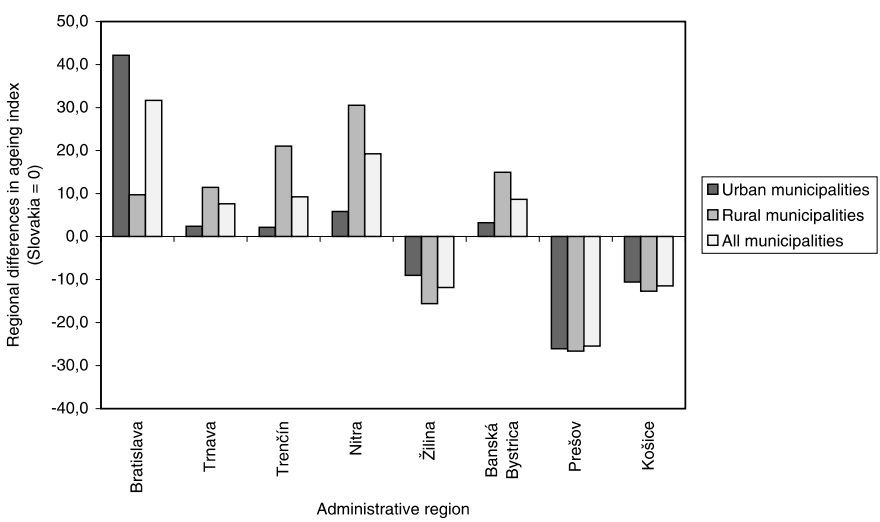


Figure 3. Regional differences in ageing index (2001)

Decomposition of the ageing index into individual components can suggest the reason of extra large differences existing between the two spatial units. While the share of postproductive population is higher in urban municipalities of the region Bratislava in comparison with preproductive population, the situation is opposite in urban municipalities of the region Prešov. The causes lie in ethnic structure. Prešov region is remarkable for the biggest share of Romas characterized by the high natality level (high share of preproductive population) and low average life length (low share of postproductive population). Podolák (2005) writes about specific demographic features of the Roma population in Slovakia. Specific features are also attributable to the region Bratislava – they relate to the share of individual population components. Possibilities of professional promotion of productive population and adoption of demographic behavioural models of the advanced countries manifest by lower natality on the one side and increase of average life expectancy due to above-average concentration of quantity and quality of health care facilities and staff on the other.

The decomposition of regional ageing indexes also revealed that a bigger share of preproductive population lives in rural municipalities not only in Slovakia as a whole but also in six administrative regions – Bratislava, Banská Bystrica, Košice, Prešov, Trnava, and Žilina. The difference between the rural and urban municipalities in region Nitra is not specified and as far as the region Trenčín is concerned, the preproductive population component is represented more in urban than in rural municipalities. Similar comparison of regional postproductive population components leads to the result that this population component is more distinctly represented in rural municipalities in all regions of Slovakia.

The regional ageing index values in urban and rural municipalities are presented in Figure4. The trend line suggests that with the increasing ageing index value in urban municipalities is associated with its increase in rural municipalities. Region Nitra differs

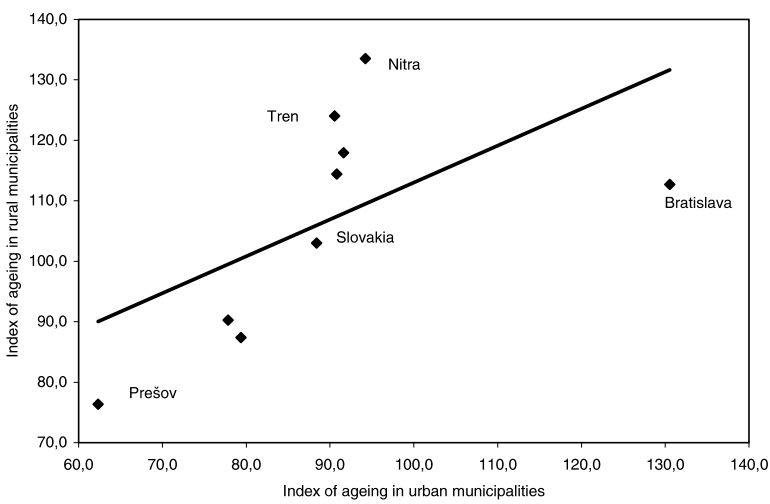


Figure 4. Interrelationship between the indexes of ageing in urban and rural municipalities (2001)

most from this trend – its ageing index in rural municipalities is extra higher regarding its value in urban municipalities. This situation has been caused by the highest representation of postproductive population in rural municipalities compared to all regions of Slovakia.

Rural municipalities of region Nitra as a rule are big and amenities of the municipality correspond to its size. Older population that was employed in agriculture in the past is "bound" to land and work in their gardens. Due to the relatively good services (transport, shopping or health care) they do not feel extra pushed to move to towns. In a larger community of rural population an option of broader social contacts and activities exists. It prevents exclusion of the older population and in this way contributes to its stabilization. Numerous studies (for instance Falťan and Pašiak 2004) emphasize the factor of relative geographic position and size of rural municipalities in stabilization of its permanent residents and their future socio-economic development.

URBAN VERSUS RURAL MUNICIPALITIES – SHARE OF OUT-COMMUTERS

Journey to work is the process with economic, social, cultural and environmental implications both from the point of view of an individual and the whole society (Pooley, Turnbull 1999). The possibility to work at one's living place is considered a significant asset contributing to the increase of life quality of population in municipalities with available dwellings and jobs. Records on population mobility motivated by work reflects spatial distribution of workplaces in urban and rural municipalities and based on the balance between the in- and out-commuters makes it possible to identify the main centres of commuting. The decisive criterion for the records on commuting is passing the frontiers of the territory of municipality where the person applied for residence (with the exception of urban districts in municipalities Bratislava and Košice, in which case commuting to other urban districts is filed as well).

Comparison of regional shares of commuters from urban and rural municipalities confirmed the hypothesis about higher out-commuting in regions with lower unemployment rate on the one side, and on the higher out-commuting from rural area than from town (Table 3). There are less work opportunities in rural area in all administrative regions. This is the reason why it is presumed that the movement heads mostly from rural municipalities to urban municipalities. The highest out-commuting was found for rural municipalities of regions Trenčín and Bratislava, which are characterized by high urbanization level and the lowest unemployment level. The relatively short distance between urban and rural municipalities and the above average availability of transport infrastructure also favour out-commuting from rural municipalities of these two regions. Situation is completely different in regions Banská Bystrica and Košice where the share of out-commuters from rural municipalities is the lowest. The synergy effect of high unemployment rate, big distance between urban and rural municipalities, and the under-average availability of transports caused that the share of out-commuters from rural municipalities is the lowest.

Big regional disparities were also found in out-commuters from urban municipalities. Above all inhabitants of urban municipalities in regions Nitra and Banská Bystrica find

Table 3. The share of out-commuters from urban, rural and all municipalities in administrative regions of Slovakia (2001)

Administrative region	The share of out-commuters from municipalities		
	urban	rural	all
Bratislava	53.0	54.0	53.2
Trnava	23.4	49.2	35.8
Trenčín	22.2	54.2	35.2
Nitra	16.3	44.3	30.1
Žilina	18.9	51.0	34.0
Banská Bystrica	16.5	41.5	27.4
Prešov	18.2	46.0	31.2
Košice	37.9	42.8	39.9
Slovakia	27.7	47.1	35.8

Source: Výsledky sčítania obyvateľov, domov a bytov 2001. Štatistický úrad SR (2003), CD ROM, own calculations.

jobs in towns where they live. Only a sixth of economically active population of these towns (16.3 % and 16.5 % respectively) does not work at their place of living. The number and structure of offered jobs in towns of both regions is satisfactory for the majority of their inhabitants or there is no such municipality in close environs that should be able to compete with their job offers. The effect of hierarchically higher positioned town on the towns in its hinterland is evident in case of region Bratislava, where the share of out-commuting exceeds a half of economically active population. The job offer in town Bratislava is attractive for inhabitants of other urban municipalities situated in a short distance from the Capital of Slovakia and the transport communication is good. Intraurban movements observed at the level of five urban wards of Bratislava also contribute to the high share of out-commuters in region Bratislava. Similar situation is characteristic for urban municipalities of region Košice, where the share of out-commuters is further increased by intraurban movements between the four urban wards of Košice (Figure 5).

Commuting to work often means the effort to reach optimal spatial movement and search for agreement between the place of living and place of work at a minimum cost and maximum profit. The relatively satisfied commuter is desired result. However, life of quality evaluation by application of indicator of out-commuter share runs into several problems. The low share of out-commuters can suggest not only saturation of jobs by inhabitants of municipality, but also under-dimensioned job offer in the environs of individual municipalities which manifests by an increased regional unemployment rate. If the first case, i.e. quality of life of inhabitants with sufficient work opportunities was evaluated positively, in the second case the low out-commuting values reflect a lower quality of life of inhabitants in municipalities in question. Analogous statement is true for high values of out-commuter share which can hint either at shortage of work opportunities in

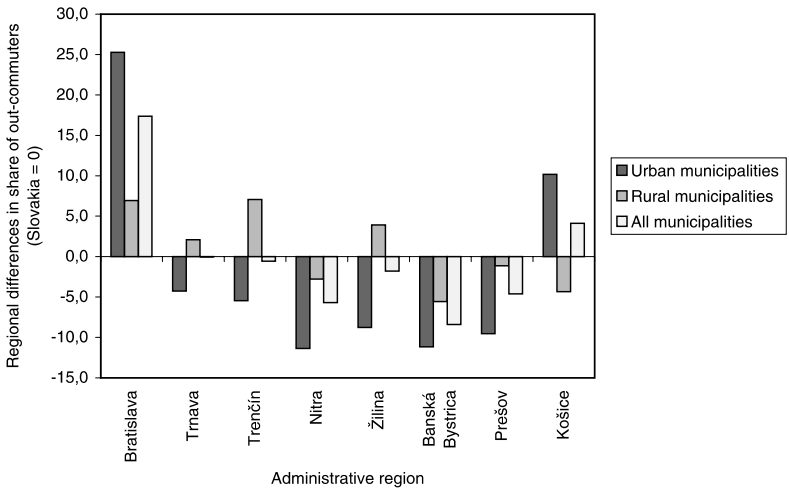


Figure 5. Regional differences in share of out-commuters (2001)

main centres of living (lowered quality of life level) or it can mean positively perceived spatially diversified offer of attractive jobs on a relatively small territory (example of region Bratislava).

URBAN VERSUS RURAL MUNICIPALITIES – SHARE OF DWELLINGS WITH INTERNET

Development of information and communication technologies (ICTs) means enormous changes in life of humans and distinctly determines their quality of life. In spite of prevailing positive features attributed to the ICT use, a definite answer to evaluation of the ICT use impact on individuals or society's quality of life still does not exist. One of the causes is the temporal dimension of penetration of the ICTs into personal or work life of people. Short-term visions about reduction of differences in the ICT use among population or territories did not become reality. The spreading of personal computers copies the level of economic prosperity of individuals and territories. On the other side, the willingness and capacity to adopt novelties reflect a distinct income, age, and education differentiation of population in particular geographic areas). It means that the positives among which above all removal of geographical barriers in economic, cultural, and social life is emphasized, free access to information and its efficient use, improved access to public services and other is practically available only to a limited population group (Varelidis, 2003; Malecki 2003).

Only 3.26 % of dwellings in Slovakia had Internet installed in time of the most recent Population Census in 2001 (Table 4). Compared with other countries in Europe, this value is very low and suggests still existing reserves in the Internet use. In spite of very low

share of dwellings equipped with Internet, its use by the Slovak population is considerably higher. As the repeated enquiries show, population of Slovakia mostly uses Internet at work or in schools. Apart from search for information necessary for work task, most of the user attention focuses on typical leisure activities that citizens of advanced European countries pursue at home: social contacts by means of electronic mail, browsing in search of websites with entertaining contents (music, games, and movies). The enquired respondents see causes of limited installation of Internet in private dwellings (above all in urban environment where the technical conditions are fulfilled) above all in high fees. It is then reasonable to expect that the increase of average wages accompanied by decreasing fees for Internet use will finally prompt the increase of households connected to Internet.

Table 4. The share of dwellings with Internet in urban, rural and all municipalities in administrative regions of Slovakia (2001)

	The share of households with Internet in municipalities		
Administrative region	urban	rural	all
Bratislava	7.33	3.40	6.82
Trnava	3.99	1.68	2.91
Trenčín	3.61	1.54	2.78
Nitra	3.89	1.44	2.68
Žilina	3.68	1.38	2.65
Banská Bystrica	3.63	1.41	2.66
Prešov	3.52	1.29	2.54
Košice	3.69	1.43	2.84
Slovakia	4.39	1.53	3.26

Source: Výsledky sčítania obyvateľov, domov a bytov 2001, Štatistický úrad SR (2003), Bratislava CD ROM, own calculations.

Regional differences like those between urban and rural municipalities in connection to Internet were enormous in time of the most recent census: 81.3 % share of dwellings with access to Internet (of total more than 54 thousand dwellings) existed in a small number of urban municipalities. The remaining 18.7 % of dwellings with Internet were in rural municipalities *(for comparison, the differences in ownership of PC were no so great – 75.3 % of dwellings with PCs were in towns and the rest were in rural area).* The observed differences in access to Internets in dwellings were due not only to differences in telecommunication infrastructure, but also in the demand for its installation. Population of rural municipalities is older, with lower educational level and lower income what is also reflected in a lesser interest in use of the relatively expensive Internet services.

As far as the accessibility of Internet in dwellings is concerned, Slovakia should be divided into region Bratislava where as many as 27.5 % of dwellings with Internet existed in 2001 and the rest of Slovakia on the other side. Figure 6 depicts the regional differences.

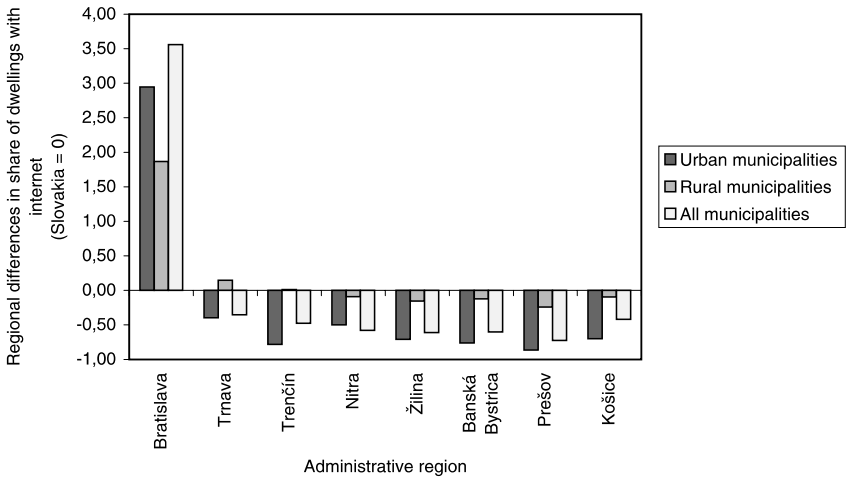


Figure 6. Regional differences in share of dwellings with Internet (2001)

A close relationship exists between the availability of Internet in dwellings at the regional level and regional performance expressed by the GDP/capita, unemployment level or average monthly wages. Therefore the access to Internet represents some synthetic indicator of economic quality of life, which higher values are found in advanced and densely populated western part of the country. Introduction of Internet to dwellings and households is a process of diffusion of innovation, which comes from the core (Bratislava) and possesses traits of neighbourhood-linked or hierarchic nature. This is the reason why there are differences in Internet introduction influenced not only by size categories of municipalities, but also by distance from Bratislava. The lowest level of dwellings equipped by Internet was found in region Prešov where lagging of both urban and rural municipalities behind the national average is the most evident.

CONCLUSION

Application of what is referred to as "objective" quality of life indicators to any geographic units always results in deepening our knowledge about spatial differentiation of Slovakia's territory. Differences between urban and rural municipalities, as well as between individual regions of Slovakia are quite pronounced and undoubtedly affect population's quality of life. The significance of applied indicators though, should not be

overestimated. On the one side, they concern only a small group of indicators. When man chooses the place of permanent residence normally takes into account a bigger number of indicators of different nature and subjectively scrutinizes and assesses them, what makes interpretation of life quality ambiguous. It is the second factor for which results concerning spatial differentiation of Slovakia based on chosen quality of life indicators cannot be overestimated. Decision making of man is not economically rational but mostly based on subjective perceptions. He seeks ways to achieve overall satisfaction. The idea of such satisfaction though, does not only change depending on age but also on development of society, technological changes and preferred way of life. In past, the movement of young and educated population from rural municipalities to towns was observed. Young people left in search of jobs and more comfortable housing. Today it is natural for a considerable group of young (or retired persons), educated, and well-to-do population to leave town and to live closer to nature in the rural area. With the changes of values are connected the changes in distribution of population. Thanks to the new ICTs, peripheral areas (as place of living) become more attractive for selected population groups. It is justified to believe, that this trend will also continue in the near future and will bring further possibilities for development of the rural area.

ACKNOWLEDGEMENT

This article was prepared as part of the Project No. 2/6038/26 "Economic performance and competitiveness of localities and regions", funded by the Slovak VEGA Grant Agency. The author thanks to the Slovak VEGA Grant Agency for its financial support.

Translated by H.Contrerasová

REFERENCES

Andráško, I. (2004) *Kvalita života a mestské prostredie: základné prístupy a koncepcie,* Geografický ústav SAV, Bratislava, manuscript.

Bezák, A. (1999) Development of urban and rural population in Slovakia between 1970 and 1995, *Geographica Slovenica* 31, 170–177.

Bezák, A. (2001) O regionálnych trhoch práce, nových krajoch a tokoch nezamestnaných, *Geografický časopis* 53, 295–305.

Elands, B.H.M., Wiersum, K.F. (2001) Forestry and rural development in Europe: an exploration of socio-political discourses, *Forest Policy and Economics* 3, 5–16.

Falťan, Ľ., Pašiak, J. (eds.) *Regionálny rozvoj Slovenska – východiská a súčasný stav,* Sociologický ústav SAV, Bratislava.

Ira, V. (2003) *Územná diferenciácia vybavenosti bytov v SR ako jednej z dimenzií kvality života,* in Vaishar, A., Ira, V. (eds.), *České a slovenské regiony na počátku třetího milénia*. Brno, Ústav geoniky Akademie věd České republiky, 20–26.

Ira, V. (2005) Quality of life and urban space (Case study from city of Bratislava, Slovakia), *Europa XXI*, 12, 83–96.

Ivanička, K. (1968) Problems connected with the research of regions in Czechoslovakia, *Acta Geographica Universitatis Comenianae, Economico-Geographica* 8, 11–52.

Malecki, E.J. (2003) Digital development in rural areas: potentials and pitfalls, *Journal of Rural Studies* 19, 201–214.

Massam, B.H. (2002) Quality of life: public planning and private living, *Progress in Planning* 58, 141–227.

Podolák, P. (2005) *Demographic changes of rural population in Slovakia,* in Floriańczyk, Z., Czapiewski, K. (eds.), Rural development capacity in Carpathian Europe, *Rural areas and development* 3, European Rural Development Network,Warsaw, 49–62.

Pooley, C.G., Turnbull, J. (1999) The journey to work: a century of change, *Area* 31, 281–292.

Švecová, A. (1998) Zmeny vo vývoji prirodzeného pohybu mestského a vidieckeho obyvateľstva v okresoch Slovenska v rokoch 1985–1995, *Acta Facultatis Rerum Naturalium Universitatis Comenianae, Geographica* 41, 209–224.

Výsledky sčítania obyvateľov, domov a bytov 2001, (2003) Štatistický úrad SR, CD ROM, Bratislava.

Vaishar, A. (2005) *Regional periphery: what does it mean?* in Czapiewski, K., Komornicki, T. (eds.), *Proceedings Warsaw Regional Forum 2005*, Warsaw.

Varelidis, N. (2003) *Information society and sustainable rural development,* Euro-academy thematic guide series – Thematic guide two. Athens, PRISMA – Centre for Development Studies.

EUROPA XXI
2006, 15: 103–118

SILICON SAXONY – PROCESSES OF TRANSFORMATION IN THE LAST FIFTEEN YEARS

JOANNA WIĘCŁAW-MICHNIEWSKA and PIOTR TRZEPACZ

Instytut Geografii i Gospodarki Przestrzennej, Uniwersytet Jagielloński
ul. Gronostajowa 7, 30-387 Kraków

Abstract: The eastern part of Germany functions in the European mentality as a problem area in which it is possible to observe a number of negative social and economic processes, i.e. those of depopulation, a high level of poverty, and a high unemployment rate. This general opinion is in at least partial need of verification, on account of the transformation processes now taking place in Saxony. What is currently dubbed "Silicon Saxony" is beginning to change the traditional image it has had hitherto. The economic development of Saxony is correlated with that of the whole transport system, including airports and transport via inland waterways, with valuable features of the natural landscape and with the development of education and the tradition of innovation. Those opportunities are important factors underpinning the location of high-tech industries. Numerous examples confirm the legitimacy of the aforementioned new name. In overcoming many complicated problems (i.e. the transformation of the obsolete mining industry in the east of the region), Saxony is trying to join "central" regions of Europe.

Key words: transition, suburbanization, ageing, depopulation, high technologies, knowledge-intensive services, innovation, human capital

INTRODUCTION

The transition processes in the economy and society of the eastern part of Germany have also brought into play a set of structural changes in Saxony. One of Germany's "New federal states"[1], this played the role of "engine" or "motor" for the economy during the

[1] Names of those federal states created following the reunification of Germany

era of the GDR[2]. The new reality, operation on the free market and participation in the unification of Europe, not only gave rise to many new opportunities for Saxony, but also showed the weakness of the previous system. On the other hand, Saxony may be a good example of positive effects of the transition in many fields.

The main research questions are: "Is it possible for positive economic processes (the modernization of industry structures and locating of high-technology industries) to co-exist with negative socio-demographic processes?". The authors present the influences of Germany's reunification on demography, migration patterns and the economy in one of its federal states – Saxony. The presentation of factors that occur in Saxony and are useful (or even desirable) for the modernization of industry (from traditional to innovative) is proof for the authors that, even if Saxony still has a long road to cover to be really "silicon", its strong potential offers very good prospects for its future.

LOCATION

Saxony is one of Germany's 16 federal states. It is one of the so-called "new lands" created – along with Mecklenburg-Vorpommern – during the process of reunification of the former Federal Republic of Germany and German Democratic Republic. Occupying an area of 18,413 km^2, Saxony is the tenth largest German state. Undoubtedly, the state's situation in political terms may be one of its greatest advantages. Saxony borders upon Poland, the Czech Republic and the four German federal states of Bayern, Sachsen-Anhalt, Turing and Brandenburg. This means that Saxony's eastern and south-eastern frontiers have not since 2004 been borders of the European Union, when Poland and the Czech Republic acceded thereto. In the beginning, this fact was considered in terms of its being a problem. It was thought that, with the enlargement of the EU to the east, there would be an outflow of capital expenditures from the eastern German states to Polish Lower Silesia (Dolnośląskie), for instance. However, it soon became clear that the regional partnership would be to Saxony's advantage, even if the effects would only manifest themselves in the future.

Saxony always drew some benefit from its transitional location, especially in the east-west direction. In German mentality (and to a great extent in the minds of its own inhabitants), Saxony is a peripheral region, lying far away from the German "centre" comprising southern states (especially Bavaria, i.e. Bayern) and western ones.

SETTLEMENT NETWORK

A peculiar feature of settlement Saxony is that there is a great congestion of what are known as central places according to Christaller's theory. These are Leipzig and Dresden (each with nearly half a million inhabitants), and the Chemnitz-Zwickau conurbation, in the south-eastern part of this Land. Those three centres show strong relationships, mostly those mediated by commuting (Figure 1). This is a good example of the functioning of

[2] German Democratic Republic

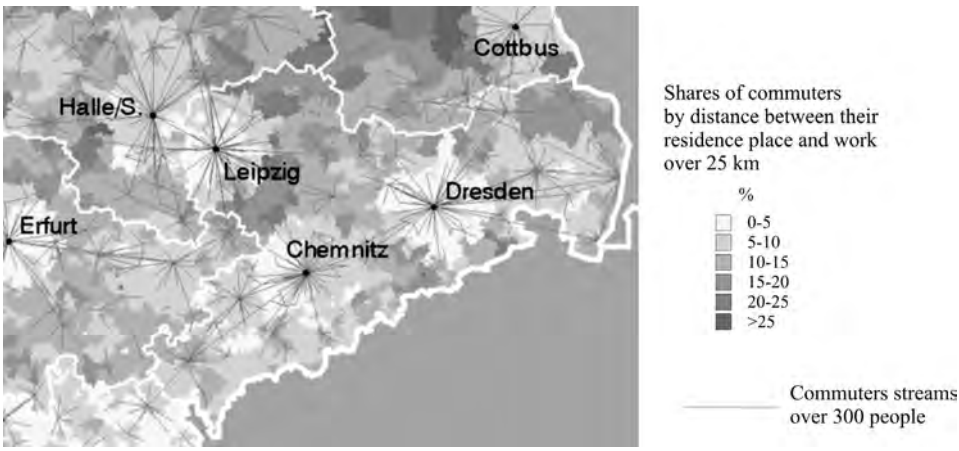


Figure 1. Commuting in Saxony in 1996
Source: Raumordnungsbericht 2000.

the so-called "Saxonian triangle" as a system of economic and social connections. Nevertheless, the interregional ties evidence relations among the centres considered, which are very different, notably in terms of their functions. Leipzig is a trade and exhibition centre of international importance, Dresden a centre of culture and education of a supra-regional scale and high technology, and Chemnitz-Zwickau the centre of an important industrial region that currently leads where the automobile industry is concerned. In Saxony the density of the urban network shows strong regional differentiation. On the one hand, there is the conurbation of Chemnitz-Zwickau and the two great city-regions of Leipzig and Dresden. On the other hand, in eastern and south-eastern parts of Saxony, natural conditions obstructed the development of settlement. But only two German Lands – those of Hessen and Nordrhein-Westfalen – have the settlement net better developed. Such a kind of settlement is often recognised as favourable to the location of high-technology industries. The presence of many urban centres is a pull factor where the development of high-tech industries is concerned.

POPULATION PROCESSES. DEMOGRAPHY

From the demographical point of view, Saxony is in deep regress. During the research period (1992–2004), the population dropped by almost 400,000, or nearly 8%. There were no serious fluctuations, allowing us to infer that Saxony is passing through a considerable crisis where this issue is concerned.

The areas in Germany experiencing population increases in the considered period can be classified into two main groups (Figure 2). There were regions in the best economic situation (like Bayern, central and southern Hessen, western and northern Niedersachsen), and areas adjacent to the largest cities (of Berlin and Hamburg). In Saxony, it

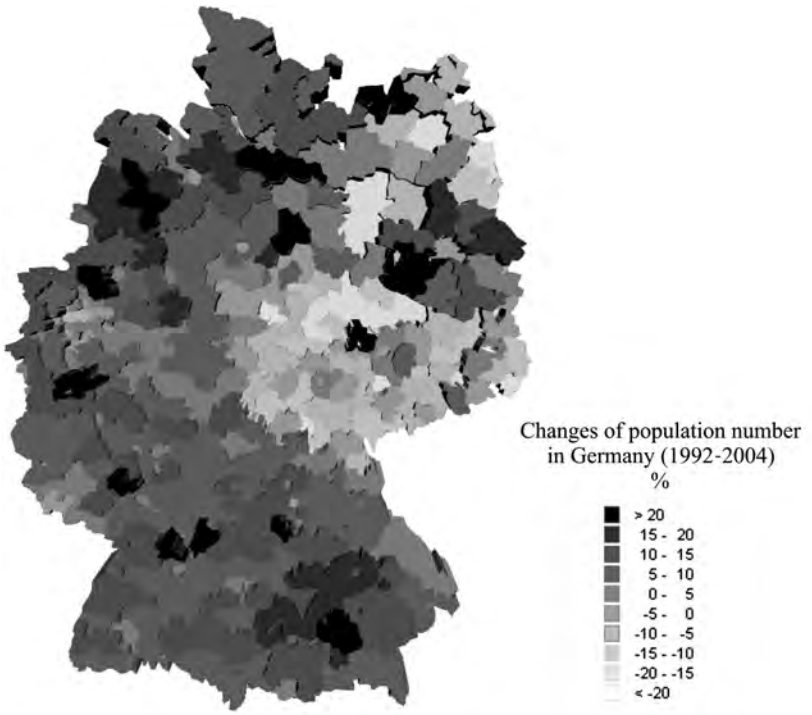


Figure 2. Changes of population number in Germany between 1992 and 2004 (Kreise)
Source: Statistisches Bundesamt Deutschland.

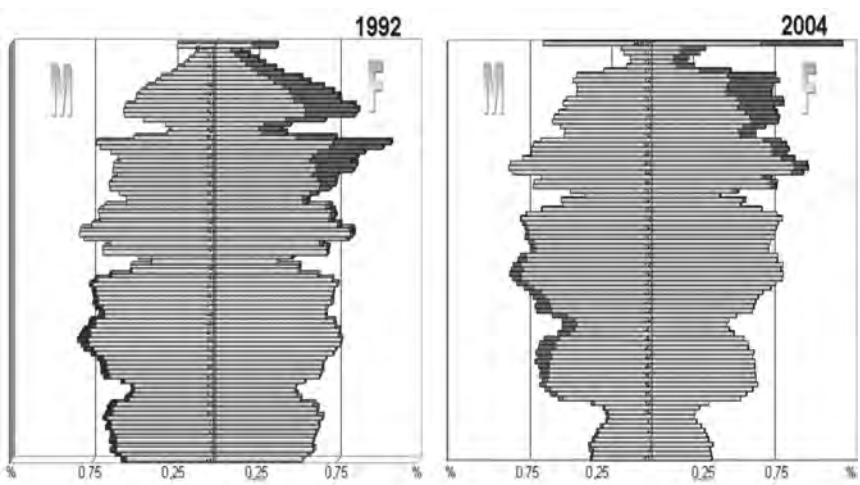


Figure 3. Demographical structures of Saxony population in 1992 and 2004
Source: Statistisches Landesamt des Freistaates Sachsen.

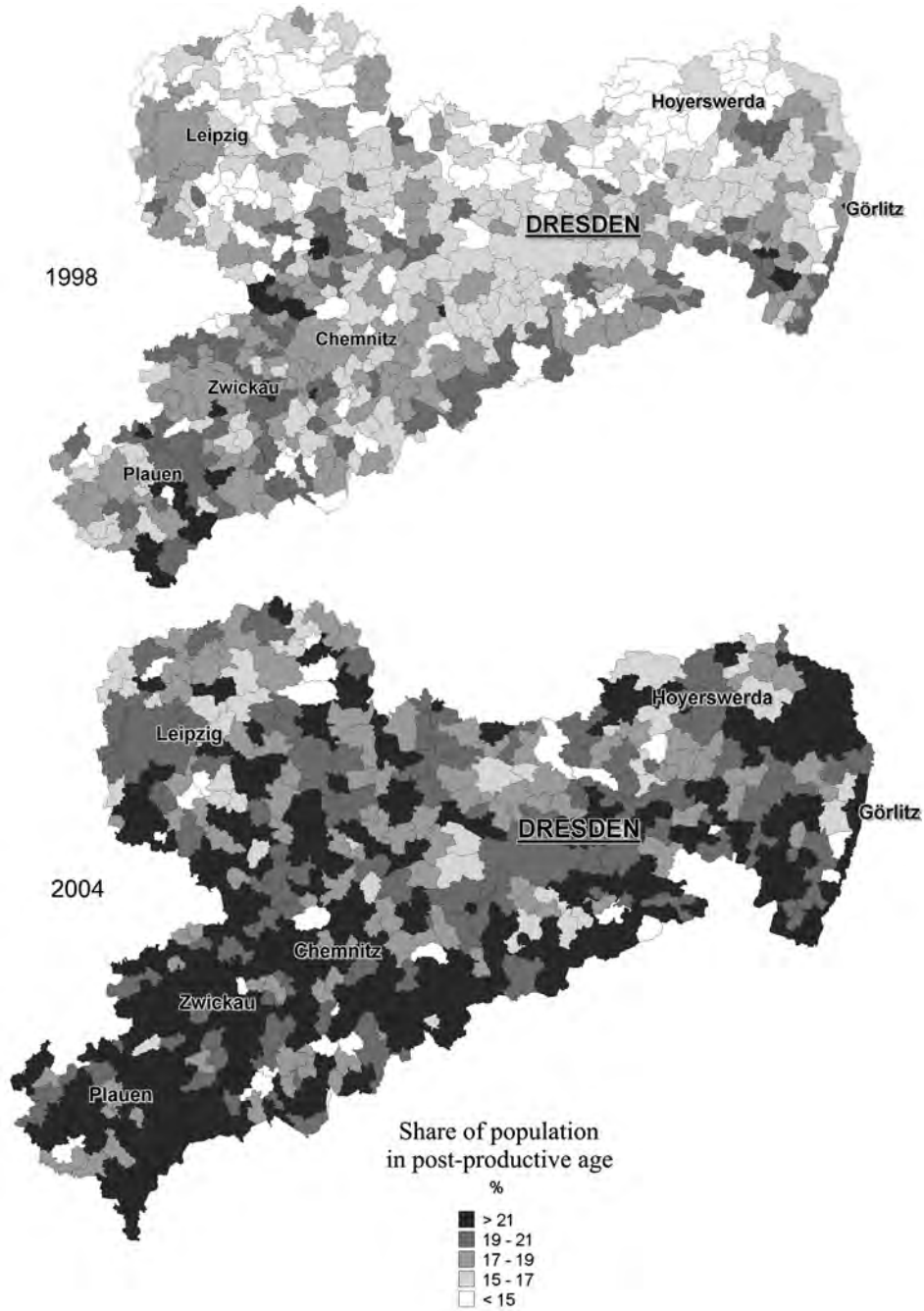


Figure 4. Share of population in post-productive age in Saxony in 1998 and 2004
Source: Statistisches Landesamt des Freistaates Sachsen.

is also possible to observe internal differentiation. The large cities have shown a marked decline in population, while in their nearest suburbs distinct demographic growth was manifested. The outflow from the cities is mainly affecting their central districts. Moreover, the marked depopulation has been in progress for over a decade in mountainous areas, zones of the former intensive development of industry (in the GDR-era) and the Polish-German borderland (where mining in the GDR was concentrated). In the latter cases, the demographic crisis was triggered mainly by economic factors.

The analyses of Saxony's demographic structures (Figure 3) allows for the determination of the degree of advancement of social modernisation and the directions to basic demographic processes. The process of ageing continues. The share of the population aged 90+ tripled, while there were increases in the proportions of the population in all the post-productive age groups. At the same time, the percentage accounted for by the group of pre-productive agedeclined markedly, in the main because of a decline in the birth rate. In the same period, the surplus of men over women of productive age increased. This change is due to an increasing inflow of foreigners who in part replace Saxony's population, especially where unqualified jobs are concerned. The second reason concerns the structure to the emigration, which is dominated by women. This is explained in terms of the better job opportunities in western states, especially where the tertiary sector is concerned.

The intensity of the population ageing process in Saxony is showing very marked spatial differentiation. The highest shares of the population of post-productive age were noted in mountainous zones (Figure 4). There are many settlement units in which births have not been registered for many years. The region of Erzgebierge is an example of the most intensive depopulation. The only zones in which the ageing process is relatively limited in scale are the environs of Dresden and Leipzig this thanks to the process of suburbanisation. At least some part of the inflowing population here comprises young families that rejuvenate the age structure in these areas.

MIGRATION PROCESSES

There is a similarity to the main directions to population outflows from Saxony and inflows into the region. Outflow is mostly westward and southward, due to economic factors. It is in these directions that the former inhabitants of Germany's eastern states (included Saxony) try to find better jobs, far away from the Erzgebierge communities or old coal-mining basins in which there is currently 20-30% unemployment. Similar directions of inflow into Saxony are connected with the demand for highly qualified West German experts, who, it is hoped, will activate this part of Germany. For those young and well-educated Germans, Saxony offers a challenge and a great opportunity for rapid self-fulfilment.

Analyses of migration processes on the micro scale also reveal the degree of suburbanisation. The largest cities in Saxony are observing much more limited inflow rates than the communities in their immediate proximity (Figure 5). Even 8 years ago, the communities lying just by these cities showed the greatest inflow rates of population. Nowadays the same processes are to observed in zones lying yet further from the central cities.

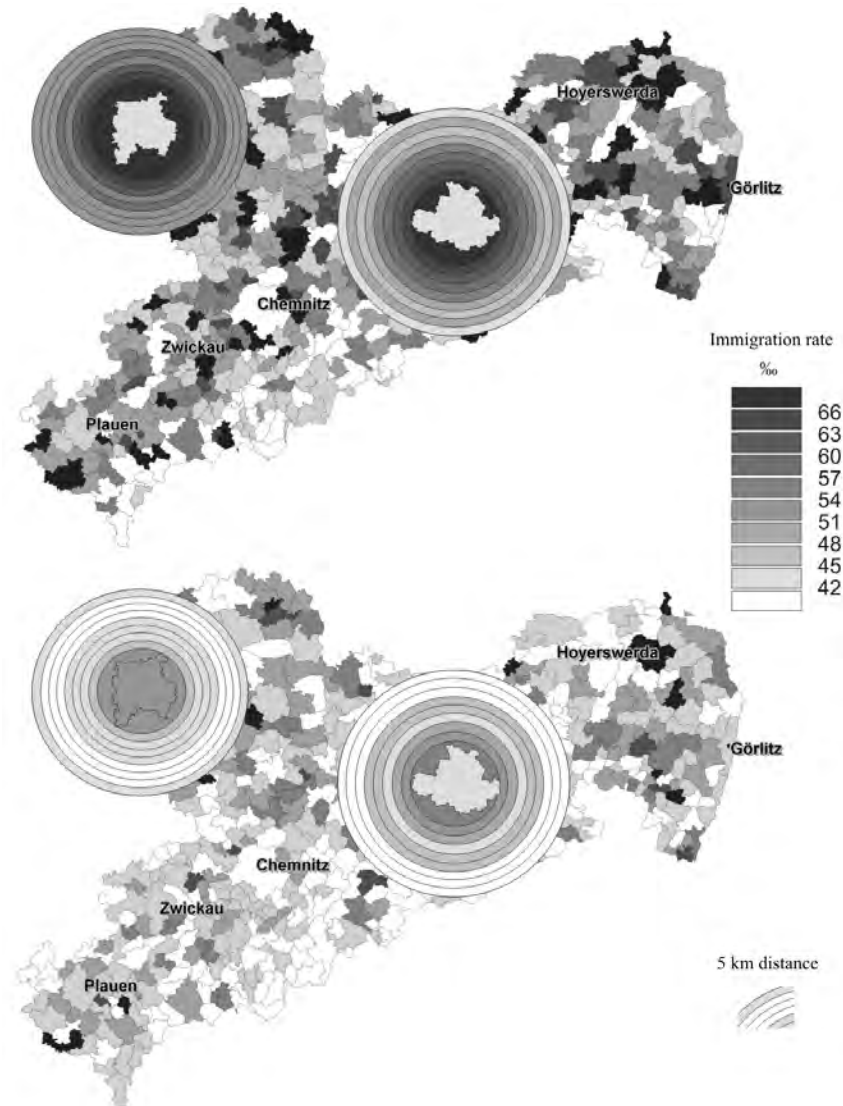


Figure 5. Immigration rate in Saxony in 1998 and 2004
Source: Statistisches Landesamt des Freistaates Sachsen.

Apart from suburbanisation, differentiated rates of population inflow also reflect the directions to economic processes in Saxony. Restructuring of industrial districts, especially that of Chemnitz-Zwickau is connected with increased unemployment, this representing the most important reason for emigration from the region. This outflow unfortunately concerns graduates of Saxony's Universities, whose R&D expenditure rates are

equal to the western German schools. These people, despite enjoying the chance of a job in the new high-technology firms, nevertheless tend to opt for still-better-paid jobs in western parts of the country, or even other states of the European Union. Nevertheless, universities in Dresden or Leipzig have more students from Western Germany, in connection with the more favourable costs of both study and living in Saxony, as opposed to (for instance) Bayern or Niedersachsen. The Eastern German schools are thus becoming more and more popular. Unfortunately, their graduates do not chose local firms subsequently, but those located in Bayern or Baden-Württemberg. The most dramatic situation in Saxony is that in the Czech borderland, where the outflow of the youthful population is bringing about the collapse of the tertiary sector. The remaining population (usually of post-productive age) thus faces an extremely hard situation, losing access to post-offices, communications or the health service over distances of many kilometres.

A clear demographic situation can be observed with spatial differentiation ongoing in line with Webb typology (Figure 6). The areas of the A type form compact zones around the cities of Leipzig and Dresden, due to the scope of suburbanisation processes. There

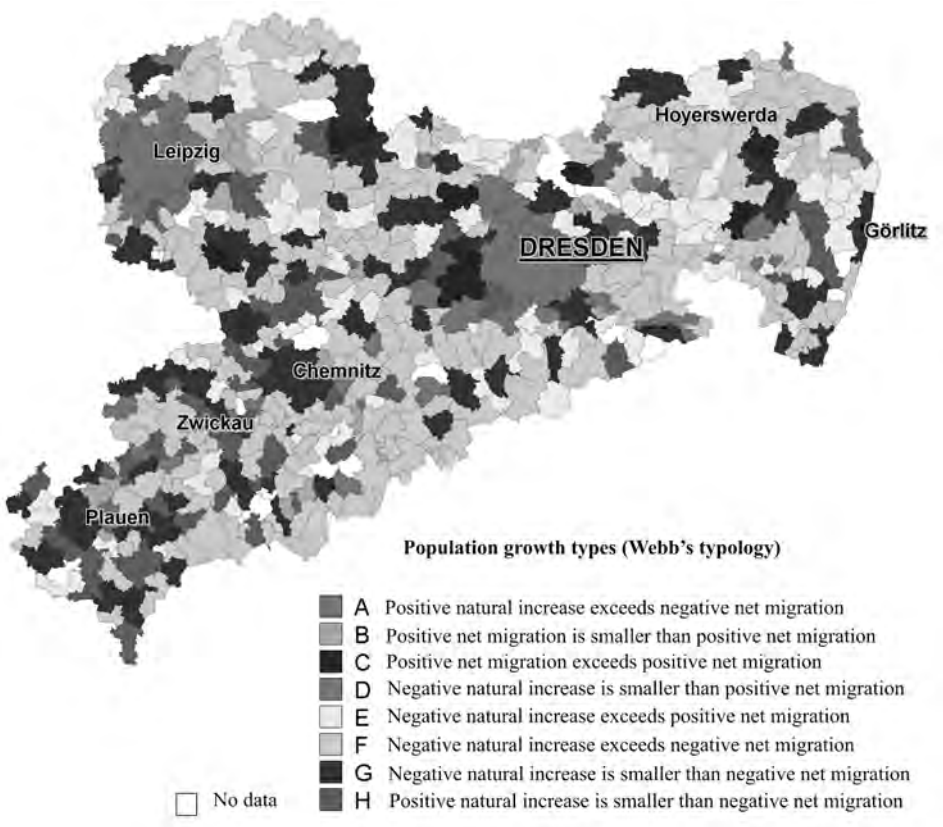


Figure 6. Spatial distribution of types of population growth in Saxony in 2004 – Webb's typology
Source: Statistisches Landesamt des Freistaates Sachsen.

are no such regular zones in the case of localities in the Chemnitz-Zwickau conurbation, perhaps because of the greater number of smaller cities in this area, giving lesser residential opportunities out of the city. The areas in an unfavourable economic situation (Erzgebirge and Niederschlesischer-Oberlausitz) usually belong to the F type.

The presented trends for demographic processes in Saxony show that the economic crisis in the region is behind the enforced population outflow, with resulting deterioration of the demographic structures and to the onset of natural decrease. Another trend is the influence of the largest cities on their hinterlands. A question therefore arises as to how Saxony (or at least parts thereof) can remain zones of location for high-technology industries. Is it normal for negative demographic trends to be accompanied by positive economic ones?

Saxony as a potential region for the location of high-technology industries. Saxony is an example of a European region that proves extremely difficult to classify in central or peripheral terms. Many negative social symptoms are to be observed there above all depopulation, yet the macroeconomic indices are positive and can serve as a pull factor. In general, Eastern Germany is now leaving the epoch of traditional industries behind, such that high-technology firms are its future and hope. One crucial question concerns Saxony's ability to reach the location standards required if such activity is to set up.

The high level of mobility of the advanced-technology industries has often been stressed, along with the considerable internal differentiation these tend to display (Benko 1993). Autonomous requirements of the given technology and the company volume define the pull factors, as well as barriers to location. Human capital is usually treated as the most important factor, decisive in the location of the given activity within the given area. Because of the type of work, the most highly-skilled manpower is badly needed. But the needs of lower rank, also an important aspect of the tertiary sector, have also to be met. Where Germans are not interested in the jobs required, the situation is taken advantage of by foreigners, who occupy this part of the labour market. In Saxony the problem of the educational structure of the population is peculiar. This state has a considerable share of university graduates among its 25-64 year-olds, as a result of the quality and offer Saxony's university education is able to provide. Another (and negative) factor is the population outflow, which is mostly made up of educated people. This outflow increases the share of the best-educated strata and strengthens Saxony's image as a state whose population is well-educated and prepared to work in the high-technology industry. No matter which of these two factors is basic in forming the social structure of Saxony, the great number of universities and research centres predestines the region for such activity. But the influence of the universities should not be restricted to the forming of highly-qualified staff. More important is their function as a "…potential knowledge source for companies located in their vicinity" (Gal 2002). Moreover, in the case of Saxony, the universities are interested in undertakings leading to the economic activation of the region. Their projects can be implemented through financial help on the part of business. This is important because many universities, in spite of considerable integration within the national and international knowledge pools, show at least moderated interest in integration with respective regions (Koschatzky-Sternberg 2000).

Access to the large airports of supra-regional significance, developed roads and motorways, modern and fast railways – all are factors making a region attractive when it

comes to industry's location. Where advanced technologies are concerned, communication is based on modern media, though transport infrastructure (speed of movement) is also valuable. As regard Saxony, the situation is favourable. Dresden airport checks in some 1.6 million passengers a year (www.dresden-airport), maintaining stable relations with the largest German airports and with those in Europe and North Africa. The development of the road and motorway networks has been one of the main tasks in the reunification of the divided country. The road network in Saxony is now 36,566 km long (www.sachsen...).

Another factor realized in Saxony is the natural environment. Of course, like many other regions with traditional industry, the region still faces problems with pollution of the natural environment. However Germany has had considerable success, especially in the Ruhr Basin, formerly devastated by the economy, and unable to respect sustainable development principles. Later, along with restructuring, various actions were taken to improve the natural conditions of the region. Finally, this area devastated by traditional industry came to attract modern branches of high-technology industry. Such industry can also be located in Saxony.

The crucial factor in location, always of great importance, is the "climate", the attitude towards new investments at regional/local level. Authorities of particular German states do their best to attract the high-technology industries within their territories, preparing great promotional campaigns and programmes whose aim is to point out the optimal locations, and to create so-called "technology poles" (Benko 1993). This activity is technological-unit orientated. Persons/organizations engaged in strategy creation "…argue for various advantages offered by the given location (temporal accessibility, geographical proximity, etc.)" (Benko 1993). The space of the discussed region is strongly differentiated in this aspect. Considerable potential is enjoyed by the Elbe Valley and the areas close to cultural centres, but most of Saxony's territory needs attention if it is to be interesting to potential investors. Special programmes offer financial incentives encouraging advanced-technology firms to locate. The whole area of Saxony was divided into three zones of priority. The zones of priority I are: the Chemnitz-Zwickau conurbation, the district in the Erzgebirge and the former mining zones. The land authority estimated the division (*Invest in Saxony 2005*). Firms choosing a location is such a zone can be subsidised as regards their expenditure on buildings and equipment concerning technology of production, or software purchases. The size of the subvention depends on numerous factors and is limited, but the support remains an attractive location factor. The smallest amounts of assistance are due to firms choosing priority III zones, those of the cities of Dresden and Leipzig. But those subventions are in conflict with European Union policy; hence conflicts between Brussels, Berlin and Dresden are probable.

Innovation tradition. Innovation processes are usually analysed on the global, national and sub-national scales, as well as in regard to the region, city and locality (Bunnell & Coe 2001). The global aspect links up with universal trends to be observed in the world economy. Innovation is a global trend, sometimes initiated by such international or supranational organizations as the European Union. Saxony is participating in them.

Various terms have been used to describe areas developing dynamically. In the relevant bibliography one may find references to mirrors, technopoles, learning regions and innovation milieux. All those terms concern "…high-intensity interactions involving ele-

ments both tangible (e.g. economic, social and political institutions) and intangible (e.g. tacit knowledge and know-how conventions)" (Bunnell and Coe 2001). In many respects, Saxony meets the criteria for an area of innovation, with at least some its districts capable of being treated as local/regional innovation centres. Saxony is also an industrial region undergoing transformation. A question remains, however, as to whether the immediate proximity of such a central region as Bavaria will leave Saxony vulnerable to "the shadow effect".

THE MACROECONOMIC SCOPE OF CHANGES

Analyses of Saxony's economic position in comparison with those of other Lands reveal that the region – notwithstanding differences with such German leaders as Bayern, Hessen and Baden-Württemberg – is obtaining good economic results that are better than in the rest of the formerly East-German regions, and even some western ones. The dynamics to processes in Saxony's economy are among the best and, what is more, the positive trends are being sustained.

When it comes to the measure of gross domestic product (GDP) most commonly applied to economic development, Saxony remains far below the German leaders. The region would be making great headway if it reached a GDP per capita level of 20,000 euros. At present the per-head GDP is at a little over of 1/3 of that. Likewise, Saxony's GDP is much below the German national average.

However, GDP growth is observable, its value is not sufficient especially with regard to the funding allocated by the federal budget to Eastern Germany, also Saxony, since Germany's reunification. The issue of financial assistance to Eastern Germany from the central budget is perceived in a negative light by the public in western parts of the country. This problem is the subject of particularly heated discussion at the time of election campaigns. Successive governments are thus evaluated in line with the efficiency of the actions they take to bring about faster progress with convergence.

It is rather difficult to estimate the efficiency of the works undertaken (leaving aside the question of the sources of financial support), because this depends on the initial valuation. However, negative opinions dominate in line with the still-tangible gulf between Saxony and the western parts of Germany. Less attention is paid to the aforementioned initial level, and only partially to the fact that the activity discussed only maintained economic growth, instead of achieving the anticipated enhancement of it. Economic development of Saxony is observable overall, but the rate is not proportional to the investment going in, and above all to the great expectations people had for it.

The number of patents registered in different regions could be recognised as one innovation measure. Changes observed from this point of view are in line with those in GDP (Figure 7). The lands of Bavaria and Baden Wittenberg are maintaining a considerable distance from the remaining regions of Germany. However, after nearly 15 years of transformation, Saxony's situation has improved, to the point where this is not only a leader among the so-called "new lands", but above all a chaser of the leaders in Germany as a whole.

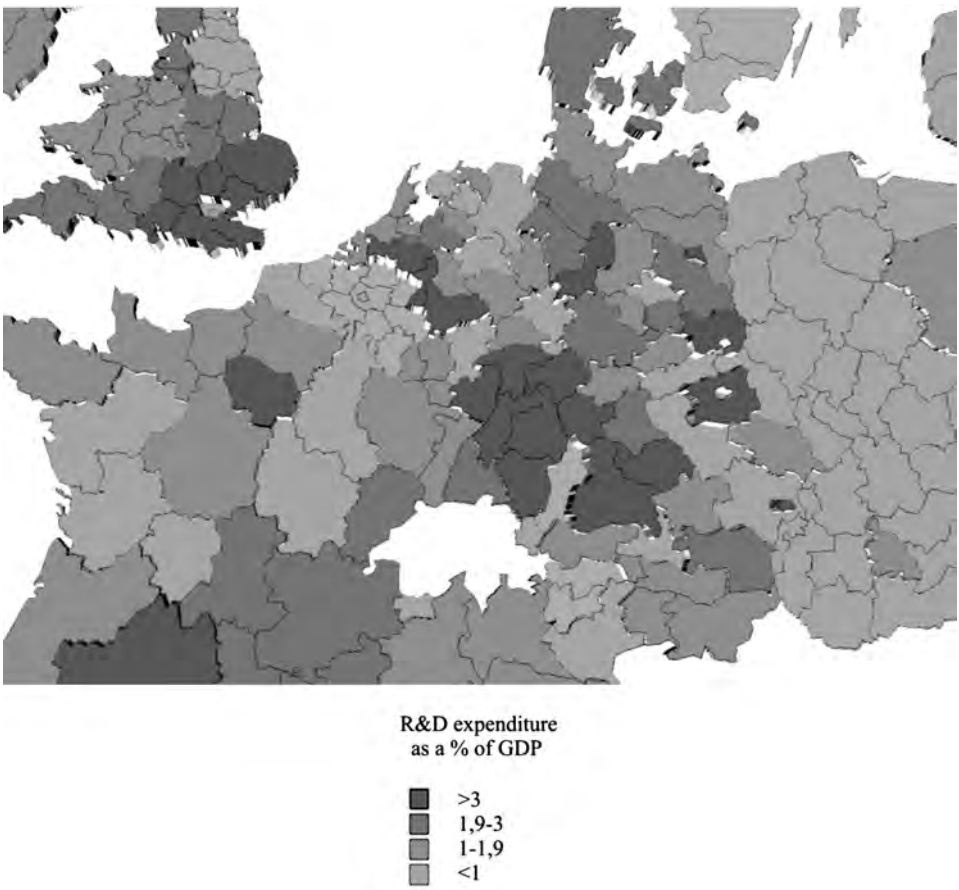


Figure 7. Research and development expenditure (R&D) in Europe in 2004
Source: Eurostat.

The financial means devoted to research and development (R&D) represent a further basic index of the degree to which an economy modernisation is modernising. The share of GDP assigned to this objective differs considerably form region to region in Europe. Nevertheless, the levels of economic development and of expenditure on R&D are not correlated ideally. On the contrary, there are numerous regions of a weak and peripheral nature in which the volumes of the funding in question are rather high structurally. The classic centre-peripheral division is not therefore obvious. Also that of Eastern Germany (so often cited in comparative studies) does not "function" well. For example, the sub-regions (*Regierungsbezirks*) of which Saxony consists (above all those of Dresden and Leipzig) are classified towards the top in the European Union, placing much above many sub-regions in southern and western Germany. The city of Dresden with its hinterland invests a considerable share of its income in R&D. The universities in this city are equal in level

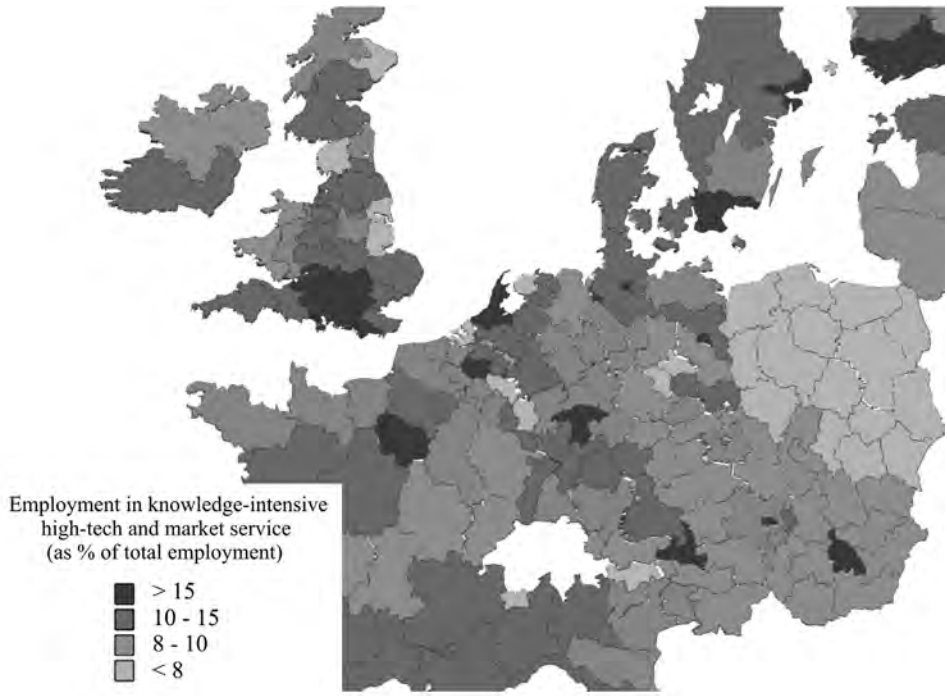


Figure 8. Employment in knowledge-intensive high-tech and market services in Europe (2004)
Source: Eurostat.

to those of Western Germany and take full advantage of their rich traditions. Classifiable alongside them are some of the European regions best developed and transformed thanks to innovation, e.g. many regions in southern and south-western Germany (München, Ulm and Baden-Württemberg) South-East England, Ireland, north-west Italy and the technopoles located in southern France. The level of funding invested in R&D is different in the particular regions because of different past stages of economic development. It is, however, obvious that Saxony's present development is based on scientific progress. It is also to be hoped that there is a chance for the region to pass from the group of peripheral (or even ultra-peripheral) ones. Even the sub-region of the Chemnitz-Zwickau conurbation, with all its structural difficulties, is showing a positive trend for changes. One should also add that Saxony's situation is better than that of Sachsen-Anhalt, for example. That region, bordering on to the well-developed Brunswick (and from which direct pattern diffusion is therefore possible), is nevertheless perceived in a worse light in terms of its being a zone of location for high-technology industries.

Another index demonstrating advancement as a location for new technology concerns employment in the knowledge-intensive sector. In the sub-regions of Dresden and Leipzig, this share amounts to 15% (Figure 8). Only the regions of Southern England (in

part), the Ile-de France, Southern Hessen, Southern Sweden and the cities of Vienna, Hamburg and Berlin are better equipped with this kind of tertiary sector development, so important for the high-technology sector. Their level in Saxony is equal to that in the Benelux countries, the southern parts of Germany and Austria, or northern Italy – all being among the best-developed in Europe – and within Germany the level is much higher than in most of Niedersachsen, northern and central parts of Hessen, or even Bayern.

HIGH TECHNOLOGIES IN SAXONY – LOCATION-SPECIALISATION

As regards high technologies, Saxony is manifesting regional specialisation (Figure 9). Its particular "success area" is ***microelectronics***. Located in this region are the AMD company producing computer processors, as well as plants belonging to famous electronic firms, like Infineon and ZMD. Nearly 200 companies, employing some 20,000 people, represent this branch in Saxony. They produce hardware and software, and the production of semiconductors using local innovations is considerable. Links between science and business are efficient here. Dresden and its hinterland hold the lion's share of software and hardware production, and that of database construction. The second greatest centre, also showing considerable dynamics, is that of Plauen, in southern Saxony.

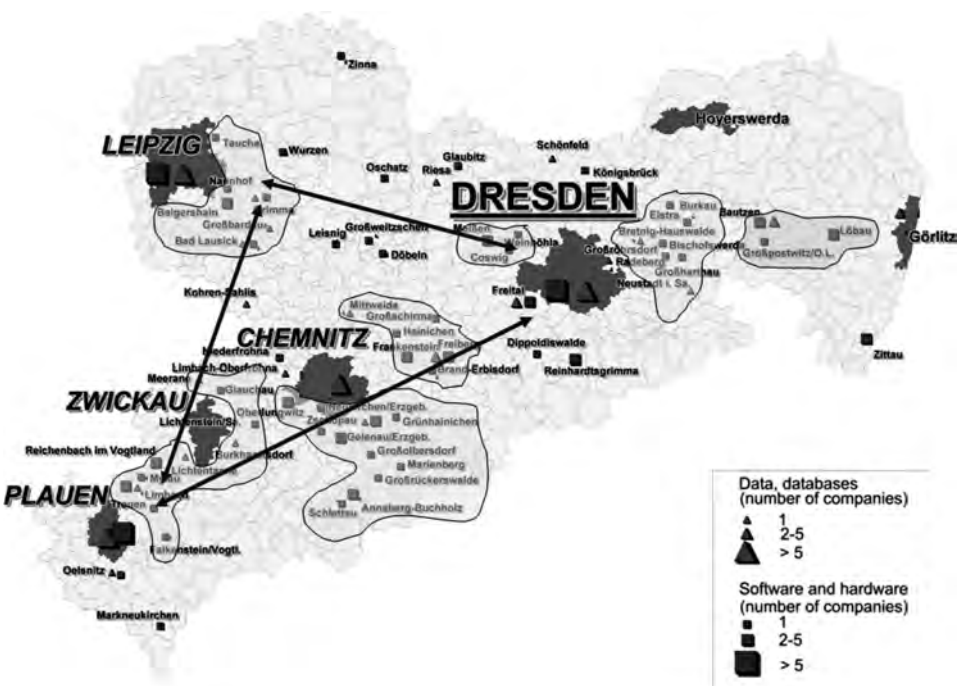


Figure 9. High technologies in Saxony in 2004
Source: Database of companies situated in Saxony: http://kwis.saxony.de/firmen/

A stable element in the promotion of the region is the slogan "***Autoland Saxony***". The car industry is one of the most traditional branches in the region, having its beginnings at the turn of the 19th and 20th centuries. There are currently some 450 companies active in this industry, including such famous ones as Porsche, Volkswagen, BMW and Neoplan. The total employment in the branch is estimated at almost 60,000. Due to the use of high technology, the most luxurious models of cars are produced in Saxonian plants. Most of these are concentrated in the south-west of the region – within the Chemnitz-Zwickau conurbation – in which the above-mentioned tradition is the longest. In the Dresden and Leipzig sub-regions, car factories are not so numerous, though the location of Volkswagen plants in the two cities, together with that of Porsche in Leipzig, means that the industry has been expanding out its traditional zone. The "Glaserne Manufaktur" plant in Dresden, producing the most luxurious Volkswagen model (the Phaeton) is the symbol of modern technology – and a considerable tourist attraction, since the glass in the building allows the whole production cycle to be observed.

Another symptom of the modernisation of Saxony's economic life is the functioning of the "***Life Sciences Industry***". To this group of highly-advanced technological branches belong biotechnology, genetic engineering, medical technology and the pharmaceutical industry. Nearly 150 firms of this type are concentrated mostly in the Dresden sub-region, as well as that of Leipzig. They are seldom found in the conurbation of Chemnitz-Zwickau.

The examples presented above do not exhaust the high-tech branches that are present. In Saxony there are both these, and the classic traditional industries, based on modern technological principles. It is necessary to stress the considerable spatial differentiation of their location. Most are concentrated within the so-called "Saxonian Triangle" – the area defined by axes linking Dresden, Leipzig and the Chemnitz-Zwickau conurbation, though, due to transport infrastructure, the discussed location also applies to adjacent localities. The northern, peripheral sub-regions, especially the area close to the city of Hoyerswerda, show no signification symptoms of innovation, even at local level. A similar situation applies to the area close to the Polish border, though its southern part does boast motor industry plants.

On the basis of above analysis it is possible to define the degree of development and orientations of particular sub-regions where the concentration of high-tech industry is concerned. The city of Dresden with its hinterland (especially the eastern zone) and that of Meissen dominate, these having a prevalence of biotechnology, genetic engineering, and, above all, microelectronics. The processors produced there are exported to nearly all parts of the world. It its worth mentioning that exports to the United States have grown considerably from some 5% on the eve of the 1990s to nearly 20% as of 2002[9].

CONCLUSION

The case of Saxony shows how hard it is to assign such a region to the central or peripheral zones of Europe. The region is characterised by positive economic symptoms, on the one hand, but depopulation on the other. Thus, what are theoretically completely divergent processes are functioning alongside each other in Eastern Europe.

"Silicon Saxony" is not only a slogan made common use of the promotional materials (advertisements) for the region and by the German media. Software, hardware, microelectronics and the so-called "Life Sciences Industry" are all high-technologies that are genuinely widely represented in Saxony. Saxony is thus one of the most "problematic" regions in Germany, but one which has made huge progress during the last few years. The economic changes in Saxony that have been referred to here can be described as a transition from a traditional industrial area into a modern centre of high technology. A problem remains that the greater part of society in the region is not matched to this change, for reasons rooted in the past system, in structural weaknesses (the considerable role of heavy industry) and in disparities between needs and opportunities.

REFERENCES

Benko, G. (1993) *Geografia technopolii*, Wydaw. Naukowe PWN, Warszawa.

Bunnell, T.G. and Coe, N.M. (2001) Spaces and scales of innovation, *Progress in human geography* 25, 4.

Gal, Z. (2002) *Role of the Universities and the Support Organisations in Regional Innovation Networking in the Peripheral Regions*, Centre for Regional Studies of the Hungarian Academy of Sciences, Pécs.

Invest in Saxony 2005, Wirtschaftsförderung Sachsen GmbH, Dresden.

Koschatzky, K. Sternberg, R. (2000) R&D Co-operation in Innovation systems – Some Lessons from the European regional Innovation Survey (ERIS), *European Planning Studies* 8, 4.

Statistisches Bundesamt Deutschland, www.destatis.de

Statistisches Landesamt des Freistaates Sachsen, www.statistik.sachsen.de

http://www.dresden-airport.de

www.sachsen.de

EUROPA XXI
2006, 15: 119–133

PATTERNS AND PROBLEMS OF PERIPHERALITY IN LITHUANIA – BORDERLAND OF THE EU

VIDMANTAS DAUGIRDAS and DONATAS BURNEIKA

Institute of Geology and Geography
Sevcenkos 13, 03223 Vilnius, Lithuania
vidmantas.daugirdas@geo.lt; donatas.burneika@geo.lt

Abstract: This article is devoted to an analysis of the phenomena of peripherisation in Lithuania. The authors discuss meanings of the concept of periphery and peripherality, analysing the processes of peripherisation in Lithuania. Most attention is paid to the phenomena taking place in Eastern Lithuania, part of a depressed area of international rank. The authors also discuss possible trends towards peripherisation that may appear in the area on account of EU accession.

Key words: periphery, peripheral region, problem region

INTRODUCTION

Problems of regional disparities, lagging behind and peripherality are being discussed, not only in geographical literature and in some specific countries. Answers to questions as to how and why the process of peripherisation develops, and whether or not the phenomenon is inevitable are being sought by politicians, spatial planners, economists, culturologists, historians, and – of course – geographers. The concept of the "periphery" is used very often, widely and in many senses. Concrete indicators, which could be used to measure peripherality, are also under investigation.

The main aim of this article is to reveal the phenomena of peripherisation and their causes in Lithuania and to detect possible future trends.

In seeking to achieve this aim, the authors have:

– discussed the definition and meaning of concepts regarding the periphery;
– analysed phenomena relating to peripherisation in Lithuania;

– sought to reveal possible prospects in respect of peripherisation now that the status of border area of the EU has been assumed.

PERIPHERY: THE MEANING OF THE CONCEPT AND INDICATORS THEREOF

The main aim of the research included the establishment of a definition of the term "periphery". This is because, depending on the meaning assigned to the term, the results of research can vary markedly.

The binary core-periphery model of territorial organisation, the theory of politics of regional development (Lee 1997), models regarding the diffusion of innovation, electoral geography and theories on the globalisation of the economy all raise and discuss the issue of peripherality. The commonest and broadest meaning of the term– relates simply to something that is distant from the centre, and hence "edge" territory. It is common for a capital city of a country to denote the centre, while much or all of an area's remaining territory might thus be seen as the periphery. Exceptions apply in countries whose capitals are not the main economic and/or cultural centres – as when Washington D. C. is set against New York. In some cases the concept of the periphery is linked with those of the province and provinciality, the terms "periphery" and "province" in essence being understood synonymously. In truth, however, these words differ considerably in meaning. While aprovince can indeed be understood as a territory distant from a state's centre, the term also denotes economic (and most especially cultural) backwardness. The geographical literature also uses the term "province" to refer to taxonomic territorial units or territorial administrative units. The term "socio-economic province" is not used at all.

The encyclopaedia *Encarta* describes a peripheral region as a territory located outside the boundaries of the economic centre that represents the dominant territory of a given country (Encarta.msn.com). Such a popular definition and understanding is the most widespread.

The concept of the periphery is often linked with dependence on the centre, in that the centre creates and the periphery accepts. The consequences of such relationships – permanent conservativeness, lagging behind, slow development, passiveness, closeness – all in turn identify an unimportant marginal zone of transition – and hence a bad place in which to live and do business. Alternately, a periphery may be romanticized and thus become a cultural category. Features of traditional culture may live on in the peripheral area, even when the while centre has lost them long since.

Far apart the periphery and centre may be, but it is clear that they are in some ways closely connected and interdependent. The more distinctive the centre, the clearer the periphery, though therelationships are asymmetrical. Likewise, fast development of the centre may foster development of the periphery, while a deeply backward periphery may hold back development at the centre. Such a situation promotes the creation of concepts regarding balanced and even development, or else dominating regions are starting to complain that they have to "feed" poorer regions (examples of this are easy to find almost everywhere, not least in Vilnius in Lithuania, Catalonia in Spain, Northern Italy, etc.). On the other hand, regions lagging behind complain that the centre fails to give them enough, or else claim that the centre achieves its very prosperity by taking everything

from the periphery. However, it must be stated that the problem of peripherality is understood faster and better in the centre, and possibilities for solving attendant problems are concentrated in the centre.

Absolute indicators of peripherality are at best not easily found at worse not capable of being found at all, since the phenomenon is a relative one. For this reason, a periphery is usually described, using various indicators of social, economic or cultural development, the effect being to reveal differences effectively, but say little about the precise level of peripherality. Understanding such a situation, the authors will not try to measure the degree of peripherality of various territories in Lithuania, the presented indicators rather being used to exemplify phenomena relating to peripherisation, without units of measurement. As an objective absolute dimension, the periphery cannot be defined defined or measured precisely. However, it is clear that such an expression lives on in the minds and words of people, indicating undoubtedly that meaning is present and that the phenomenon exists, at least subjectively. It is perhaps therefore possible to define the idea by seeking to establish the meaning that exists in people's minds.

We assume it is possible to distinguish a group of different peripheries of different types, not necessarily characterised by the same spatial pattern. It may be possible to speak of the economic periphery, cultural periphery or political periphery.

These phenomena are not necessarily described by a simple gravitational model. Furthermore, different levels of periphery always have to be kept in mind, since there are different levels of core regions.

One of the most essential features of a periphery is its distant location from the centre – one can call this the geometric periphery. However, distance is another indicator of peripherality not to be taken as universal. On the contrary – this indicator is rather complicated. The question "How far from or close to the centre could a periphery possibly be located?" may always be raised. There is an evident possibility that a great distance may stimulate a periphery into becoming a new, self-sufficient centre, because relations with and dependence on the old one are weak.

It is usual for territory lacking any direct physical connection to obtain the status of periphery most easily. It is for this reason that Guyana, the Canary Islands, the Azores and other similar territories are both regarded as and termed peripheral areas of the EU. These territories might even be considered the "ultra–periphery". Another example might be the Kaliningrad area, named a periphery of Russia simply because it is an exclave territory. The problem of peripherisation of this area is being discussed more and more deeply, because it raises some potential dangers for Lithuania and the whole region. The more and more laggardly position of the territory is giving rise to many social and economic problems for neighbouring countries. Located in the middle of Europe, the Kaliningrad area is becoming a deep periphery of both Russia and Europe as a whole. There has thus been wide discussion in Lithuania centering around the idea that growing social and economic prosperity within the EU should be associated with guarantees for Kaliningrad as well. If this does not happen, the double periphery will start to arouse political tensions.

The term peripheral location is one of the popular indicators even at EU level and even in official language. However, in this context it simply relates to territories that are distant. EU regional policy in turn features the well-known term 'Northern periphery',

which is taken to include the northern territories of Finland, Sweden, Scotland, the Faeroe islands and Greenland. Special programmes are created for such territories, which are perceived to lag behind and to be misbalancing the development of the EU as a whole. Of course, problems with the development of this region are related, not only to their distant location, but also to their climate and other physical conditions, and consequently to a low density of population (www.nothernperiphery.net). All these factors disturb transport-related and economic relations and the development of the information society, as well as slowing down the economy, etc. These are reasons for priority objectives of their development to include an expansion of transport systems and sustainable development of the wider economy. On the other hand, a distant geographical location, low density of population, extreme climate, complicated relief and other similar factors can, not only disturb development, but in some cases also become a factor in the development of tourism, organic farming, or other branches of the economy.

In the wake of the enlargement of the EU, we can now start talking about the 'Eastern periphery of the EU', characterised by the same or even bigger problems, with these relating, not only to unfortunate distant locations, but also the 'soviet – socialistic' economic, political and cultural heritage (something that is, in a deeper sense a consequence of the geographical location of the whole area). It is obvious that all the new EU member states from Eastern Europe are not located in the core EU region, and it is not very strange for this area to gain the description of peripheral. Though mainly a cultural and political concept, the social and economic backwardness of these territories is obvious. This lagging behind is in part a consequence of the territory's long presence at the edge zone between Western and later Eastern political systems. On the other hand, the eastern parts of most countries in this zone are less developed than the western ones. A very similar situation can be noted in southern Europe, where southern parts are less developed, and in Northern Europe, where the situation is the same. This is also a consequence of their being at this edge for a long period.

THE PHENOMENA OF PERIPHERISATION IN LITHUANIA

In trying to reduce disparities among regions and promote the development of weakly-developed regions, the Government of Lithuania has sought to establish a set of indicators and criteria allowing problem regions to be identified (*Dėl probleminių…* 2003). These criteria were to serve as a background for the distinguishing of regions lagging behind, and for the drawing up of programmes for their development. The rather simple criteria in question are:

1. sales per person lower than the Lithuanian average;
2. foreign direct and material investments per capita below the Lithuanian average;
3. an unemployment level 25 % higher than the average in Lithuania;
4. an indicator for economic activeness (the proportion of the whole population of working age that is economically active) that is below the Lithuanian average;
5. emigration of population from a problem territory that is higher than the Lithuanian average.

However, a problem encountered with the use of these criteria has been that almost the whole country outside the biggest cities can in these circumstances be termed a problem area or periphery. This is not a strange outcome, bearing in mind the fact that the main rising cores of the Lithuanian economy are concentrated in a very few cities. Finally, only the unemployment rate was taking into account as proposals for support from the EU were evaluated in 2004. Advantages were conferred upon territories in which the level of employment exceeded 75 % of the Lithuanian average. Then there were 14 municipalities called problem ones (*Dėl probleminių...* 2004). Five of these were in the eastern part of the country. The level of unemployment in Lithuania has since dropped markedly, such that, as of 1st November 2005, registered unemployment stood at just 3.9%. However, it is easy to note that municipalities with the highest unemployment are located in the peripheral zones of Lithuania (Figure 1). This may of course be a consequence of their distant location, as well as the impact of the state border.

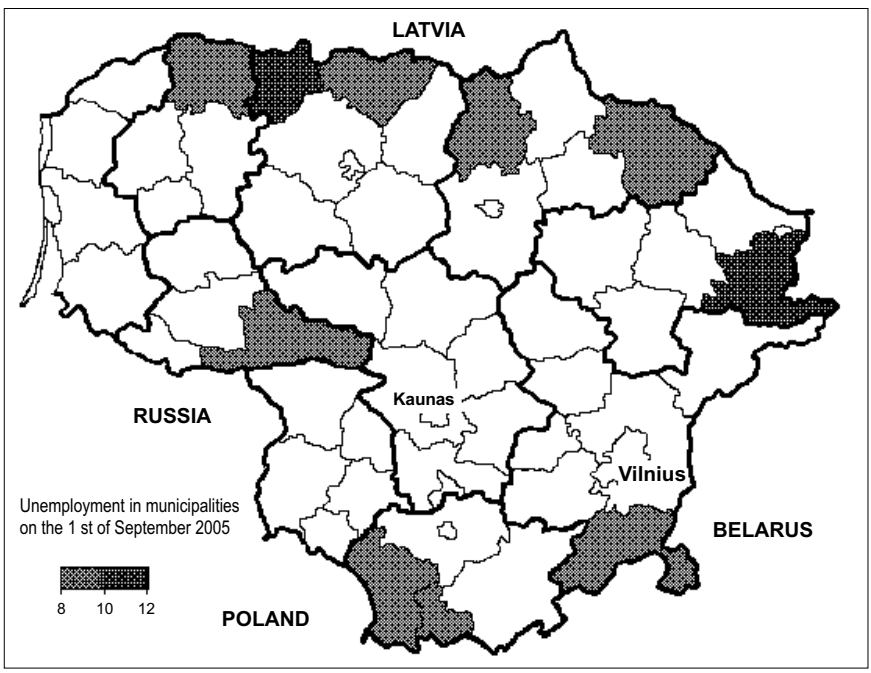


Figure 1. Ten municipalities with the highest unemployment in Lithuania
(according to data from the Lithuanian labour exchange, www.ldb.lt)

The rate of unemployment should not be the only indicator in identifying either problem regions or peripheral regions. The complex of criteria capable of confirming peripheral status can in fact be very wide, and the following list is not exhaustive:

- infrastructural criteria (lowest density of railways, roads and highways; poorest network of telecommunications, etc.);

- social and socio-economic criteria (e.g. the lowest proportion of the population of working age, the largest proportion of pensioners, the largest proportion employed in agriculture, lowest level of urbanisation, lowest income levels, lowest level of education, etc.)
- economic criteria (lowest proportion of industry and service production, lack of innovative industries, lack of business services, lowest GDP per capita and lowest foreign investments, etc.)
- demographic criteria (lowest population density and rate of natural increase, depopulation, highest emigration, etc.)
- cultural and political criteria (different or extreme political voting, lack of sporting or entertainment events of the highest level, etc.)

On the other hand, static indicators cannot be used very effectively. Rather, the main trends for their development should be monitored. Changes taking place over 5, 10 or more years should be traced and analysed. Equally, changes alone cannot illustrate the peripherality of the territories. For example, the fastest-growing areas in Europe are in peripheral zones. The same situation can be found in Lithuania – we can find three core growing regions in Lithuania, but in fact the real situation is often the opposite (Figure 2.) Many of the growing municipalities have, or have had, the lowest values for GDP per capita.

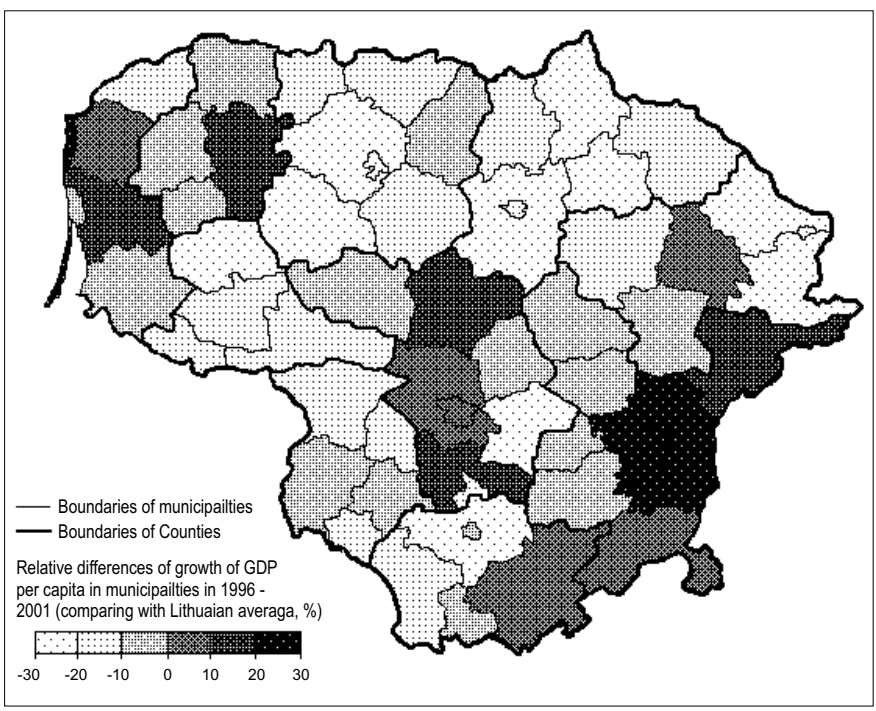


Figure 2. Differences in rates of growth of GDP in municipalities of Lithuania, 1996 – 2001 (as % of Lithuanian average)

The main problem is that, in analysing all the indicators referred to, we will ultimately determine the identities of the least-advanced territories in the country, but this still leaves the questionas to whether this is a periphery or a reflection of presence within a periphery. All the indicators mentioned (and those that are not) represent nothing more than information which may be useful in analysing problem or peripheral regions, but are of much more limited use where efforts to define exactly where a periphery is are concerned. The phenomena in question are common for peripheral regions, but hardly suitable in defining them. On the other hand, the term "periphery" exists in the minds and conversations of researchers and the wider population. Since this is obviously a mental category, it can perhaps be defined through efforts to ascertain the meaning assigned to the word by people. It should be not very hard to find out where – in the view of the population – the peripheral territories are located. Probably, however, the outcome would be rather uncertain, depending on where people lived and their cultural background.

EASTERN LITHUANIA – PART OF A TRANSNATIONAL PERIPHERAL ZONE

As Lithuania is a small country, actual distance from the country's core may not be so very important. However, an important factor may also be the general remoteness from European core regions (cores of few levels make an impact on peripherisation in Lithuania). Especially evident tendencies towards peripherisation can be found in the eastern part of Lithuania, notwithstanding the fact that this is located closest to the country's core region of Vilnius. The paradoxical situation whereby a core region is located in the periphery can be related to causes of peripherisation linked to processes of higher rank than in Lithuania itself. Some general data illustrating the main demographical indicators are given in Table 1.

Table 1. The Eastern Lithuania region (*Counties...* 2004)

Region	Area, km^2	Population	Proportion of whole Lithuania, %	Urban population, %	Density of population, per km^2
Eastern Lithuania	22357	1.214 million	35.2	71.7	48.8
Alytus county	5425	184807	5.4	58.9	34.1
Utena county	7201	181113	5.2	54.4	25.2 (the smallest one)
Vilnius county	9731	848399	24.6	78.2 (without Vilnius – 37.4)	87.2 (without Vilnius – 31.7)

Many social and economic indicators here are the worst in the country, and there are a number of indicators that are simply bad. The problems in analysing the situation appear due to the presence of Vilnius city. The fastest-growing and most-developed centre in the country is in the middle of the identified backward area. This disturbs statistical indica-

tors very much, with Vilnius county being the most advanced in Lithuania. Average GDP in Lithuania in 2003 was of 4.72 Euro per capita, cf. 7.65 in Vilnius. The average GDP in eastern Lithuania minus Vilnius is of approximately 3.04. The share of the country's industrial production in the county, excluding Vilnius city is 9.6%, the area being home to 19.2% of Lithuania's residents. In turn, the county as a whole (capital city included) accounts for 25.5 % of industrial production and is home to 35.2 % of the entire population of Lithuania (*Counties…* 2004). The disproportion in the service sector is even higher, and is especially evident where foreign investments are concerned. The whole of Vilnius County attracts 65% of the country's foreign investment, while without Vilnius the share is just 1.5% (*Counties…* 2004). Table 2 illustrates some general economic indicators relating to eastern Lithuania.

Table 2. Economic indicators for Eastern Lithuania in 2004 (www.std.lt)

County	GDP per capita, % of Lithuanian average	GDP, % of Lithuanian	Foreign direct investment, %
Alytus	77.2	4.2	1.1
Utena	82.4	4.4	1.3
Vilnius	141.3	34.5	61.4 (without Vilnius 1.4)

Another important feature of a periphery is a low level of urbanisation, and a lack of major, important cities. It is widely supposed that, if there is no city with a population exceeding 100,000 in an area, then that area can be termed a periphery. In our case, however, the capital city is in the middle of the region – again confirming the idea that distance from the core is not a suitable indicator, with processes of a more extensive and higher nature causing the peripherisation of eastern Lithuania. It may be assumed that the impact of distance is more important over greater distances, while processes common to a periphery may appear in territories located close to the centre. The second core development area of Lithuania – the Klaipeda region – is located on the opposite side of Lithuania. On the other hand, there is a possibility of peripherisation of surrounding territories being enhanced by the existence of one large city and attendant concentration of population (44% of the region's residents live in Vilnius).

As was mentioned earlier, the social and economic backwardness of eastern Lithuania is determined both historically and geographically. This area is part of a region that stretches far beyond the state border of Lithuania. In fact the peripherisation zone includes eastern parts of Lithuania, Latvia (Latgala), Poland (Podlaskie voivodship) and the western part of Belarus (Figure 3). These territories are very similar in many respects (having a high proportion of forests and lakes, infertile soils, a low population density, a low level of urbanisation, a laggardly economy, etc.). It is very common for social and economic indicators in these areas to be the worst or almost the worst noted in the country.

Figure 3. The peripheral cross-border region on the eastern frontier of the EU

From the point of view of cultural geography, the whole of Lithuania – and its eastern part in particular – represent peripheral, contact zones. A distinctive feature here is ethnical, religious and cultural variety. For almost 1000 years now, Lithuanian territory has been a zone of clash between Western (German, Catholic, Protestant) and eastern (Eastern Slav and Orthodox) cultures. It is for this reason that phenomena common to cultural edge zones and certain features of cultural backwardness exist in Lithuania. There is a premise that a long period with a peripheral geographical location has made an impact on the slower development of the region (Daugirdas). Periphery may thus become a historical dimension as well.

During the Soviet occupation, the eastern parts of Lithuania and other Baltic States were the most sovietised. In many cases the centres of Soviet industry and power generation were built there, with the immigrant population predominantly speaking Russian. So a zone of political, cultural and economic tensions from Estonia through to Lithuania was created. This stretched from Narva and Kohla Jarve in Estonia, via Daugavpils and Rezekne in Latvia, through to the Visaginas and Vilnius districts in Lithuania.

Eastern Lithuania. It is usual for peripheral territories to have a much lower population density than the national average – to the extent that this indicator is very popular in defining peripheral regions (if not, of course, on a global level). Territories with exceptionally low population densities account for one third of Lithuania, and most are indeed located in the eastern part of the country, here taking in entire regions (Figure 4).

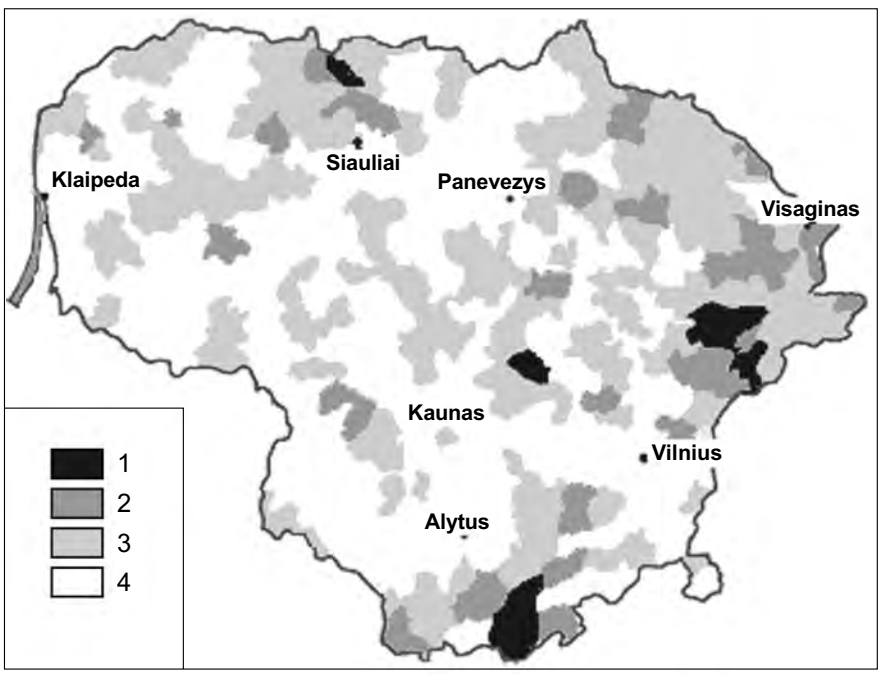


Figure 4. Sparsely-populated rural areas in Lithuania in 2002
(1- population density less than 5 per km^2; 2 – from 5 to 10;
3 – from 10 to 15, 4 – more than 15)

A low population density can be used as a systemic indicator of peripherality, because it can reflect problematical living conditions of a long-term nature. Of course physico–geographical conditions, especially the quality of soil, make a major impact on this indicator, so it cannot very correctly be used as a pure indicator of peripherality. Conditions for economic activity may be greatly affected by negative local factors, and not necessarily by a location distant from the core regions. Such conditions connected so closely with pure physical geography can strengthen the phenomena of peripherisation or lagging behind. Anyway, the sparsely-populated areas in Lithuania have the worst socio–economic conditions, as compared not only with the country as a whole, but also with the surrounding region. The main economic activity in these areas remains traditional agriculture, though poor soil quality, small farm size, extensive land use, an old population structure and other factors all disturb its development. The worst problems in these areas are related

to the development of social services. The population is not sufficient to justify schools, libraries and postal services being maintained. Limited demand results in closures of shops and other retailing services. All this once again disturbs development and expands emigration of younger population. Backwardness and peripherality are thus expected to increase here.

Some demographic indicators illustrating the aforementioned situation are given in Tables 3 and 4. In this case, the presence of Vilnius city again disturbs data for the region as a whole. On the other hand, many demographic indicators for Utena region are the worst in the country, notwithstanding the presence there of Visaginas, the youngest city in Lithuania.

Table 3. Demographic indicators for Eastern Lithuania (‰) (*Counties...* 2004)

Territory	Birth rate	Death rate	Natural increase
Lithuania	8.9	11.9	-3.0
Eastern Lithuania	8.3	12.8	-4.5
Alytus county	8.8	12.5	-3.7
Utena county	7.5	14.7 max	-7.2 min
Vilnius county	8.6 min	112	-2.6

Table 4. Structure of population in Eastern Lithuania, % (*Counties...* 2004)

Territory	Under working age	Working age	Over working age
Lithuania	19.5	60.3	20.2
Eastern Lithuania	18.8	59.8	21.5
Alytus	20.0	58.2	21.8
Utena	18.6	57.9	23.6
Vilnius	17.8	63.2	19.0

While eastern Lithuania is not an absolute exception in the country, being by no means its only peripheral region, the phenomena common for the periphery are nevertheless especially evident here. It is possible to note more-backward, slower-developing, 'old fashioned' areas of smaller scale in the middle of the country, albeit ones that are not so unique, unstable and miscellaneous. These are territories peripheral to our local core regions, while eastern Lithuania is part of a periphery of wider range. The uniqueness of processes with its 'absolute peripherality' on the European scale makes eastern Lithuania a region of exceptional interest. This evidence is especially underlined by the fact that the main developmental core of the country – Vilnius, in which phenomena relating to innovation and development are progressing exceptionally fast – is located in the middle of the region

PROSPECTS FOLLOWING EU ACCESSION

Notwithstanding the many positive impacts of accession to the EU, there is no expectation of all or parts of Lithuania becoming a core region at EU level. Following accession, the eastern part of Lithuania became an edge zone of the Union as a whole, and is likely to remain so for a long time. The state border with Belarus became a barrier, and this fact may strengthen phenomena of peripherisation, especially in a psychological sense. with all the relevant practical consequences (for example high emigration rates, a lack of innovation in the economy, infrastructure etc.). A question as to whether the threat of increasing peripherisation is real cannot be answered easily. Lithuania has been in the zone of clash between eastern and western civilisations for more than 1000 years now, and phenomena relating to cultural backwardness are a characteristic feature of ours. The experience of Lithuania of being in the edge zone of great cultural, political and economic zones increases peripherisation. *de facto* Lithuania has been and remains on the historical periphery. At present Lithuania and the other Baltic States are often identified as long-term peripheral or problem regions of the EU as a whole. It thus seems that the region is in danger of becoming a political Euro-periphery. Figure 5 confirms that the eastern part of Lithuania may already be regarded as such a political periphery of the EU. The proportion of the population voting "no" to EU accession was much higher here than in the rest of the country.

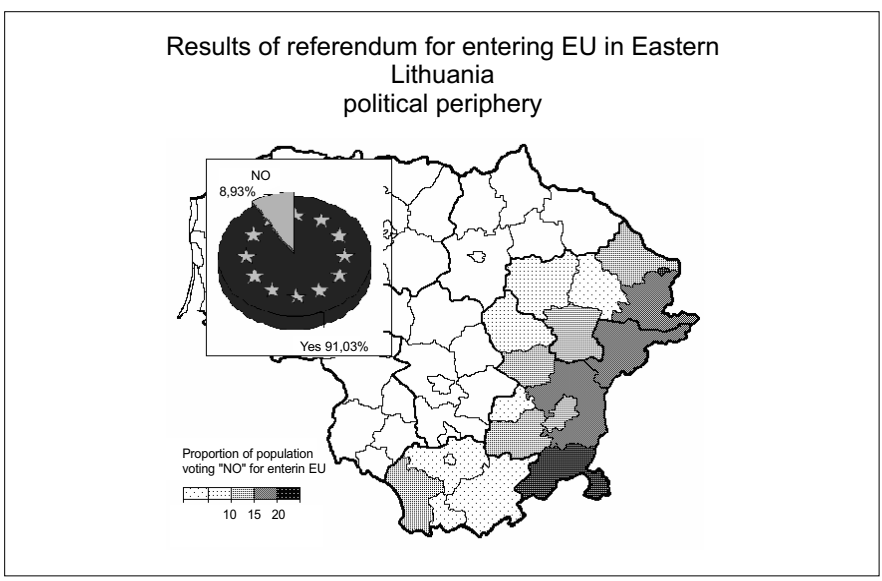


Figure 5. Proportion of Eastern Lithuania's population voting "no" to EU accession during the Referendum of 2002

Though the core of the EU may shift eastwards, due to enlargement and the fast development of new countries, there is no chance of the Baltic countries losing their peripheral status at EU level. This is true, notwithstanding possible fast economic development or achievement of the status of core development area in Europe. This is especially true of eastern Lithuania and the wider trans-national peripheral zone mentioned above. This is of course an international problem, which requires solutions at international level. The favourable factor here is EU regional policy, which is directed to less-advanced regions that are lagging behind. International collaboration is also one of the priorities of this policy, which can be used to strengthen the endogenous potential of the whole zone. On the other hand, it may help to reduce disparities in levels of development, even though the peripheral location will itself remain.

Lithuania by itself has no chance of transforming this extensive peripheral zone into a development core. Indeed, at first sight, the statistics offer almost no premises for expecting a visible improvement any time soon. However, the contact location of the region may strengthen the development of trading relations. The development of international relations and international communications networks is often seen as a way of solving such problems. It is possible to put other advantages of the region – its natural resources – to use. Clean nature, a picturesque landscape, and large and numerous protected areas all speak for the possibility of tourism being developed in this zone, this being a more and more serious and profitable business. Such changes might solve the problems of the region. On the other hand, one such problemis location within an edge zone in which the barrier effect is often visible. Were the area in question to become a transitional zone, it would develop even faster than other regions. In this situation the presence of the large and growing city of Vilnius would become a favourable factor. However, fast development would at present seem more likely for the centre, while other territories will remain a less-developed periphery in both European and local terms. The development of Vilnius may also be disturbed by the new economic barrier formed by the state border with Belarus, which cuts off a portion of Vilnius's hinterland. It is hard to say if this will happen, though so far present the unfavourable location has had no noticeable negative impact on city development. This may in turn mean that local or site factors are at present much more important than locational ones.

It would also seem that highways at present serve as tunnels through the territory, making a small positive impact on the development of surrounding territories and serving the needs of growing centres. A developing of communications around Vilnius may also make little positive impact on the wider region, which may remain a deep periphery with all the attendant negative phenomena. The tensions between centre and periphery will increase even more in these circumstances.

In bringing the article to a close, the authors would like to pose certain questions to be answered in the near future. It may be that presence in a periphery is not as bad nowadays as it once was, with communications developing so fast, the world becoming smaller and the idea of 'sticking' to a place of residence becoming less strict and permanent. The periphery of today has no chance of being as deep as previously, perhaps even to the extent that the predetermined negative meaning may not be correct any more. Perhaps some at least will come to regard the term PERIPHERY as nothing more or less than a 'calm and cosy place to live and work?

CONCLUSIONS

1. The variety of meanings assigned to the concepts of periphery and peripherality remain very wide. Notwithstanding the concrete meaning, processes of peripherisation in Lithuania remain very clear. The eastern part of the country is located on the edge of EU, and is thus on the geometric euro-periphery. Conservativeness, passiveness, closeness and slow development are common features of this marginal region. This is a historical, economic and cultural, but also a psychological and political periphery. The lagging-behind of the new edge territories of the EU is a serious problem, which is dangerous for the integrity of the EU and exerts a negative impact on relations with neighbouring countries. It is for this reason that, not only the southern and northern, but also the eastern, periphery should be seen as priority areas for EU regional policy. This is an international problem and its solution should be internationalised.

2. Especially clear trends towards peripherisation can be found in eastern Lithuania (the counties of Alytus, Vilnius and Utena). On the other hand, the uniqueness and specific nature of this area are strengthened by the fact that the development core of Lithuania – its capital city Vilnius – is located in the middle of the region in question. However, the scope of the positive impact exerted by the development of Vilnius on surrounding areas is a very small one. Differences in various indicators for economic and social development between Vilnius and remaining areas are very distinct ones.

3. The socio–economic backwardness of eastern Lithuania is determined geographically and historically. This is part of a zone of peripherisation of much wider international rank, and including also the eastern parts of Latvia and Poland and the western part of Belarus. The eastern parts of the Baltic States were the most sovietized, new industrial centres with a Russian-speaking population being developed in them. A transitional zone of cultural, economic and politic tensions was created in this way, this stretching from Narva in Estonia through to Vilnius in Lithuania.

4. Peripherality is a relative category, hence its usual description by reference to comparative social, economic, cultural and other indicators. However, these indicators can be used in the characterisation of peripheral regions, but are not very suitable in defining where a periphery is. Periphery is first and foremost a mental category, and is this one potentially definable through an analysis of the meaning people ascribe to it. Otherwise, a periphery is basically everything that is not the centre, bearing in mind that even the centre can also be peripheral to a centre of higher rank.

5. There is no clear answer to the question whether, in the wake of its accession to the UE, Lithuania will experience yet-further peripherisation on account of its edge location. Though the core of the EU may shift eastwards with enlargement and the fast development of new countries, there are no chances of the Baltic countries avoiding peripherisation at EU level. This would remain true even were fast economic development to take place, or Lithuania to assume the status of development area in Europe as a whole.

6. The peripherisation of eastern Lithuania will not cease. Indeed, differences between Vilnius and surrounding territories will most likely remain or increase. The concentration of development in the centre on one side will combine withongoing peripherisation on the other, to raise still greater tensions between the city and the remaining region.

REFERENCES

Counties of Lithuania: Economic and social development 2003 (2004), Vilnius.

Daugirdas, V. (2004). Lithuania as a space of interaction of cultures, *Geopolitical studies* 12, 177–190.

Daugirdas, V. (2002). *Demographic trends in sparsely populated Lithuanian territories in EU priorities context. New arrangements of socio-economic links in Central and Eastern Europe,* Rzeszów, 205–214.

Dėl probleminių teritorijų (2004), LR ūkio ministro 2004-09-22 įsakymas Nr. 4-346, www3.lrs.lt.

Dėl probleminių teritorijų išskyrimo kriterijų (2003) LR Vyriausybės 2003-04-08 nutarimas Nr. 428, www3.lrs.lt.

Janušauskas, R., Janušauskienė, D. (2002) *Demografinis iššūkis ir politinė, socialinė bei ekonominė Lietuvos raida.* http://www.politika.osf.lt.

Lee, R. (1997). *Core-periphery model. The dictionary of human geography* Johnston R. J. Gregory D. Smith, D.M. (eds.) Blackwell, Oxford, 95–96.

Nilsson, D. (2000) *Yet Another Europe? Central Europe: Core or Periphery?* Copenhagen.

Lopata, R. (2002) Naujosios kaliningradistikos apžvalga, *Politologija*: 1 (25). www.leidykla.vu.lt/inetleid/politol/25/tomas25.html. Vilnius

www.encarta.msn.com.

www.northernperiphery.net.

www.ldb.lt

www.std.lt

EUROPA XXI
2006, 15: 135–144

SURVIVING IN A PERIPHERAL PERIPHERY
CASE STUDIES FROM EASTERN POLAND

ROMAN SZUL

Centre for European Regional and Local Studies, University of Warsaw
Krakowskie Przedmieście 30, 00-927 Warszawa, Poland
r.szul@chello.pl

Abstract: Poland being a EU's periphery has its own peripheries. These are Eastern regions which, in turn, also have their centres and peripheries. The latter – rural areas far from urban centres, can be called "peripheral peripheries". Living ways and conditions of their inhabitants were particularly affected by the transformation after 1989. The common characteristics of the new situation are unemployment, growing dependence on irregular incomes, economic and social instability and insecurity, growing socio-economic differentiation implying impoverishment of a considerable part of the local population. Reactions of inhabitants to this situation is a mixture of passive adaptation to the declining living standards and incomes as well as some active strategies, the most often being education and irregular job migration.

Key words: Poland, periphery, transformation, rural areas, incomes, unemployment, job migration

LEVELS OF PERIPHERALITY OR "PERIPHERAL PERIPHERIES" IN POLAND

Notions of "centre" and "periphery" are relative and "multilevel" ones. It means that what is centre or periphery at one, higher, level includes centres and peripheries at a lower level. This lower level, in turn, includes its own centres and peripheries. Therefore one may distinguish several levels of "centres" and "peripheries".

For instance, Poland in many respects is a EU's periphery. It is enough to take into account such a measure of "centrality" or "peripherality" as GDP per capita. Poland with

its average GDP per capita well below the 50% of the EU average, is one of the poorest Member State of the EU25, and together with other new EU Member States form the EU eastern periphery[1]. At the same time Poland is internally differentiated: it has its centres and peripheries. Its centres are obviously its capital city Warsaw with its surrounding and some other big urban centres like Krakow, Poznań, Wrocław, etc. At regional (or *voivodship*, or NUTS-2, according to EU statistics) level, there are richer and poorer regions (*voivodships*). The poorest are Poland's eastern voivodships with GDP per capita below 80% of Poland's average GDP per capita[2]. These voivodships are: Podkarpackie, Lubelskie, Podlaskie, Świętokrzyskie and Warmińsko-Mazurskie. They are EU's „peripheral peripheries".

These five voivodships aren't, however, the "bottom of periphery". In each or them there are their centres (being their capital cities) and better developed areas, and their peripheries – poorer and less prosperous areas. For instance, in the Podkarpackie voivodship (which is located in the south-eastern corner of Poland, bordering with Slovakia and Ukraine), there are significant differences as regards GDP per capita, level of wages or salaries, disposable income, etc. between its two NUTS-3 subregions, namely between the poorer Krosno-Przemyśl "outer" subregion (located along the state borders)[3] and the richer Rzeszów-Tarnobrzeg "inner" subregion (encompassing, among others,. the regional capital city Rzeszów)[4].

Even in the poor Krosno-Przemyśl subregion there are better and worse prosperous areas. The former being urban centres, like Krosno, Przemyśl, Jarosław, Sanok and Jasło the latter beings mountain areas of Carpathians just along the national border as well as rural areas around those urban centres.

So, rural areas around Krosno, Sanok, etc. are (territorial as well as economic) peripheries of the EU, of Poland, of the Podkarpackie voivodship and of the Krosno-Przemyśl subregion. Therefore, they can be called "quadruple periphery".

Among the many questions that can be raised related to such a periphery are those concerning the way of life, the way of coping with daily problems of getting income, personal strategies of adapting/fighting the situation of peripherality. The present paper tries to give some answers to these questions. The paper is based on author's own first hand observation carried out for several decades as well as on a regular sociological investigation carried out in 2002. Although some years have passed since the time of the investigation, the first hand observation confirms validity of result of this investigation.

The survey was conducted in 2002 in a village (Turze Pole) in Brzozów district – some 25 km east of Krosno, 25 km north-west of Sanok, 60 km south of Rzeszów and 6 km south-west of Brzozów[5]. The aim of the survey was to reveal behaviours and opinions of

[1] For exact numbers and more information concerning the position of Poland in the European Union see e.g.: *A new partnership for cohesion. Convergence, competitiveness, cooperation,* Third report on economic and social cohesion, European Commission, February 2004 (especially table 1.1., p. 5).

[2] Cf. *Raport o polityce regionalnej*, Ministerstwo Gospodarki i Pracy, Warszawa 2004 (especially maps 4, 5 and 12 on pages 34, 35 and 47).

[3] Its GDP per capita in 2001 was below 70% of the national level. See: *Raport.*. (map 5, p. 35).

[4] Its GDP per capita is located between 70 and 85% of the national average. Op. cit. (map 5 p. 35).

[5] A more detailed presentation of this village, including its history, is in my article: Szul R. (2004) *Studium przypadku – wieś Turze Pole*, in Szul R. and Tucholska A. (eds.) *Rynek pracy w skali lokalnej.* Uniwersytet Warszawski, Euroreg, 195–209.

its household vis-à-vis the present socio-economic situation in which they live. Questionnaires were distributed among households via the local school (exactly – via schoolchildren). Although the number of questionnaires was not very high (33 or about 1/6 of the total number), results of the investigation confirm the first-hand knowledge of the author (gathered via informal conversations and observations).

A CASE STUDY: RURAL AREAS IN THE BRZOZÓW POWIAT (DISTRICT) IN SOUTHERN PODKARPACKIE VOIVODSHIP

In order to understand the present socio-economic situation of the given area it is necessary to describe the evolution of the situation in this area before the transformation (transition) started in 1989.

THE AREA BEFORE THE TRANSFORMATION

The main characteristics of the analysed area before the changes started in 1989 were the following[6]:

- High share of bi-professionals and commuters (working in regional industrial centres, like Rzeszów, Krosno, Sanok, etc.).

In some villages this phenomenon started already at the end of the 19th century but developed quite rapidly after the WW2 as a result of the then industrialization. In the 1970s and 1980s the main source of income of most households in practically all villages of the area was working of one or more family members in a town (usually as blue collar but quite often as white collar workers). This was due to both high demand for labour force and to relatively good access to the towns by well developed public and company transportation system. The distance from home to the working place usually didn't exceed 25- 30 km. Relatively few people decided to move to towns in the region or to migrate outside of it. Living in the countryside in one's own house and working in towns became a well established living style.

- Small farms (mostly up to 2 ha)

Small size of farms has been an important characteristic of this area for several centuries being cause and result of agrarian overpopulation and "hunger for land" until the post-WW2 industrialization. Cultivating small farms was possible, among other things, due to neighbours' mutual help and to a network of institutions servicing small farms (e.g. centres of common-use farming machines in almost all villages). The bulk of the agricultural production was consumed by farm owners.

- Continuing desagrarization and urbanization

As a result of the growing importance of non-agricultural sources of income as well as of changes in living styles and mentality ("emotional and mental desagrarization" of the younger generation) of the population, agriculture was losing its role as source of income and as destination of working time and investment money. Farms were gradually becoming so called "residential farms", were only a part of land was cultivated. The process of

[6] for a more detailed description of the area, including a number of statistical data, see: Tucholska A. (2004) *Studium przypadku – Brzozów*, in Szul R. and Tucholska A. (eds.) *Rynek pracy w skali lokalnej.* Uniwersytet Warszawski, Euroreg, 153–195.

desagrarization was followed by urbanization and modernization of housing. In the 1970s and 1980s the main incentive to cultivate farms, apart from "mental inertia" of the older generation were market shortages in food supply in the local market.

- Full employment

Apart from the first 1-2 post-war decades when there was a shortage of jobs in the near area and some people had to migrate to other parts of Poland for search of job and improvement of living conditions, later on the economic situation in the area, as well as in the whole country, was characterized by a shortage of working force. For the inhabitants of the area it meant full employment, absence of troubles with finding or changing job, socio-economic stability and security. Given the relatively small territorial differences in wages (salaries) there were no strong incentives to migrate. The emigration from the area was almost exclusively motivated by personal ambitions to obtain university education or to fulfil other personal ambitions, not by a desire to find a job as such. Inhabitants of the area, as others in Poland in that time, were affected by hardships characteristic for the socialist shortage economy of that time.

- Good and improving housing conditions

The whole post-war period (until the transformation) was characterized by a constant and quite fast improvement of housing conditions: building of new houses (usually on one's own piece of land) and related infrastructure (including natural gas distributing network, which differs this area from the rest of Poland). By the way, intense house building activity was a considerable source of, usually unregistered, income. The high density of population (otherwise the cause of the agricultural overpopulation) meant a dense road and transport network and a dense network of social infrastructure (schools, health centres, etc). It can be said that from the point of view of quantity and quality of housing stock and conditions, the area in the 1970s and 1980s belonged to the best in Poland, especially if one takes into consideration the natural environment and landscape there. These good housing conditions, as it will be stressed later on, during the transformation became a "trap" as they deterred inhabitants from migrating.

- Moderate emigration to regional and national urban centres

As mentioned earlier, the emigration, especially since the 1960s, was quite modest – it was smaller than the natural increase of the population. So the area, unlike most of rural areas in Poland, was characterized by an increase in the number of population, and, also unlike most of the rural areas in Poland, by a high natural increase of the population.

Summing up, it can be stated that before the transformation, despite the location on the margin of the national territory and outside urban centres, there were little signs of peripherality as regards living conditions, perspectives of professional and economic advancement etc.

THE AREA UNDER THE TRANSFORMATION

As generally known, the transformation (also called *transition*) brought about significant changes in the socio-economic situation of Poland, its individual regions, its socio-professional groups as well as in lives of individual persons. The aims of this paper, is not to present a balance of the transformation, or to say whether the overall balance is positive

or negative. The aim is to indicate the fate of one specific area which under the new circumstances became a periphery.

The main factor affecting overall economic situation in Poland during the transformation was the decline in employment caused by a decrease in industrial output at the beginning of the 1990s and by the rationalization of the employment (increased labour productivity), combined with an increase of labour force supply caused by demographic trends. As a result, unemployment emerged and grew. At the same time, macroeconomic conditions for agriculture also deteriorated. The impact of the transformation (both of positive and negative effects) was territorially differentiated: generally, big urban centres and western regions of Poland were in a better position than the eastern regions and rural areas. It seems that the area under investigation was a place where many negative tendencies met. From the point of view of the impact of the transformation on living situation and "surviving strategies" of the population the following tendencies are of particular importance[7]:

- Drop in employment (commuters and bi-professionals were first to be dismissed)

Industry of the Podkarpackie voivodship was severely hit by employment reductions, and the area discussed was hit particularly as it was deliberately discriminated against when factories were reducing their employment. The Commuters bi-professionals were the first to be dismissed in order to spare working places to town dwellers. It was considered that commuters possessing farms would do better off without a job than town inhabitants deprived of any additional source of income. Besides, it was argued that commuters were more expensive for companies operating their own transportation that eventually was to be reduced or eliminated.

- Emergence and increase in unemployment; high and long-lasting unemployment

As a result of the employment reduction and contemporary demographic trends the unemployment (both registered and unregistered) emerged and grew. Some persons, although without a job, were not eligible for being registered as unemployed for possessing a plot of land (although not big enough to give a necessary income to survive). The situation was aggravated by the decline in the unregistered activities, earlier related mostly to house building. The unemployment and the housing problem in urban centres discouraged many unemployed from migrating. As a result, the unemployment became very high (in the Brzozów district it is one of the highest in Poland), and what is especially adverse, probability of getting a job is very low and the share of those who are affected by long-lasting unemployment is high and growing.

- Increase in the number and share of pension-earners

Another phenomenon produced by the employment reduction (or by the threat of it) is a significant increase in the number and share of pension-earners. Many people tried to escape from unemployment by making use of the opportunities opened by (quite liberal at the beginning of the transformation) various early retirement schemes, disability pensions, pensions for farmers, let alone regular pensions. Although pensions yield rather a modest income, this income is sure and regular. For about 1/3 of inhabitants of the Brzozów district pensions, together with unemployment benefits, is the main source of

[7] Because the aim of this paper is the description of behaviour of the population and not the exact analysis of the socio-economic situation of the area, the following presentation of the socio-economic situation has only a qualitative character.

income. Quite often parents' and grandparents' pension is the main or only income for the whole family (including pensioner's adult children or grandchildren). It should be underlined that this source of income, sooner or later, will end.

- Instability of employment and income sources

Instability and uncertainty of employment and income has become one of the major characteristics of the socio-economic situation of many inhabitants, and even a factor influencing "collective psychology" and inter-personal relations

- Impoverishment and income diversification

For a considerable part of inhabitants of the area the transformation brought about a deterioration of living standard. However, some people have managed to take advantage of the new situation to improve their incomes and wealth. In most (if not all) cases, sources of success (and income) are outside the area or even outside Poland, where some permanent resident of the area work or run businesses while their families and houses (sometimes resembling palaces) remain in the area.

In survey research the most frequent answers to questions concerning living conditions and social security are "bad". However one of five households states that its situation and security is good. Vast majority declares that their material situation has deteriorated during the transformation, while some households feels that now their situation is better than in 1989. As regard sources of income, for slightly more than one half of households it is regular employment. For only 1 out of 32 household the main source of income was farming, which confirms the advanced process of desagrarization. There is also visible the lack of interest in farming.

SURVIVING STRATEGIES – A GENERAL PICTURE

Observation of the everyday life of inhabitants of the analyzed area leads to the following general (qualitative) conclusions as regards inhabitants' behaviour during the transformation:

- escape from unemployment to pension

To get the right to pension (regular, early, farmers', disability pension) at the beginning of the transformation when unemployment loomed large was the first and only reaction of a great number of inhabitants of the area. Many people managed to receive pension, especially early or disability pension. The right to the latter one had to be confirmed every year which became another cause of stress and the feeling of insecurity. (A possible refusal, which sometimes happened, of the right to the pension deprived the person concerned – usually being in his/her fifties – of any income as they had practically no chance to get any job). Frequent changes in regulations and practices concerning early retirement schemes and disability pensions added to the feeling of instability and insecurity.

- reduction of expenses, consumption and ambitions (no savings, no investments)

The adaptation to the situation of decreased incomes by minimization of expenses and ambitions is a quite frequent strategy, especially among medium-aged and older population

- increased popularity of higher and university level education (especially correspondence courses)

Many (probably majority, especially young women) young persons try to receive a higher (university) education for two reasons: psychological (to strive to any aim, to do

anything not to stay at home), and pragmatic one (to enhance one's chances in the labour marker). For many students it means studying. A great share of them are students of correspondence courses which are payable. It means that they and their parents have to pay for the higher education from their, quite often modest, incomes. Unfortunately, after graduating they usually remain jobless or, at best, take a job which doesn't requires a higher education.

- accepting any job, any working conditions (including permanent violation of employees' rights) and any wage (staying home is better than emigration)

Assuming that any job is better than joblessness (especially if the job gives the right for unemployment benefits after losing the job) and that staying at home is better than migrating, many persons accept any offer. In practice it means accepting an official minimum wage (salary), working in extra hours (or on "free" Saturdays) without extra payment, bearing additional costs required by the employer (e.g. insurances that according to the law should be paid by the employer, buying of commodities in employer's shop), hard working conditions (e.g. working in cold rooms in winters because the heating is turned off to reduce costs), etc. Given that such jobs are usually in towns far from home village, the workers have to bear substantial transport costs. So, after paying obligatory (taxes, insurances) and imposed costs related to the job what remains is one half of the official minimum wage, or little more than 300 PLN (or about 100 euro) per month.

- depending on parents' and grandparents' help (salaries, pensions, living with parents)

For a person earning 300 PLN per month, and even so for those who are deprived of any income, it would be impossible to survive without direct or indirect help from their parents or grandparents, including living with them in common household and thus not bearing housing costs and reducing other costs. It should be underlined that this help is only temporary – after the death of the parents such persons are exposed to sheer poverty. The death of pension earners will also impact the local economy as pensions represent a considerable part of the local demand, so their decrease will further undermine local businesses and jobs.

- working in a distant urban centre by a family member and short-term labour emigration, mostly irregular work abroad (Italy) (with varied success), using of family and personal contacts, learning foreign languages

Despite all hardships some persons decide to go to work in a distant urban centre (most often in Warsaw) or abroad (mostly in Italy), where they usually undertake low-paid, often unregistered, short term jobs. In the case of working abroad, the temporary migrants use personal contacts with those who had already worked or are working their. To increase their chances on foreign labour markets some would-be migrants learn foreign languages. Among the "short term" migrants in Italy are those who have stayed there for many years having reached considerable "successes" (legal job and stay, renting a decent flat, wage above the lowest one which permits making savings). They are often "hung" between Poland and Italy – working and spending more time in Italy and spending their income in Poland (e.g. building or keeping their houses in home villages in a hope that one time they will return for good).

- small business (the most frequent being running small shops)

Some persons venture running businesses. Mostly theses businesses are small shops in owners' houses (which is possible due, among other things, to aforementioned good, big houses). As a result, the number of shops in villages has grown significantly, and the average number of customers proportionally declined, which considerably reduces profits, sometimes to null. However, some entrepreneurs – usually those who act in distant urban centres (most often in construction or transportation services) have managed to gain real success. The proof of their success, are their palace-like villas, where usually entrepreneurs' wives and children live. To this category one has to add high quality specialists and managers who work in Warsaw (or other big cities) and keep their homes and families in the analyzed area. Persons of professional and financial success are, however, in minority.

- after Poland's EU accession: getting EU CAP direct payments and opening of labour markets

Access of Poland to the EU generated some hopes related to getting of CAP payment and improving of the situation of workers working abroad. However, given the small sizes of farms (many too small to be eligible for payments) one can hardly expect a detectable improvement of the situation.

Results of the investigation reveal a rather modest impact of working abroad: it was the main source of income for one household and an additional source of income for 3 more households. It means that for more than 10% of households working abroad was the main of additional source of income, but this income was not very high, because for only one of 32 households it was the main source of income. According to this author's first hand knowledge, the number of households whose members have ever been abroad to work is probably higher than four of 32, but it seems that for most of those household working abroad was rather incidental with no impact on their economic situation. As much as 30% declared pensions and unemployment benefits as their main income. Given the modest amount of pensions and unemployment benefits, and the short-term of receiving the latter, this result, indicate the really hard situation of these households. (It should be noted that, given the way questionnaires were distributed, these were households with at least two generations: children and parents). The above statement is confirmed by the data on the shortage of money for current expenditures: vast majority declares having all the time, very often or often problems with money for current expenditures, while a minority, as in other cases, never has such a problem. Similarly, in vast majority of households somebody (in more than ½ of them) or all adult persons (in about 1/3 of households) were unemployed in the moment of investigation, while, still, there is lucky minority of households where nobody is unemployed (13%) and even a minority of households where nobody had been unemployed during the recent 5 years.

As regards active strategies, the most frequent were attempts to find or change regular job in the vicinity (more than ½ of households). Almost as frequent was searching for an irregular employment, also in the vicinity. (The former doesn't exclude the latter). Only 6% of households declared having tried to migrate to another part of Poland. It confirms the aforementioned unwillingness of the local population to migrate. One of five households had tried to migrate abroad for search of job (which should be interpreted as searching for an irregular short-term employment rather than a permanent migration).

Considering the difference between the number of those who had tried to go abroad for work and those who had benefited from working abroad, it seems that for many people working abroad was only a dream.

The attempt to investigate passive strategies (economizing of current spending and of investment) and to answer the question of the relative role of active and passive strategies failed as the vast majority of households declared to have economized almost all kinds of spending. Given the traditional attitude of the local population (of hard work and thrift) it is not clear whether economizing of spending is now more or less pronounced than earlier. Only the first hand observation of this author suggest that there is a considerable decrease in spending on new house building (it is difficult to say anything certain about other kinds of spending). It seems that the every day strategy of e the vast majority was to economize and to reduce unnecessary spending and, from time to time to undertake some active forms of coping with the situation.

CONCLUSIONS

The area under investigation, located at the very margin of the territory of Poland (and the present EU), during the transformation has become a true "quadruple economic periphery" (of the EU, of Poland, of the Podkarpackie voivodship, and of the Krosno-Sanok subregion). The main characteristics of the present situation, is the decline in living standards and deterioration in socio-economic stability and security of the inhabitants of the area, the major cause of these problems being high and long-lasting unemployment. However, even in this situation some inhabitants managed to improve their situation. As regards territorial mobility (and territorial scope of daily activity) of the population, there happened a significant differentiation: while for the majority (those who have retired or lost jobs in the nearby towns) the daily mobility and scope of activity has been reduced to the home village, a minority of the population has extended its mobility and scope of activity to distant places in Poland and abroad (mainly to irregular work in Italy).

The area is facing "after-shocks" of the transformation. These are the end (in the foreseeable future) of exhaustible sources of income (pensions) of a significant part of the population, being also a considerable element of the local demand nurturing the fragile local entrepreneurship. Another possible "after-shock" is the loss of skills by the young people affected by the long-lasting unemployment or by employment requiring qualifications much lower than achieved. Given this situation, the area needs support from national and EU regional policy. However, problems of such areas are usually overlooked or ignored by policy-makers. Among reasons of such an attitude of policy-makers is the "invisibility" of the problems of the area: there are no (or are only a few) physical signs of socio-economic decline (houses and their surroundings are usually well-kept) and the local population doesn't organize protests (such as strikes, blockages of roads, street demonstrations, let alone attacks on governmental buildings in Warsaw).

REFERENCES

A new partnership for cohesion. Convergence, competitiveness, cooperation. Third report on economic and social cohesion, 2004, European Commission, February.

Raport o polityce regionalnej, 2004*,* Ministerstwo Gospodarki i Pracy, Warszawa.

Szul R. (2004) *Studium przypadku – wieś Turze Pole*, in Szul R. and Tucholska A. (eds.) *Rynek pracy w skali lokalnej,* Euroreg, Uniwersytet Warszawski, 195–209.

Tucholska A. (2004), *Studium przypadku – Brzozów*, in Szul R. and Tucholska A. (eds.) *Rynek pracy w skali lokalnej,* Euroreg, Uniwersytet Warszawski, 153–195.

EUROPA XXI
2006, 15: 145–150

CZECH SILESIA: A PERIPHERY OF THE CZECH STATE

TADEUSZ SIWEK

Faculty of Science, University of Ostrava
Chittussiho 10, 10 00 OSTRAVA – Slezská Ostrava Czech Republic
e-mail: tadeusz.siwek@osu.cz

Abstract: The Czech Republic consists of three historical provinces: Bohemia, Moravia, and Silesia. While the first and second of these are well known, to the point where their existences in the minds of their inhabitants are not under discussion, the existence of the third is not clear. It is the smallest, the furthest from the capital, and it has the worst – if any – image. Now this region is suffering through the transition: its heavy industry is finished and this is a very problematic process here as in every locality in which an industrial transformation has taken place.
The position of Czech Silesia in the minds of its inhabitants was mapped in the form of mental maps several years ago at the University of Ostrava (Siwek-Kaňok 2000). Now, the considerations regarding the "different" status, has been used as a measure of the peripheral character of Czech Silesia.

Key words: Czech Silesia, regional identity, periphery, remote region

INTRODUCTION

The Czech state is composed of the three historical provinces of Bohemia (52,000 km^2), Moravia (22,000 km^2) and Czech Silesia (4000 km^2). Czech Silesia is part of a larger province that belongs to Poland, but its history is complicated. That history differs from the history of both of the larger Czech provinces. From about 1000 to 1327 AD, this was a Polish province, only to come within the Czech Kingdom between 1348 and 1526. It was a Habsburg Crown Land from 1526 to 1742, when Silesia was divided between Austria and

Prussia. After World War I (1918), 90 % of the area of Austrian Silesia became Czech Silesia, which the area still represents today.

In 1949, Czech Silesia became part of the Region of Ostrava, which in turn became the North-Moravian Region in 1960. The name Silesia thus disappeared entirely from the administrative map of Czechoslovakia. However, after the fall of Communism, the regions in question were abolished, being replaced in 2000 by new, smaller ones. Since then Ostrava has been an administrative centre of one of those regions, and, though this is now called the Moravian-Silesian Region, it is only the northern part of the Moravian-Silesian Province that existed from 1927 to 1949. Silesia is therefore included in the administrative region of Czechia. Two-thirds of the area and population of this administrative unit is Silesian, while one third is Moravian. A fragment of Czech Silesian territory (15 %), the small district of Jeseník, was in turn annexed to the central Moravian administrative region of Olomouc.

Czech Silesia also differs from both of the main Czech provinces, Bohemia and Moravia, in its population. The Czechs have never formed a majority of the population here. The western part of this region, whose centre is Opavia (Opava in Czech, Troppau in German), was populated predominantly by Germans until 1918. The eastern part of Czech Silesia, with its centre in Teschen (Těšín in Czech and Cieszyn in Polish), was populated primarily by Poles until 1918.

GEOGRAPHICAL AND ECONOMIC CHARACTERISTICS OF PERIPHERALITY

Silesia is geographically the most distant province from the Czech heartland of Bohemia, which lies in the vicinity of the capital city, Prague. Does this mean that it is the most peripheral part of Czechia? According to Rokkan, peripherality has two dimensions: horizontal (geographic) and vertical (economic and relating to political dependence) (See Flora, Kuhnle and Urwin 1999, p. 113–114). That this is a periphery in geographical terms is indisputable: Czech Silesia is not only the part of Czechia located most remotely from Prague, but it also lacks any convenient connections by highway with the rest of the country. Silesia cannot be considered a political periphery, because this concept is not applicable to a democratic state. However, its position as an economic periphery is clear. As a result of the economic changes that have taken place since 1989, Czech Silesia is one of the most economically damaged regions, not only in Czechia, but also in the whole of Central and Eastern Europe.

Other characteristics of peripherality documented in Czech geographical literature include:

- the late transition from a traditional to a more modern society
- specific land use (more abandoned fields)
- specific development of settlements (a reduction in population and abandonment of houses) (Havlíček, Marada 2004).

Is this valid for Czech Silesia? In fact, these characteristics do not apply to the whole territory, because Czech Silesia is not a homogenous region. The region itself has its own centre and its own periphery. Its periphery undoubtedly remains a periphery of the Czech state as well, but the centre, the city of Ostrava, is not. Rural Silesia, in the Jeseníky and

Beskydy mountain ranges, is situated far from the centre of the region and is peripheral to the Czech State from many points of view.

The central part of Silesia, situated in the vicinity of the fast-growing city of Ostrava, was the most industrial region in the whole Austrian empire in the 19th and early 20th centuries, and also in the Czechoslovakia of the later in the 20th century. It benefited substantially from the economic boom of the industrial era. Only in the 1990s did its economic recession begin.

PERIPHERALITY IN THE MIND

We need other criteria to determine peripherality. In addition to horizontal distance and vertical dependence, Rokkan mentions a third dimension of *difference* (Flora, Kuhnle and Urwin 1999, p. 115, 194). One important difference is difference in the mind, which is the root of periphery in the mind. Populations perceived by themselves or by others as different can be identified as populations of peripheral regions.

Some inhabitants of Silesia declare themselves to be Silesians. Shortly before the Czech Census of 1991, the Movement for Autonomous Democracy – Association for Moravia and Silesia managed to have regional identities (Moravian and Silesian) listed among the options for "nationality in the ethnic sense". In this census, 1.3 million Moravians (43 % of the population of historical Moravia) and 40,000 Silesians (4 % of the population of historical Silesia) declared their regional identity as their nationality in the ethnic sense. The 2001 Census showed a collapse in the tendency to declare regional identity as nationality: Only 300,000 Moravians and 10,000 Silesians declared themselves members of the Moravian or Silesian nations in the ethnic sense (one fourth of the number 10 years before). This is evidence that the distinction between ethnicity and regional identity is not clear, but it is not evidence of the weakness of regional identity and the feeling among Moravians and Silesians of being "other".

The University of Ostrava conducted a study of Silesian identity in Czech Silesia in 1998. The result of this research was a mental map of Czech Silesia as seen by inhabitants of this region (Siwek, Kaňok 2000). We could say that Czech Silesia existed in the minds of its inhabitants only to a limited extent. It was better known among long-time residents, who are predominantly found in the eastern part of the region, and less known among newcomers, who are predominantly found in the western part. The inhabitants of Silesia did not usually connect historical Silesia with the newly-established administrative structure of the Czech Republic.

NEW RESEARCH ON REGIONAL IDENTITY IN CZECHIA

Subsequently, the University of Ostrava and the Centre for Research on Public Opinion of the Sociological Institute of the Czech Academy of Science conducted another study of regional identities in November 2003. This study focused partly on the question of perceiving "otherness" among the Czech population over 15 years of age. The number of re-

spondents in this study was 1203. This was a quota sample chosen in accordance with the rules of sociological research. They represented a cross-section of the Czech population.

Some questions in the survey used for this study were designed to reveal the perception of similarity and difference among inhabitants of the Czech regions. For example, Question 66 asked, "Could you recognize an inhabitant of your own region if you met him/her abroad?" 43 % of the respondents answered that they could recognize inhabitants of their own region and 73 % of the respondents answered that they could recognize inhabitants of the other Czech regions. The most important signs of difference are as summarised in Table 1 below:

Table 1. Which elements are most significant in recognizing inhabitants of one's own region and inhabitants of other regions among the Czech population?

Respondents could recognize	By speaking (%)	By clothing (%)	By habits (%)
Inhabitants of their own region	63	20	16
Inhabitants of the other Czech regions	73	17	11

Source: Table 1–3 author's own research.

The inter-regional comparison of the professed ability to identify inhabitants of other regions is even more interesting. The regional differentiation to these perceptions is as presented in Table 2.

Table 2. Which region's people are most easily recognized as inhabitants of that region, by fellow inhabitants and by inhabitants of other regions?

Respondents professed ability to recognize inhabitants of:	Own region (%)	*Other regions (%)*
Prague	41	59
Central Bohemia	33	73
Southern and Western Bohemia	42	69
Northern Bohemia	33	67
Eastern Bohemia	26	66
Southern Moravia	49	83
Central Moravia	57	85
Silesia	66	80

This table shows that the most recognizable Czech region as seen by its own inhabitants is Silesia, followed by the two Moravian regions. The most recognizable Czech regions as seen by other inhabitants are the two Moravian regions and Silesia as well. The least recognizable Czech regions as seen by their own inhabitants are Eastern, Central

and Northern Bohemia, and Prague. The least recognizable Czech regions as seen by the other inhabitants are Prague and Eastern, Northern, Southern and West Bohemia. This means that the Bohemian regions (including Prague) are generally more homogeneous, and are seen as more homogeneous than the far-eastern regions of Moravia and Silesia. This is obviously caused by the distinctive Moravian and Silesian folk culture in terms of music, dance and costume, as well as their regional dialects. Because the homogenization of language and folklore is typically more intensive at the centre than in the periphery of any given area, the level of differentiation in these characteristics is a clear measure of peripherality.

Evidence of the validity of this statement can be seen in the contents of the last table, which presents answers to the supplementary question: "Which region's inhabitants were you thinking of when you answered the preceding question?"

This table gives clear evidence that Czech Silesia is the Czech region most perceived as "different". It is the most remote region in the minds of average Czech people.

Table 3. Regions considered most different from responents' own region

Respondents especially imagined as different, the inhabitants of:	%
Silesia and Northern Moravia	41
Moravia	24
Prague	22
Haná (Central Moravia)	20
Bohemia	18
The Region of Brno	14
Walachia (Eastern Moravia)	12
The Chodsko Region	11
Moravian Slovakia	11

CONCLUSIONS

Czech Silesia is undoubtedly the most peripheral region of Czechia, not only from the geographical and economic points of view, but also from a mental (psychological) perspective. The average Czech population perceives its inhabitants more frequently than any other as the most different from the others. They are also most likely to perceive themselves as the inhabitants of Czechia who are most different from the average. Remote geographical location, major economic problems due to a transition away from heavy industry and the mental distance explained here all identify this as the most peripheral Czech region.

REFERENCES

Flora, P. Kuhnle, S. and Urwin, D. (eds.), (1999) *State Formation, Nation Building, and Mass Politics in Europe*, Oxford University Press, Oxford.

Havlíček, T. and Marada, M. (2004) *Územní diferenciace v Česku*, in Jeřábek, M., Dokoupil, J. Havlíček, T. (eds.)*, České pohraničí: bariéra nebo prostor sprostředkování?* Academia, Praha, 103–114.

Siwek, T. Kaňok, J. (2000) *Vědomí slezské identity v mentální mapě*, Ostravská univerzita, Ostrava.

EUROPA XXI
2006, 15: 151–160

DISADVANTAGED ZONES IN ROMANIA AT THE PERIPHERY OF SOCIO-ECONOMIC DEVELOPMENT

BIANCA DUMITRESCU and NICOLETA DAMIAN

Institute of Geography, Romanian Academy
Dimitrie Racovita Street, no. 12, Sector 2, Bucharest, Romania
biancadumitrescu78@yahoo.com, nicoletadamian@graffiti.net

Abstract: The Government Ordinance No. 24/1998 sanctioned the post-1989 social and economic imbalances, especially in industry, by establishing a number of disadvantaged zones. These zones were defined as strictly territorially delimited areas featuring mainly mono-industries in a state of marked decline, employing over 50 % of the local active population which had to revert to other activities. The proportion of collective lay-offs surpassed 25 % of the total employed population. Another two relevant indicators were used to single out the less-favoured mining zones, namely, over 30% unemployment rate as against the national average, the absence of means of communication and a poorly developed infrastructure. Until 2004, a number of 38 disadvantaged zones emerged.

Key-words: disadvantaged zones, periphery, transition, Romania

Since the 1990s, when the process of European Union enlargement towards former communist countries in the East of the Continent began, Romania has been promoting a structural policy to sustain the less developed regions.

The characteristic problems confronting Romania, its historical evolution and social and economic dynamics call for the implementation of a specific regional development policy aimed mainly at reducing regional disparities.

Despite a positive legal framework (beginning with Law No. 15/1990), the post-1989 period witnessed a process of industrial restructuring, the decline of the processing industry when the big estates lost their power and control prerogatives, and a new competitional structure emerged, while demand on the domestic market decreased, the COMECON was dismantled, some foreign markets were lost and financial blockage set

Table 1. Disadvantaged zones

Development region	County	Name of zone	Component localities	Area (km²)	No. of inhabitants	Date and period of disadvantaged status
NORTH-WEST	Bihor	Ştei-Nucet	Ştei, Nucet, Drăgăneşti	83.45	14974	1999 (10 years)
	Bihor	Borod-Şincuiuş-Dobreşti-Vadul Crişului	Borod, Şincuiuş, Dobreşti, Vadul Crişului	386.75	18290	1999 (10 years)
	Bihor	Popeşti-Dorna-Aleşd	Popeşti, Dorna, Aleşd	229.9	23266	1999 (10 years)
	Sălaj	Ip	Zăuan, Ip, Cosniciu de Jos, Cosniciu de Sus, Zăuan Băi	60.13	4030	1999 (10 years)
	Sălaj	Hida-Surduc-Jibou-Bălan	Hida, Surduc, Jibou, Bălan	355.78	23705	1999 (10 years)
	Sălaj	Sărmăşag-Chiejd-Bobota	Sărmăşag, Chiejd, Bobota	175.28	13322	1999 (10 years)
	Maramureş	Baia Mare	Cicârlău, Tăuții-Măgheraşu, Baia Mare, Baia Sprie, Cavnic, Băiuț, Şiseşti	752.25	190812	1999 (10 years)
	Maramureş	Borşa-Vişeu	Borşa, Vişeu de Sus	867.18	45318	1999 (10 years)
	Bistrița-Năsăud	Rodna	Rodna, Şanț, Parva, Rebra, Lunca Ilvei, Maieru, Ilva Mică, Rebrişoara, Feldru, Sângeorz-Băi	1225.8	54468	1999 (10 years)
	Cluj	Turda	Turda	91.6	60438	2003 (3 years)
NORTH-EAST	Suceava	Bucovina	Cacica, Gura Humorului, Ostra, Stulpicani, Frasin, Fundul Moldovei, Pojorăta, Breaza, Câmpulung Moldovenesc, Broşteni, Crucea, Panaci, Şaru Dornei, Iacobeni, Cârlibaba, Vatra Dornei, Dorna-Arini, Poiana Stampei	3270.51	108101	1999 (10 years)
	Bacău	Comănesti	Comăneşti, Dărmăneşti, Agăş	546.19	47423	1999 (10 years)
	Vaslui	Negreşti	Negreşti	61.14	10807	2001 (3 years)
	Iaşi	Paşcani	Paşcani	77.58	48865	2002 (3 years)
	Neamț	Roman	Roman	29.78	81013	2002 (3 years)
CENTRE	Harghita	Bălan	Bălan	1.79	8887	1998 (10 years)
	Covasna	Baraolt	Baraolt	128.48	10346	1999 (10 years)

CENTRE	Alba	Apuseni	Zlatna, Almaşu Mare, Abrud, Ciuruleasa, Bucium, Sohodol, Mogoş, Roşia Montană, Baia de Arieş, Bistra, Lupşa, Sălciua	1084.97	42704	1999 (10 years)
	Alba	Cugir	Cugir	310.30	29723	2000 (10 years)
	Sibiu	Copşa Mică	Copşa Mică	25.79	5369	2000 (10 years)
WEST	Caraş-Severin	Bocşa	Bocşa, Ocna de Fier, Docnecea, Lupac	286.16	24766	1999 (10 years)
	Caraş-Severin	Rusca Montană	Rusca Montană	154.4	2136	1999 (10 years)
	Caraş-Severin	Moldova Nouă-Anina	Moldova Nouă, Anina, Berzasca, Pescari, Sichevița, Cărbunari, Sasca Montană, Oravița, Ciudanovița, Bozovici, Prigor, Mehadia	1926.18	62458	1999 (10 years)
	Hunedoara	Brad	Brad, Baia de Criş, Blăjeni, Buceş, Bucuresci, Buzeşti, Băița, Criscior, Luncoiu de Jos, Ribița, Tomeşti, Vălişoara, Vața de Jos, Vorța, Cerej	1318.44	51113	1999 (10 years)
	Hunedoara	Valea Jiului	Petroşani, Lupeni, Vulcan, Uricani, Petrila, Aninoasa	996.0	159679	1998 (10 years)
	Hunedoara	Hunedoara	Hunedoara, Călan, Ghelari, Teliucul Inferior	285.18	98553	2000 (5 years)
	Timiş	Nădrag	Nădrag	132.51	3452	2001 (3 years)
SOUTH-WEST	Gorj	Albeni	Albeni, Târgu Cărbuneşti, Roşia de Amaradia, Bustuchin	286.1	19418	1999 (10 years)
	Gorj	Motru-Rovinari	Cătunele, Motru, Glogova, Samarineşti, Mătăsari, Drăgoteşti, Câlnic, Fărcăşeti, Urdari, Negomir, Plopşoru, Bălteni, Rovinari	688.82	83753	1999 (10 years)
	Gorj	Schela	Schela, Bumbeşti-Jiu	308.33	13849	1999 (10 years)
SOUTH	Prahova	Filipeşti	Filipeştii de Pădure, Filipeştii de Târg, Măgureni	131.91	24963	1999 (10 years)
	Prahova	Ceptura	Ceptura	47.05	5348	1999 (10 years)
	Prahova	Mizil	Mizil	19.31	17072	2001 (3 years)
	Teleorman	Zimnicea	Zimnicea	131.31	16305	2000 (10 years)
SOUTH-EAST	Tulcea	Altân Tepe	Stejaru	47.0	2092	1999 (10 years)
	Vrancea	Mărăşeşti	Mărăşeşti	87.10	13288	2001 (3 years)
	Buzău	Nehoiu	Nehoiu	112.75	12610	2001 (3 years)
	Constanța	Hârşova	Hârşova	109.02	11339	2001 (3 years)

in. While some national economic branches (armament, energy, mining), deemed to be of strategic importance, received state benefits, the processing industry did not, it spinning off into joint-stock trading companies or liability joint-stock companies scheduled for privatisation.

The body charged with implementing the Government's decision to sustain the socio-economic development of disadvantaged zones was the National Agency for Regional Development.

From 1998 to the end of 2003, the Government declared 38 less-favoured zones within Romania's eight development regions.

The Emergency Ordinance No. 24/1998 issued by the Government stipulated specific facilities for the economic agents investing in these zones, also setting the legal and institutional framework for their administration. Most of the facilities granted to investors became effective beginning with July 1999.

Disadvantaged zones represent strictly delimited geographical areas formed of one or several neighbouring administrative-territorial units and supposed to meet at least one of the following conditions:

- have mono-industrial production structures on their territory and employ over 50% of the area's workforce;
- are mining zones in which over 25% of the workforce were laid off;
- the liquidation, restructuring or privatisation of some economic units made redundant over 25% of the workforce residing in the respective zone;
- the unemployment rate exceeds by 30% the national average;
- are isolated zones without any means of communication and have a poorly developed infrastructure.

A geographical area may be declared disadvantaged zone for a period of at least 3 years, but no longer than 10 years, with possible extension under the provisions of the Emergency Ordinance No. 24/1998.

Declaring zones disadvantaged was a stage wise process extending over several years (Figure 1):

- 3 zones at the end of 1998;
- 22 zones (mining areas) during 1999;
- 4 zones (with a high unemployment rate among the active local population) in November-December 2000;
- 6 zones (the share of the unemployed among the total local labour resources) in 2001;
- 2 zones in 2002 (the share of the unemployed among the total local labour resources);
- 1 zone in 2003.

Disadvantaged zones occupy about 7% of Romania's surface-area and have about 6.5% of its population.

In chronological order, the first zones to fall into the disadvantaged category were those having a mining industry on their territory, next came the processing mono-industrial urban centres.

Zones listing in the first category are usually engaged in mining (coal or the extraction of ones ferrous and non-ferrous ores). They have been declared disadvantaged zones

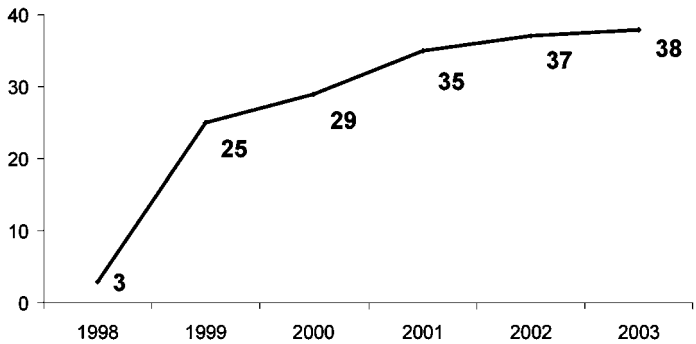


Figure 1. The dynamics of disadvantaged zones

on the proposal of the National Agency for Development and Implementation of Restructuring Programmes in mining zones. In time, these zones have developed a single industry, their social life depending solely on mining activities. It is the case of the Jiu Valley (pit coal), Motru (lignite), Comăneşti (brown coal), Baia Mare (non-ferrous ores), Albeni (oil), Bocşa (ferrous ores), Anina (pit coal), Brad, Apuseni (complex ores), Borşa, Rodna, Bucovina and Filipeşti.

The second category includes zones affected by restructurings and massive lay-offs. In this situation are mostly the small towns more recently industrialised, whose structures being loosely consolidated made it difficult for them to cope with the new competitional environment; some of the most relevant examples are Hunedoara, Copşa Mică, Zimnicea (metallurgy), Cugir (machine-building), Negreşti, Mizil, Nehoiu (textiles and wood processing), and Mărăşeşti (chemical industry).

Only 17 disadvantaged zones have a simple structure, covering the administrative area of only one locality. The others have a complex structure overlapping an administrative area of several localities, basically 137, of which 38 are urban and 99 are rural.

The disadvantaged zones can be classificated into (Figure 2):

- rural zones (only rural settlements) – Borod-Şuncuiuş-Dobreşti-Vadul Crişului, Rusca Montană, Ip, Sărmăşag-Ghieşd-Bobota, Filipeşti, Ceptura and Altân Tepe;

- urban zones (only one town: Bălan, Baraolt, Nehoiu, Paşcani, Roman, Negreşti, Năräşeşti, Mizil and Cugir or several towns: Borşa-Vişeu, the Jiu Valley.

- mixt zones (urban and rural settlements, with one town: Brad, Bocşa, Schela, Albeni, Rodna, and Hida-Surduc-Jibou-Bălan, or several towns: Motru-Rovinari, Moldova Nouă, Baia Mare, Comăneşti-Dărmăneşti, Bucovina, Apuseni and Hunedoara).

The majority of the less-favoured zones lie in the north-western part of Romania. And yet, despite the fact that the rural areas from the north-east (Botoşani and Vaslui counties) and south (Dolj, Olt, Călăraşi and Ialomiţa counties) of the country are extremely poor and highly dependent on climatic conditions, they have not been granted this status and the corresponding legal facilities.

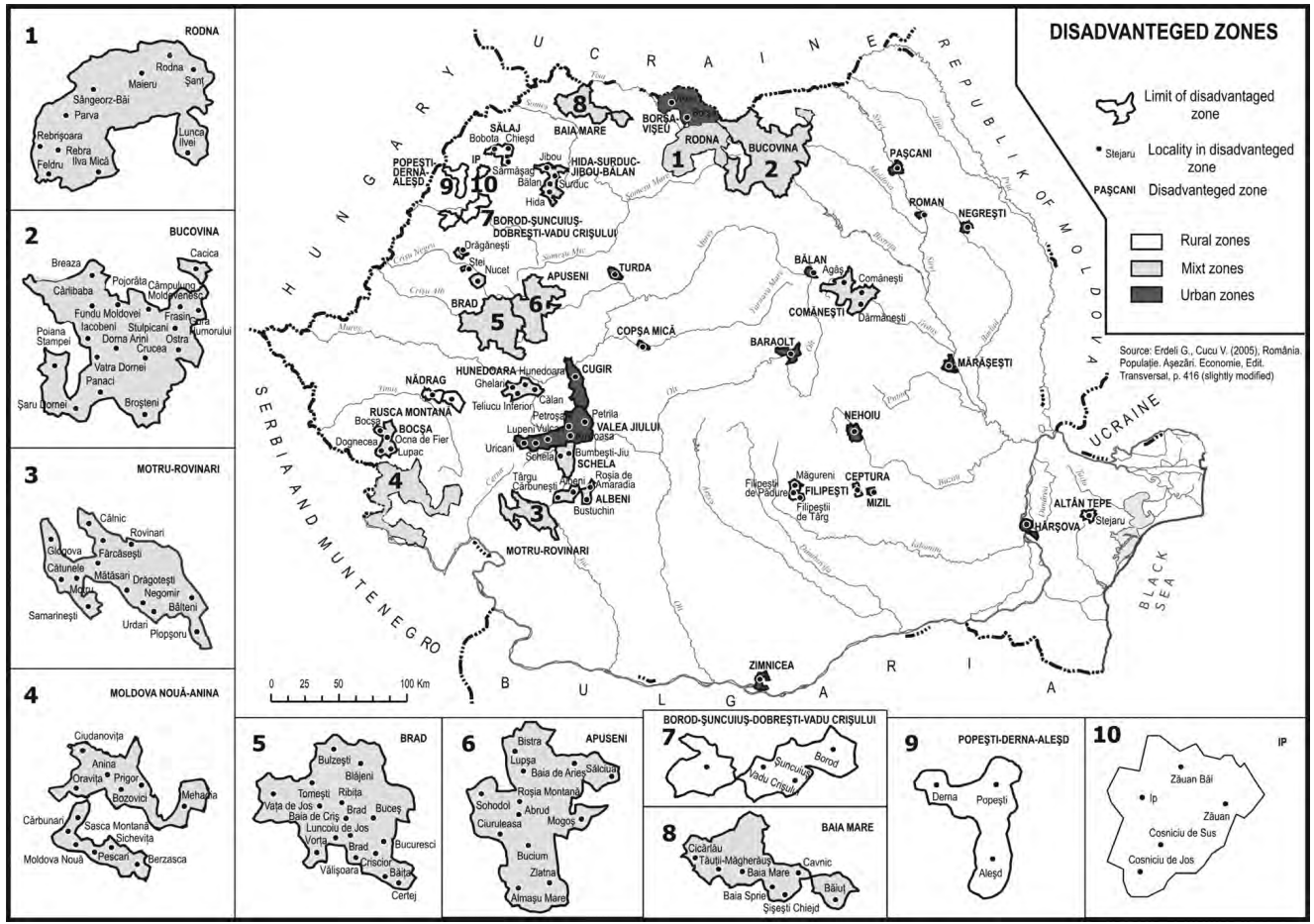


Figure 2. Disadvantaged zones in Romania

Most disadvantaged zones (Figure 3) singled out within development regions are found in the North-West Region (10 zones, 4,228 km^2), the West Region (7 zones 5,098 km^2) and the North-East Region (5 zones, 3,983 km^2). The first two regions contain mining zones the last region has both a dominantly mining sector and destructured industries.

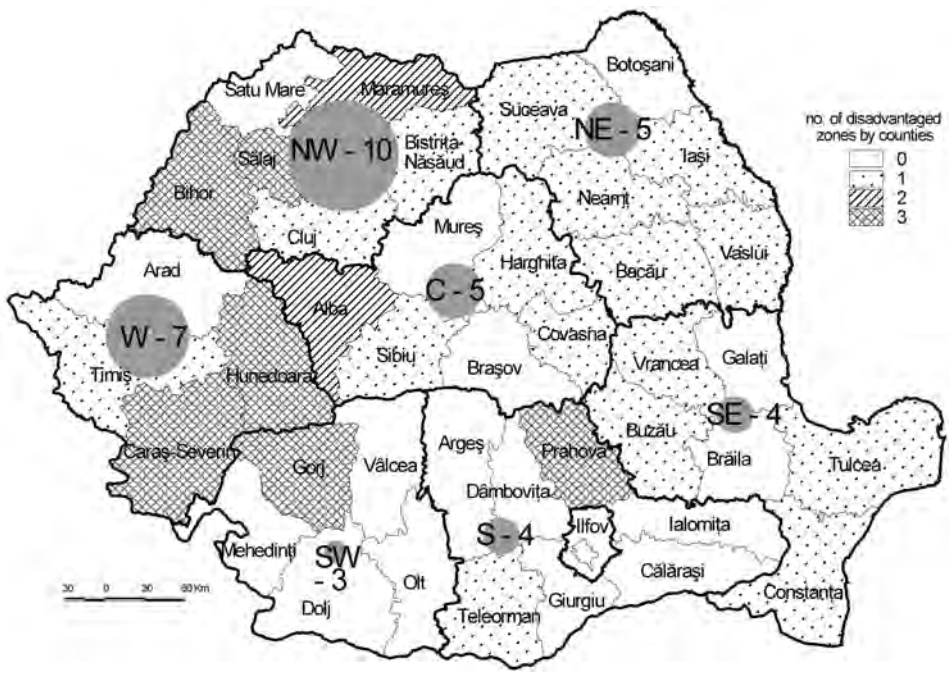


Figure 3. Distribution of disadvantaged zones by counties and development regions

The Centre Region numbers five less-favoured zones summing up 1,541 km^2 dominated by the Apuseni zone. The South-West Region lists three disadvantaged zones, extending over 1,283 km^2, in which the mining industry prevails.

The South and South-East Regions overlapping largely the lowlands are severlly affected by drought. The four less-favoured zones have a surface of 329 km^2 and 355 km^2, respectively. They are not agricultural zones, but simply mining localities or towns with a destructured industry.

What disadvantaged zones have in common is the following:

- a precarious transport infrastructure and public utilities network (water supply, severage system, gas, thermal-power, purification of waste waters, collection and storage of wastes) obsolescence of industrial equipments. These areas are at risk from isolation because of difficult access;
- important reserves of mineral resources, forests and a tourism potential mostly unexplored;

- employment disparities between male and female labour. In the past, unskilled or skilled male labour was usually attracted to these zones, but with the process of industrial reconversion and the ensuing development of the processing industry, the balance tipped in favour of female labour;

- lack of enthusiasm for attending training courses, as well as distance from university centres accounts for the low level of education among the population. These represent as many drawbacks in setting up businesses and developing an entrepreneurial spirit;

The Ministry of Development and Prognosis elaborated three special programmes approved by Government Decisions in June 2000 targeting disadvantaged zones:

- Promoting business (G. D. No. 520/2000)
- Sustaining investments (G. D. No. 521/2000)
- Sustaining rural activities (G. D. No. 522/2000)

The aim of these three special programmes was to create new jobs or employment alternatives for the redundant workforce living in these zones, and to support the beginning, development or finalisation of investments in production.

The Special Programme on "Promoting business" had been implemented in all disadvantaged zones until June 22, 2000. It targeted the trading companies entirely with autochthonous capital which carried out a productive activity other than agriculture, within a less-favoured zone. Under this Programme, entrepreneurs received unredeemable financial support to buy machines, equipment and installations.

The industries of choice were wood processing food and garments, plastics items, machines and equipments, and metal-work.

The Special Programme on "Sustaining investments" had in view the trading companies entirely with autochthonous capital, functioning in a less-favoured zone, and wishing to develop their business or make a new investment.

The special Programme on "Sustaining rural activities" has in view to help the development of economic activities in the rural area (agricultural production and related services); the improvement of economic production indicators of specific activities; the creation of stable jobs or employment alternatives for the redundant rural labour; also facilitate the use of and access to primary resources, to land, water and energy; grant assistance to farmers' associations in producing and selling quality products; contribute to developing the entrepreneurial spirit and offer better training opportunities to rural entrepreneurs.

The main goal of the disadvantaged zone policy was to develop economic activities liable to offering more jobs by way of attracting investments.

In view of it, investors were given a series of fiscal and financial facilities as follows:

- exemption from customs duties and the added value tax on machines and equipment meant for technological upgrading;
- restitution of customs duties on raw materials or major components necessary for local production;
- exemption from tax on the profit;
- exemption from taxation of terrains given another destination and no longer listing in the agricultural circuit;
- earmarking sums of money from the Special Development Fund to stimulate the export of finished products and industrial services;

- financing special programmes;
- financing the trading companies' investment projects through state participation in the social capital;

Over 1999-2002, a number of 3,147 entrepreneurs received definitive titles (85 titles/ disadvantaged zone on average) at the head of the list standing the North-West and West Regions with 1,409 and 874 titles, respectively (Figure 4).

A number of 54,153 new jobs were created, with the North-East and North-West Regions having attracted a high proportion of unemployed people.

Investment areas of interest were agriculture and animal breeding, services, trading and commerce, environmental protection and natural sites.

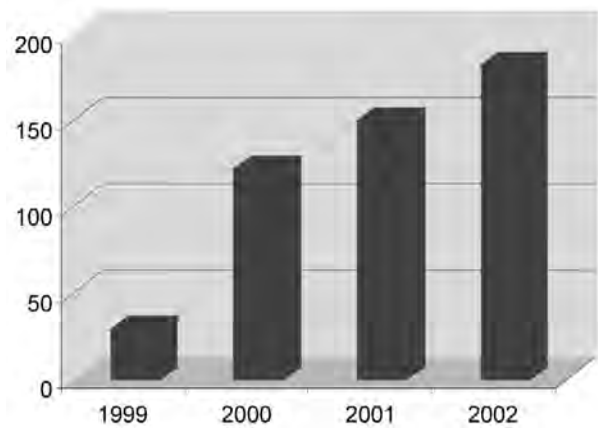


Figure 4. Investments in disadvantaged zones (1999-2002) (million Euro)

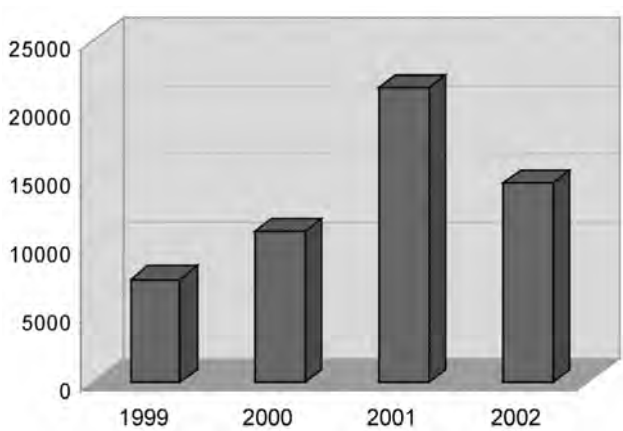


Figure 5. Number of jobs created by economic agents (1999-2002)

Development prospects for the disadvantaged zones:

a) Development of tourism

Tourism opportunities offered by the less-favour zones are expected to further investments and thus boost socio-economic development. Most localities lying close to the mountain and hill regions have a good, but still insufficiently exploited natural and anthropic tourism potential (e.g. Gorj, Suceava, Bihor and Caraş-Severin). Anthropic tourism offers the visitor sites of architectural, historical and cultural interest (monasteries, folk art, museums and memorial houses, cultural institutions), as well as outstanding industrial sites.

b) The development of agriculture by encouraging fruit-and-wine growth, and animal breeding.

c) The restructuring of the mining industry.

Development programmes for disadvantaged zones:

• The PHARE Programme has been implemented in Romania since 1990, funding being based on a feasibility study;

• The ISPA Programme financed by the European Bank for Reconstruction and Development, started in 2000. Its aims, is to develop transport networks linked to the European network and to observe environmental protection. Its users are the central and local authorities and the companies capable to sustain these projects;

• The Reconstruction Fund for Mining Regions sustains small and medium-sized enterprises, the NGOs and the trading companies. Its focus are the alternative activities, the social services and professional training;

• The SAPARD Programme targets primarily the rural area and finances professional training in such domains as production, conservation of the environment, observance of hygiene standards, animal husbandry, development of managerial skills for agricultural farms and tourist boarding-houses.

REFERENCES

Cândea, M., Bran, F. (2001) *Spațiului geografic românesc*, Editura Economică, Bucureşti

Cândea, M. (coord.) (2004) *Zone defavorizate în România*, Editura Universitară.

Cucu, V. (1995) *România. Geografie umană*, Editura „Glasul Bucovinei", Iaşi.

Cucu, V. (2001) *Geografia oraşului*, Editura Fundației Culturale „Dimitrie Bolintineanu", Bucureşti.

Popescu, C. R. (2000) *Industria României în secolul XX. Analiză geografică*, Editura Oscar Print, Bucureşti.

Popescu, C. R. (2003) *Zonele miniere defavorizate din România, Abordare geografică*, Editura ASE, Bucureşti

Săgeată, R. (ed.) *Soluții de optimizare a organizării administrativ-teritoriale a României din perspectiva aderării la Uniunea Europeană*, Editura Ars Docendi.

– (1984) *Geografia României, vol. II, Geografia umană şi economică*, Editura Academiei Române, Bucureşti.

– Anuarele statisticeale României, INS, Bucureşti.

– Recensămintele populației şi locuințelor, INS, Bucureşti.

www.gov.ro, data accesării 20 noiembrie 2001.

EUROPA XXI
2006, 15: 161–170

POLONINY – THE MARGINAL REGION IN SLOVAKIA

FRANTISEK PETROVIČ and PETER BEZÁK

Institute of Landscape Ecology, Slovak Academy of Sciences Bratislava
Branch Nitra, Akademická 2, 949 01 Nitra, The Slovac Republic
e-mail: Frantisek.Petrovic@savba.sk, Peter.Bezak@savba.sk

Abstract: Northeastern Slovakia, especially the region close to the border with Poland and Ukraine belongs to the least developed backcountries within the republic. Poor technical infrastructure, marginal location and the deficit of employment opportunities lead to the land abandonment and emigration. Several factors have been governed (and restrict now) a development of the region. The crucial was the construction of water reservoir (WR) Starina in years 1980-1986 as a source of drinking water. The construction caused the evacuation and removal of 7 villages and subsequently the changes in land use. This factor and relating limits affect the living of local people. At present, the region is being oriented to the recreational activities and tourism. From this point of view, the existence the National Park Poloniny, as well as, the Biospheric reserve East Carpathians could be a positive factor. The paper is focused on trends in landscape development and attitudes of stakeholders to these changes.

Key words: project Bioscene, landscape changes, scenarios of the future development

INTRODUCTION

Institute of Landscape Ecology of Slovak Academy of Sciences is participating at project of the Fifth Framework Programme of EU, BioScene – *Scenarios for reconciling biodiversity conservation with declining agricultural use in the mountains of Europe* (Oszlányi et al. 2004). The overall aim of BioScene is to investigate the implications of agricultural restructuring and decline for biodiversity conservation in Europe's mountain areas. The target is to provide practical outputs enhancing implementation of Natura 2000 and the

European Biodiversity strategy through integration of agro-environmental, conservation and rural development policy. In each study area is defined form that various scenarios of future agriculture change could take and is used ecological modelling to explore the biodiversity consequences in a range of agro-environmental settings. The scenarios, or "BioScenes", will include a *Business As Usual Scenario,* based on an extrapolation of current market and policy trends; a *Managed Decline Scenario,* based on the effects of withdrawal of agricultural support in the transition to free market conditions and a *Biodiversity Enhancement Scenario*, based on a major reform of agricultural and rural development policy geared to maximising biodiversity conservation.

LOCATION OF THE STUDY AREA

The study area is located in north-east of Slovakia on the border with Poland and the Ukraine, in Bukovské vrchy mountains which are part of the Carpathian mountain range (Figure 1). It has a highland to upland character, with an altitude range of 240-1221 m. The study area is in Snina district within the Prešov region and is part of the National Park of Poloniny and Biospheric reserve East Carpathians. It is the "wildest" area of Slovakia remote from industrial centres and with restricted accessibility. There are currently 10 villages (Jalová, Kolbasov, Nová Sedlica, Príslop, Runina, Ruský Potok, Topoľa, Ulič, Uličské Krivé, and Zboj) within the study area. In the year of 1980-1986, seven villages (Dara, Ostrožnica, Ruské, Smolník, Starina, Veľká Poľana, and Zvala) were removed as a result of construction of the water reservoir Starina. The total area of the territory is 34191 ha, with a population of 2 957 inhabitants. The population density of the populated territory ranges between 4.1 and 43.2 inhabitants per km^2, which is much less than the Slovak average of 110 inhabitants per km^2.

METHODS

In the paper we will concentrate on the description three different scenarios of the future development in the National Park of Poloniny, which have determine simple conditions. On this base we can predict of the future agriculture changes, landscape changes and biodiversity changes. The aim of the scenarios is point out the probable and possible trends of landscape development and their impact of the land use and biodiversity area in the context with sustainable development. The scenarios, or "BioScenes", will include a *Business As Usual Scenario,* based on an extrapolation of current market and policy trends; a *Managed Decline Scenario,* based on the effects of withdrawal of agricultural support in the transition to free market conditions and a *Biodiversity Enhancement Scenario*, based on a major reform of agricultural and rural development policy geared to maximising biodiversity conservation.

Suggested scenario process includes also feedbacks from local stakeholders, representing various institutions and local people from territory. As they have own experience, knowledge about landscape and activities within, this is important to involve in. Aim is to consult all scenarios and their impacts with stakeholders to reach more valuable and

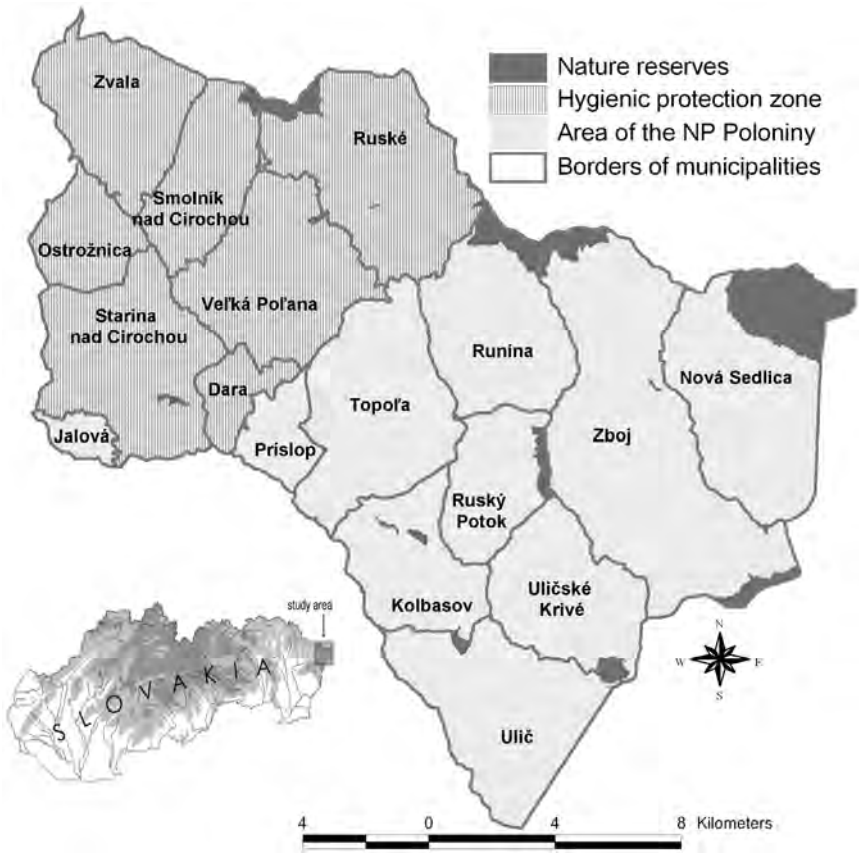


Figure1. Location of the study area within Slovakia, demarcation of borders and protected areas

exact picture about future development. Work with local stakeholders consists of several steps (Petrovič 2005):

- Visual change of landscape under scenarios (questionnaire)
- Assumptions and basic description of scenarios (questionnaire)
- All impacts of scenarios (questionnaire + discussion)

CHARACTER OF THE LANDSCAPE, MAIN CHANGES AND CURRENT TRENDS

The territory is a typical region with mountain agriculture, where grasslands dominate in agricultural landscape. Mosaic of forests, pastures and meadows together with narrow small fields around villages represent the basic elements of the land use of the study area. Other types of land use are very limited.

Forests present the most valuable element in the territory, as economically as from the natural protection point of view. Currently, the area takes about 85% of the territory. Original beech forests prevail (76.5% – Table 1), in several places creating primeval forest, which is the object of conservation. Protection of forest has a very long tradition (Vološčuk et al. 1988) and presently several sites of the fifth and the fourth degree of protection (small-area protection sites, like National Nature Reserve, Nature Reserve) are declared, rest belongs to third degree of protection (status of National Park).

Grasslands are also considered as very valuable natural resource, either economically or for nature protection. Grasslands became source of traditional farming in many years ago, when extensive agriculture was mainly focused on hay production and grazing, representing sort of lifestyle of local people. This kind of sensitive human management supplied extent and continuation of valuable grassland communities and increase of biodiversity. Nature protection in this region is also focused on maintaining these valuable grassland communities, some of them ranked to fifth and the fourth degree of protection. Moreover, the Poloniny NP takes name after these unique meadows called "poloniny" (semi-natural, species-rich mountain grasslands).

Traditional farming activities were followed by socialisation of the agriculture, which brought establishment of forest and agricultural enterprises. In the study area, two big state farms arose in beginning of 70-ies: forest-agricultural enterprise in Ulič (LPM Ulič) and State agricultural farm in Stakčín (in 1995 transformed to private hands, with later name Agrifop).

They started massively manage most of agricultural land in the area of NP Poloniny, especially easier accessible localities. Remote small patches of grasslands stayed without interest of big farms, individual extensive farming decreased and many of valuable grassland stands became abandoned and overgrown. In the last years orientation of agriculture in the region has been shifted from productivity to more environment friendly management. The farm LMP Ulič is responsible for the economic management of the major portion of the agricultural land in the study area. Private farm Stakčín is responsible for the land in the west part of vicinity of the water reservoir Starina. Work on this land is more limited because of existence of so-called hygienic protection zones which surround water reservoir. Today, whole area of agricultural land takes about 3500 ha (about 10% of the study area).

The phenomenon of the territory is water reservoir Starina, with hygienic protection zones (HPZ) of water source. In 1987 a water dam was built which provides drinking water for almost the whole area of Eastern Slovakia. Construction of the dam had a radical impact on settlement structure and the life of local people. All seven villages, located in the reservoir catchment, had to be removed during period of 1980–1986, people were removed into town all buildings in this area were liquidated. This fact was due to demarcation of the HPZ of water source (131 km^2), where special management regime needs to be provided, eliminating or limiting the socio-economic activities that would otherwise worsen quantitative and qualitative properties of waters.

However the study area came through many changes, last 50 years can be considered as the most dynamic, having significant impacts on landscape, biodiversity and livelihood of the local people. Increase of forest represents the greatest change its domination is even more visible now. This fact was caused as by evacuation of seven villages from the

HPZ of water reservoir and limitation of human activities as by shifting of traditional farming to more intensive agriculture. Abandoned grasslands and small narrow fields came to overgrowing by shrubs and trees and later to forest cover (Boltižiar, Petrovič 2004). New socialistic regime started changes in society, weaken relation of people to landscape, change of agricultural system and finally changes of land use. Rising of the area of intensive meadows, decline of mosaic of fields and meadows or grouping areas of arable land are clear proofs of this different management. Strong depopulation of the territory and lost interest to realise individual farming contributed to total abandonment of the region, with tendency of overall biodiversity decrease (Bezák 2005).

Land ownership in the area is extremely complicated. In the communist era land ownership was not registered and the identification of landowners is being processed at present. This, however, is a very hard task because due to the massive depopulation of the area (emigration to towns, to the Czech Republic and elsewhere) the real owners are hardly to be addressed or they do not have any written documents concerning ownership. Too much time, money and work is focused on property ownership adjustments, while in many cases landscape itself stays out of the interest and no any sustainable development can be realised, if land parcels are not clearly identified.

Current trends in the territory are derived from accession of Slovak republic to EU, where socio-economical conditions are rapidly changing, legislation is adapting to EU, engagement of institutions in decision-making processes is stronger, role of local farmers or conservationists is more important. Common agricultural policy is at the stage of implementation (*European commission* 1999, *European commission* 2003), productive agriculture is passed over and development of environment friendly agriculture and sustainable development are followed. Due to marginal location of our study area within Slovakia and its landscape character these trends are getting slower to the region and their influence will be showed in longer time horizon.

Table 1. Area and number of areas of main land use types and their changes in 1949–2003

land use / areas	Area in 1949 (ha)	Area in 2003 (ha)	Increase/ decrease of area (ha)	Number of areas in 1949	Number of areas in 2003	Change in number of areas
Arable land	576,2	23,6	-552,6	45	4	-41
Mosaic of fields and meadows	3923	707,6	-3215,4	0	73	73
Intensive meadows	0	1111,7	1111,7	90	161	71
Extensive meadows	712,1	690,2	-21,9	668	611	-57
Extensive overgrowing meadows	3040,7	1786,7	-1254	870	922	52
Transitional woodland-scrub	3622,2	272,2	-3350	313	137	-176
Forest	22242,7	29202,2	6959,5	504	523	19
Artificial areas (industry, farms, etc.)	2,4	33,0	30,6	3	13	10
Residential areas	71,7	108,6	36,9	699	389	-310
Water bodies	0	255,2	255,2	0	3	3
STUDY AREA	34191	34191	0	3192	2836	-356

DESCRIBE OF THE SCENARIOS

SCENARIO NO. 1: BUSINESS AS USUAL (BAU)

Business as usual scenario assumes continuation of current trends in sense of support payments for agriculture maintenance. In Slovakia, greater support for agriculture has been started in time after the year 2000, which came after socialistic regime till 1990 and suffering time of transformation in the years 1990-2000. Increasing proportion of subsidies in agriculture since 2000 represents base for current trends, which are definitely connected with practical implementation of new agricultural, environmental or rural programmes, applied in period of accession of Slovakia to EU (*Agriculture and rural*…2003a, *Rural development plan*…2003b). Payments from government create inevitable element not only for existence of agriculture in the region, but also as driver for local development of the region, keeping local inhabitants in the territory and secure their possibility for work (Bezák, Petrovič 2004). Moreover, most of current trends prefer agricultural development in harmony with biodiversity support and maintenance, nature protection and coming back of some old traditions and relation to environment.

Restore of management of agricultural land can stop or reduce succession processes in parts of agricultural landscape, abandoned in the past. Start of extensive management of formerly abandoned grasslands will create better condition for grassland species and in such way can contribute to the biodiversity maintenance in the study area. Although, agriculture tends to be focused on management of grasslands in the basins, nearby villages, therefore persistence of "poloniny" – mountain meadows might not be secured.

SCENARIO NO. 2: AGRICULTURAL LIBERALISATION (AL)

Liberalisation is based on one key assumption, which is withdrawal of all support to the agriculture sector, including support for any agro-environmental / rural development programmes. No any significant new intervention from government or any financial support is considered in the future development (Bezák, Petrovič 2004). Future trends and changes are derived from current stage and processes in the study area, supplemented by assumptions of finished agricultural support. Liberal conditions in the region cause decline of agriculture, although some individual farming remains, mostly related to nature protection interests. End of organised support can lead to stronger development of other activities in the territory, though even stronger abandonment is possible too.

Significant restriction of farming means end of crop production, mowing (except areas of nature protection), grazing, milk production, livestock breeding, etc. Agricultural machinery is sold off to prosperous farms or various companies outside the region or arranged for using in the forestry. Farming activities stay only in the form of tiny individual parcels and fields near villages, however in decreasing number. Forestry and nature protection stay in the region other activities hardly survive due to continuous depopulation and abandonment of the territory. Abandonment causes overgrowing of the most of agricultural land, gradual increase of shrubs and trees, forest expansion, the loss of the landscape structure and scenery of the narrow, small fields and meadows, forming mosaics in vicinity of villages, together with loss of habitat of plants and animals of these habitats.

SCENARIO NO. 3: MANAGED CHANGE FOR BIODIVERSITY (MCB)

Third scenario is based on one key assumption, which is withdrawal of all support to the agriculture sector, including support for any agro-environmental / rural development programmes. No any significant new intervention from government or any financial support is considered in the future development however management regimes are oriented on conservation with aim of biodiversity enhancement (Bezák, Petrovič 2004). Future trends and changes are derived from current stage and processes in the study area. Scenario is based on domination of the trends and features of the territory like strict conservation, connected also with compensation payments (property harm) for local owners. These compensation payments are emerged from current legislative instruments – Law No. 184/2002 on Waters, Law No. 543/2002 on Nature protection. Land is managed mostly by conservation authorities – National Park Authority, NGOs, and through local people working in harmony with conservation management.

There are not expected as many changes in the landscape structure as in the second scenario, because some grasslands must be kept in good state due to priority of biodiversity (*National Biodiversity…* 1997, *Strategic aims of…* 2000). Surely some agricultural localities stay without management, due to limits of nature conservation possibilities, mostly valuable grasslands are maintained. Nature protection is aimed also at the maintenance of the specific landscape structure of the territory – small fields and meadows, forming mosaics in vicinity of villages. Some of currently maintained private parcels around villages will be overgrown due to decrease of number of inhabitants, but there is increase of the utilisation of the plots for agro-tourism. Forest cover is slightly expanding, at the expense of some grasslands (especially those without good access and intensive grasslands), the forestry is concentrated at the regulated cutting – health cutting, growing native tree species, the forest represents important habitat for animal species, however great part of forest ecosystem is taking own course.

SCENARIOS PERCEPTION BY LOCAL STAKEHOLDERS

First set of questionnaires was based on graphical expression of possible scenario impacts on landscape change. Five localities from the study area were chosen and photographed afterwards image of pictures was modified to present possible changes under different three scenarios. Time horizon of changes is stated 25 years, so picture expresses landscape image in 2030. These visualisations of landscape were evaluated by respondents – local stakeholders, to get their opinion on landscape just based on image perceptions. Results from this questionnaire are presented in the Table 2.

Table 2. Summary of visualisation questionnaire of three scenarios by local stakeholders (in %)

Scenario/ respond	I strongly agree	I rather agree	Undecided	I rather disagree	I strongly disagree
Scenario No.1	40.00	38.18	10.91	7.27	3.64
Scenario No.2	10.91	20.00	21.82	32.73	15.55
Scenario No.3	34.55	50.91	7.27	7.27	0.00

More detail explanation of 3 scenarios we provided at stakeholder meeting, which was linked with questionnaires and discussion too. Aim of the first questionnaire was to get primary feelings of locals on basic descriptions of scenarios, without giving them idea of probable landscape and biodiversity change. Favour of scenarios is seen from Table 3.

Table 3. Summary of the first rating questionnaire (before consequences explanation) of three scenarios by local stakeholders (in %)

Scenario/ respond	I strongly agree	I rather agree	Undecided	I rather disagree	I strongly disagree
Scenario No.1	58.82	17.65	5.88	17.65	0.00
Scenario No.2	11.76	41.18	5.88	17.65	23.53
Scenario No.3	11.76	35.29	0.00	23.53	29.41

Having presentations of probable changes of landscape and biodiversity at the same stakeholder meeting we gave stakeholders another reason to look at scenarios again and re-evaluate their ranking. Firstly, through mutual discussion among partners landscape and biodiversity matters were clarified and through next questionnaire the final opinions were identified (Table 4).

Table 4. Summary of the second rating questionnaire (after consequences explanation) of three scenarios by local stakeholders (in %)

Scenario/ respond	I strongly agree	I rather agree	Undecided	I rather disagree	I strongly disagree
Scenario No.1	64.71	23.53	0.00	11.76	0.00
Scenario No.2	5.88	17.65	5.88	23.53	47.06
Scenario No.3	5.88	58.82	11.76	11.76	11.76

Realisation of questionnaire with 3 steps showed some changes in perception of landscape changes by stakeholders. The greatest difference is in evaluation of scenario No. 2 (liberalisation), where pictures within visualisation caused indecisiveness in stakeholder thinking, some of them agreed with image of the landscape, some of them not. After brief explanation of this scenario, second questionnaire proved mostly agreement with liberalisation, while after explanation of all impacts of this scenario stakeholders significantly shifted their opinion towards refusing liberalisation scenario. This was result of not fully considering of scenario implications by stakeholders in first two questionnaires. Scenario No. 1 (business as usual) was always supported in questionnaire, as in visual or text form, its increased dominance came after full clarification of all impacts and stakeholders are very in favour of agricultural maintenance. Scenario No. 3 (biodiversity maintenance) is the most debatable, what causes problems to stakeholders to identify their relation. While landscape pictures were liked by stakeholders, second questionnaire brought mixed attitude about this scenario, where stakeholders did not know to estimate its possible im-

pacts in the territory. Detail explanation of landscape and biodiversity impacts confirmed validity of this scenario in stakeholder's opinion.

CONCLUSIONS

Aim of defining various scenarios of landscape and biodiversity change give attention on possible future trends in the region, including extremes, of which local people or institutions could be aware of. It also helps to find way for sustainable development in the study area (Huba, Ira, 1988; Izakovičová, Petrovič, Moyzeová, 2003). The final result for local management in the landscape doesn't lie on choosing one of the scenarios, but in making some realistic view on all of them to select and bring issues favourable for all participants in the sense of maintaining landscape and biodiversity.

Stakeholders more or less prefer a combination of BAU and MCB, but in the current situation BAU is desirable much more for them and for whole region (and is understandable) than MCB. For them, support for agriculture is essential for such kind of landscape, favouring as farming activities with positive impacts on natural values and biodiversity, as local livelihood, possible forms of agro-tourism, attracting visitors to the region and total economic growth of the region.

ACKNOWLEDGEMENT

Results described in this paper were achieved with support of the European Commission; project *Scenarios for reconciling biodiversity conservation with declining agricultural use in the mountains of Europe – BIOSCENE* (No. EVK2-CT-2002-00167).

REFERENCES

Bezák, P. (2005) *Human impact and landscape changes in the Poloniny National Park: drivers, relations, implications* (in Slovak), in Herber, V. (ed.) *The physical-geographic collection 3,* Proceedings of the international geographic conference Cultural landscape, 14–15. 02. 2005, GÚ PF MU, Czech Republic, in press.

Bezák, P., Petrovič, F. (2004) *Alternatives of possible landscape development in the East Carpathians Biosphere Reserve* (in Slovak), in Midriak, R. (ed.), *Biosphere reserves in Slovakia V.* Proceedings of the 5th National conference on Biosphere reserves in Slovakia, 29.–30.9.2004, Nová Sedlica, TU Zvolen, 73–78.

Boltižiar, M., Petrovič, F. (2004) *Land use in the Poloniny National Park in years 1949–2003* (in Slovak), in Midriak, R. (ed.) *Biosphere reserves in Slovakia V.* Proceedings of the 5th National conference on Biosphere reserves in Slovakia, 29–30.09. 2004, Nová Sedlica, TU Zvolen, 57–63.

European Commission (1999) Council Regulation (EC) No 1259/1999 of 17 May 1999 establishing common rules for direct support schemes under the common agricultural policy.

European Commission (2003) Commission Regulation (EC) No 2199/2003 lays down transitional measures for the application in respect of the year 2004 of the single area payment scheme.

Huba, M., Ira, I. (1988) *Strategy of the sustainable development of the Eastern Carpathian region,* (in Slovak), GEF, Bratislava.

Izakovičová, Z., Petrovič, F., Moyzeová, M. (2003) *Evaluation of the region East Carpathians from the aspect of the principles and criterions of the sustainable development,* (in Slovak), in Izakovičová, Z. (ed.), *Proceedings of the conference Slovakia one year after Johannesburg*, Smolenice, 29–30. 04. 2003, ÚKE SAV, Bratislava, 117–124.

Agriculture and rural development 2004–2006 (2003a), (in Slovak), Sectoral operational programme, Ministry of Agriculture of the Slovak Republic, Bratislava.

Rural development plan 2004–2006 (2003b), (in Slovak), Ministry of Agriculture of the Slovak Republic, Bratislava.

National Biodiversity Strategy of Slovakia (1997) Ministry of Environment of the Slovak Republic Bratislava.

Strategic aims of nature protection in the Poloniny National Park (2000), (in Slovak), National park Poloniny Administration, Snina.

Oszlányi, J., Halada, Ľ., Boltižiar, M., Bezák, P., Halabuk, A. (2004) *First results of the BioScene project* (in Slovak), in Midriak, R. (ed), *Biosphere reserves in Slovakia V.* Proceedings of the 5th National conference on Biosphere reserves in Slovakia, 29–30.09. 2004, Nová Sedlica, TU Zvolen, 49–55.

Petrovič, F. (2005) *The perception of the landscape structure and biodiversity changes from a view of stakeholders in national park Poloniny,* (in Slovak), in Herber, V. (ed.), *The physical-geographic collection 3.* Proceedings of the international geographic conference Cultural landscape, 14–15. 2002, GÚ PF MU, Czech Republic, in press.

Vološčuk, I. et al. (1988) *The protected landscape area of the Východné Karpaty,* (in Slovak), Bratislava.

EUROPA XXI
2006, 15: 171–184

RESEARCH INTO PERIPHERAL AREAS IN THE CZECH REPUBLIC – CHANGES IN THE LANDSCAPE AND LAND USE IN THE MODEL REGIONS

MILAN JEŘÁBEK

Department Geography, Faculty of Sciences, J. E. Purkyně University Ústí n. L.
České mládeže 8, CZ-400 96 Ústí n. L.
jerabek@sci.iujep.cz

Abstract: In research activities in the Czech Republic, the centre of attention has been shifting towards peripheral territories. As a result, there is a project shared by several academic institutions that is focused on the position of the periphery within the settlement system in the context of European integration. This paper presents several model regions and it focuses on their natural conditions, land-use and prospects for local/regional development. In the analysis, it combines objective data with the results of the author's own empirical inquiry conducted among the regions' inhabitants.

Key words: Periphery, geography, empirical enquiry, landscape, land use, natural potential, development, change

THEORETICAL INTRODUCTION

So far, geographical research has mainly been concentrated on "nuclei", areas with a high concentration of population, industry, etc. (e.g. Hampl 1996) while peripheral regions have been perceived as just "lie-between", unimportant territory. However, it is now apparent, that within the complex settlement system they constitute an irreplaceable piece in the mosaic and have become an important factor in the process of natural diversification through their close interaction with the "nuclei". Periphery can be defined as an area of insufficient integration into the structures, processes, and systems and characterised by defective functional and social relations, which are the results of an unbalanced interaction of social, economic, political, cultural and physical-geographical factors (Schmidt 1998).

Internationally, long-term attention has been paid to peripheral, marginal regions (e.g. Friedmann 1973; Leimgruber 1994; Heintel 1998 ad.) and the interest has even been institutionalised by forming work commissions and study groups within the IGU, which have already borne fruit: various publications (e.g. Jussila, Majoral 2000).

In contrast, the issues of peripheral, marginal regions in the Czech Republic have been traditionally paid much less attention than transformation processes, suburbanisation problems or issues related to the nucleus areas as controlling units. The peripheral areas have been understood as complementary to the nucleus ones (Hampl, Gardavský, Kühnl 1987) and characterised as controlled or even subordinated. Before the Velvet Revolution in 1989, some sociologists (e.g. Musil 1988) primarily focused on the problem of peripherality in connection with their research into settlement regeneration and function systems. In the transformation period, these issues were explored within studies of problematic (structurally underdeveloped) regions or as an aspect of overall regional diversification (Blažek 1996). Studies specifically oriented to these questions were then published within research into the countryside or the borderland (Kubeš 2000; Jeřábek 1999; Jeřábek 2001; Spišiak 1999).

Principally, there are two Czech research institutes that study peripheral regions systematically, mainly at micro-regional and subregional levels: the Brno branch of the Geonics Institute of the Czech Academy of Sciences (e.g. Zapletalová 1998; Vaishar 1999a, Vaishar 1999b) and a group of "Albertov school" geographers at the Faculty of Sciences of Charles University in Prague (Jančák 2001; Jančák, Havlíček, Chromý, Marada 2001).

THE GEOGRAPFIC RESEARCH PROJECT

In 2003, a project of GA CR called "Peripheral Regions in the CR" as Part of Spatial Polarisation in the Context of European Integration started as a follow-up to a previous university project titled "Prospects of Development in Peripheral Regions of the CR" (Jančák et al. 1998-2001).

There are two other groups that have been involved in the former project: the geographers of West Bohemian University in Pilsen and a team of J. E. Purkyně University in Ústí nad Labem to which the author belongs. Our team is mainly focused on regional geography and development (with special emphasis on the borderland), on settlement and cultural geography as well as sociological approaches in geography (see e.g. Anděl, Jeřábek, Oršulák 2004; Balej, Anděl, Jeřábek et al. 2004).

Our team's project activities in 2003 were oriented, among other things, to analysing the data from the census of 2001 as well as to studying the development during the transformation period, defining the Czech peripheral regions and their typology. Then the year 2004 was devoted to preparing and conducting the team's empirical field research in several selected areas.

In 2005, our team's project activities were concentrated on analysing the data from our field research including layers of GIS as well as on formulating the theoretical conclusions (the theory of spatial polarisation in the CR) with special attention to practically applicable recommendations for regional policies. Our major tasks in publication and

presentation this year are the organisation of an international conference on research in peripheral areas (Praha 26–27.11.) and the preparation of a monograph (completing, editing, and printing).

In our research, we aim to combine so-called soft and hard data, the analysis of which becomes the basis for the study of the development in the transformation period and of the current situation as well as for outlining the prospects of future development. Our team is interested in a wide range of issues, which are thematically grouped in the following blocks:

– the region's position and interrelations including accessibility
– the countryside: its potential, its civic, technical and transport facilities
– the stability of the population and settlements, migration
– the human potential: the quality of the population, economic activities and the labour,
– the network of institutions, and the movers

Naturally, our approach to the issues related to the peripheral regions is to see them in the wider context of spatial development rather than just in isolation.

METHODOLOGICAL APPROACHES AND ORIENTATION OF THE PAPER

In our research work, we have combined the thematic and the territorial approaches. We divided our relatively large team into smaller groups, within which we explored and analysed the natural and socioeconomic conditions. The results were then summarised and evaluated in a general SWOT analysis. Individual working groups (concrete researchers) carried out partial studies of the territorially relevant regions, in which they were guided by the traditional "geographic" scheme (order) and paid special attention to following blocks of socio-economic issues:

- the population: size, development, natural movement, migration, density, age structure, education, religious structure and natives,
- the population's economic activity, employment in sectors, unemployment, commuting to work, enterprise,
- transport and technical infrastructure, facilities,
- election results and budgets in selected settlements.

The other method used in our research is based on the team's own empirical inquiries, which have already become an inseparable part of any regional study. These polls and inquiries provide complementary, or even correctional, data to the information from statistical sources.

The method of the inquiry was a questionnaire and the respondents were over 15, chosen through a combination of random and quota selection methods according to sex, age and permanent address. It was our goal to obtain a representative sample of the population.

The paper presents data from both of them. The geographic position, the demarcation of the microregions and the characteristics of the natural conditions including details about land-use represent the objective approach, while the other one is based on our respondents' answers to 4 questions about their perceptions of the landscape and about

their assessments of the regions'/localities' prospects of development. In the final part of this paper, the data from the two sources are compared to each other both methodically and regionally.

INTRODUCTION OF THE MODEL AREAS

For our detailed study, we have sampled 15 areas, which include inland peripheries, borderland peripheries, and traditionally weak rural peripheries which are structurally underdeveloped. When allotting the regions to particular sub-teams, we took into account both their real positions and the teams' possibilities. However, in order to simplify and shorten this paper, we have only included 8 areas that are listed in Table 1.

Table 1. Basic Characteristics of the model regions

Region	Population	Number of settlements	Average settlement size	Number of respondents	Percentage of respondents represented by the population
Nové Hrady - Jílovice	11501	7	1643	56	5
Sedlec-Prčice	7439	5	1488	112	15
Moravské Kopanice	1700	5	340	138	81
Kozákov	6462	12	539	281	43
Radnice	2115	13	163	193	91
Osoblaha	2141	4	535	82	38
Tachov	22913	1	22913	268	12
Říča ny	14322	6	2387	223	16
Total	68593	53	1294	1353	20

Source: Czech Statistical Office, 2001.

GEOGRAPHIC POSITION AND DEMARCATION OF THE MICROREGIONS

The area around Moravské Kopanice is situated in the eastern part of the Uherské Hradiště District. This region was seriously affected by the split of Czechoslovakia, after which many ties with Slovakia were cut. As a result, the area is now considered a typical example of a periphery at a newly created border.

The model region Novohradsko lie in the southernmost part of the Czech Republic near the Austrian border: in fact it makes up the eastern corner of that territory. After the Iron Curtain fell, its position changed into a very advantageous one, as it can benefit from having a developed EU country as a neighbour.

The microregion Osoblaha is surrounded by Polish territory from three sides. It constitutes the northern tip of the Moravskoslezský (Moravian-Silesian) Region and it be-

longs to the problematic areas in the CR. For the years 2004 to 2006 it has been listed among the regions to receive intensive state support within the framework of government regional policies.

The area between Kozákov and Trosky lies in the territory of two districts and two regions: the Semily District in the Liberec Region and the Jičín District in the Hradec Králové Region. It constitutes an "inner" periphery (characterised by the administrative structure and transport network) in either of them.

The model region Říčany is actually not a periphery as it is situated in the south-east hinterland of the capital city of Prague. It has been included in the research as a reference region, i.e. to be compared to the other ones. It is positively affected not only by the proximity of the metropolis, but also by the existence of Motorway D1 and related activities.

The area around Sedlec-Prčice on the border of the Central Bohemia Region and the South Bohemia Region is not a classical "outer" peripheral microregion characterised by its extreme position in the mountains. However, for a long time, it was divided into several districts (the five settlements belonged to four different Districts), which fact has taken its toll as the administrative isolation obstructed cooperation between the villages.

The Tachov microregion is formed by the north-west part of the former Tachov District in the Plzeň Region. It borders Germany (Bavaria) in the west, which fact has enabled restoring the historical relations that were severed during the Cold War as well as reviving the local economy. Nevertheless, there is little doubt that the region still remains one of the peripheries of the CR due to its position and low importance.

NATURAL CONDITIONS

The territory around Moravské Kopanice belongs to the Bílé Karpaty Nature Reserve, which was also proclaimed a Biospheric Reserve (with special protection) in 1996. The countryside's varied hilly character did not allow ploughing the pastures on a larger scale in history, and it is now strictly forbidden to change the character of the Nature Reserve in any way.

The region Novohradsko is characterised by relatively unspoilt natural conditions as almost all of its territory is protected (the Třeboňsko Nature Reserve in the north, and the Novohradské hory Nature Reserve in the south). Some of its mountains are over 1,000 m above sea level. Due to the special bedrock, there are large reservoirs of good quality underground water, which is drawn and sold as mineral water.

The microregion Osoblaha is situated in the Silesian Lowlands, but the Zlatohorská Vrchovina (Highlands) also stretches into that area. Here we can find quite a few drift boulders of North European granite as evidence of this area being glaciated from Scandinavia some time during the Quaternary Period. The locality is a bird refuge and there are also many rare plants found in a landscape of a very interesting character.

The region Kozákov covers the rolling lowland area between the Ještěd-Kozákov Hřbet (Ridge) and Jičín Pahorkatina (Uplands). The local environment is extraordinarily clean: the area belongs to the cleanest ones in the CR. There are deposits of semi-precious stones in the surroundings of Kozákov. In the west, the microregion borders the Český ráj (Bohemian Paradise), which is extremely attractive for tourists.

The part of Bohemia in which the region Sedlec-Prčice lies is nicknamed Bohemian Siberia for its harsh, cold climate. It has preserved a very individual character and remained the home of many a valuable flora and fauna community. It has also become a sought-for tourist locality, mainly because of its picturesqueness and unspoilt natural world.

The typical relief of the Tachov model area is formed by Český les (Bohemian Forest), which is heavily wooded mainly in spruce monoculture. Until recently, most of its territory was part of a military zone and that is why it has been little affected by human activities. There is relatively little intensive agriculture, but it is significant for its numerous water bodies.

LAND USE

Land use is determined not only by natural conditions (altitude, mountainous character, etc.), but also by the geographical position (distance from the centre) and by the area's previous socio-economic development. This being said, it is not surprising that we can see a relatively high degree of diversity in the proportions between the particular categories, in the proportion of farm land and other types of land or in the structure of farm land itself. Statistical data about the situation in 2001 are provided in Figure 1.

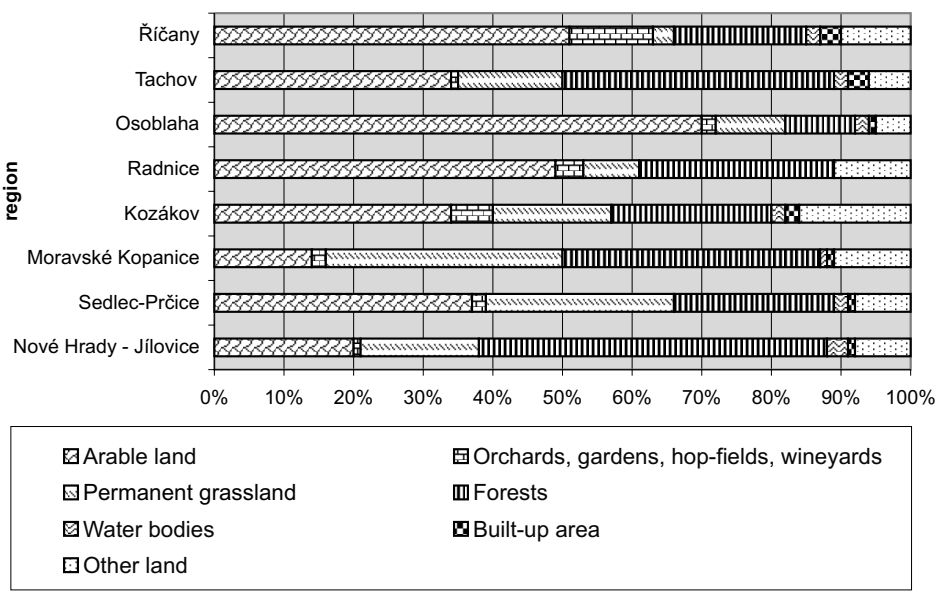


Figure 1. Land-Use in the model regions
Source: Czech Statistical Office, 2001.

The highest agricultural land use is found in the Osoblaha microregion – 4/5 of its total area, the majority of which is arable land. In most selected regions (apart from Nové Hrady – Jílovice and especially Moravské Kopanice) the percentage of arable land oscillates between 30 and 50% of the region's area. Permanent grassland has the largest share in Moravské Kopanice and Sedlec-Prčice, as opposed to its minimum share in the Radnice and Říčany regions, where there is a large percentage of orchards and gardens, which fact indicates developed exurbanite fruit and vegetables cultivation.

For our analysis of the historical development of land use during the last 150 years, there are reliable data for 1845, 1948, 1990 and 2000. To describe the changes, the authors have selected two microregions: Kozákov and Nové Hrady – Jílovice. The most significant changes can be seen in the percentage of arable land and subsequently in the farmland fund. Historically, there were quite dynamic changes during the socialistic period 1948-1990, when intensive farming started even on land that was not ideally suitable for agriculture. However, the changes throughout the entire period of 150 years do not seem to be major. It is possible to say that the transformation after 1990 has had a positive effect, as the percentage of arable land has been decreasing while the area of grassland and forests has grown. In addition to that, other functions of agriculture than production, e.g. landscaping, have started playing an increasingly important role.

Forests are typical of most borderland regions: they even make up a full half of the area in the Nové Hrady – Jílovice region, which is situated on the Czech-Austrian border. The smallest share of forests is found mainly in the Osoblaha region and in Říčany, where they only take up a tenth of the total area. The percentages of both water bodies and built-up area are small and there are no significant differences either.

SUBJECTIVE PERCEPTION OF THE LANDSCAPE

In order to complement the statistical data, the authors have included some selected subjective finds from their own enquiries in the model areas. The respondents were locals over 15 years old and their total number was 1353 in all 8 regions. The largest group of respondents was from the Kozákov model region, and the smallest one from Nové Hrady – Jílovice. The sizes of the subject samples are sufficient to enable comparison. The questionnaire used in the poll consisted of 42 questions out of which four were selected for this paper, which is concentrated on the current situation, the development and the prospects of the model areas.

In the first two issues, we focus on the aesthetic quality of the landscape and on assessing the changes after 1989. In Question 1, the respondents could select one option out of three: beautiful, neither beautiful nor unsightly and finally unsightly, and in Question 2 they were offered the attributes "exceptional", "standard" and "ordinary".

Considering the nature of all peripheral regions, we will not find it surprising that (apart from the Říčany region) the majority of our respondents – from 4/5 to "almost all" – thought the countryside they lived in was beautiful. On the other hand, a much smaller percentage of them agreed that the landscape was exceptional. The highest level of "specifics awareness" was displayed in the Moravské Kopanice and Kozákov regions, yet there were just roughly one half of positive answers in comparison to Question 1.

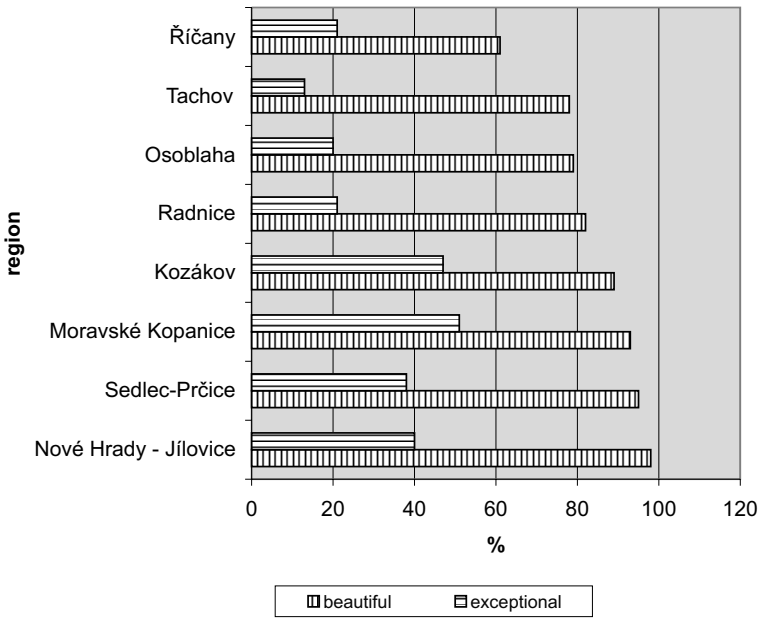
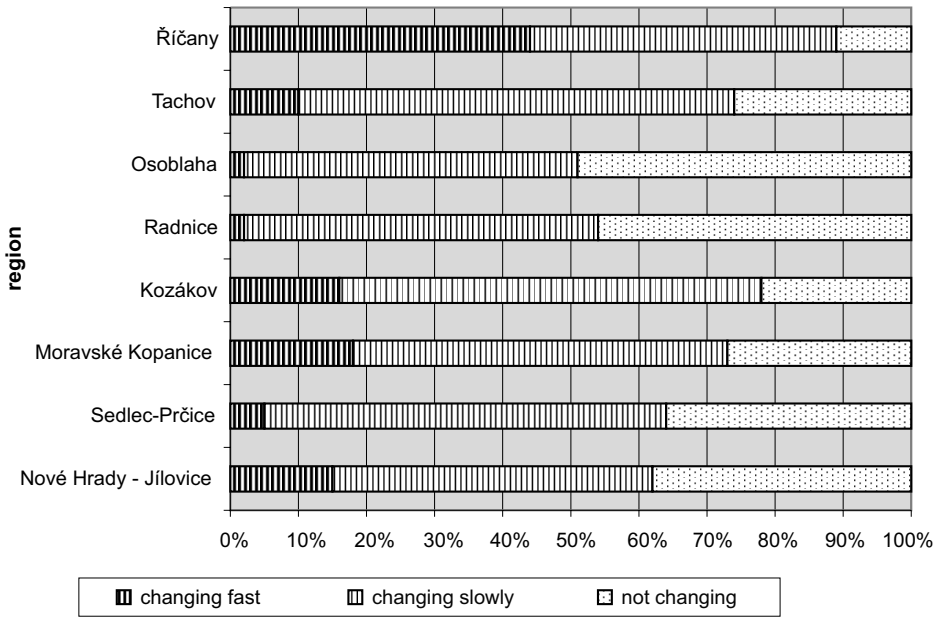


Figure 2. Current perception of the landscape
Source: The author's own research, 2004.

The other block of questions tried to map the perception of the development dynamics, of the changes in the countryside (Figure 3a, b). We were only marginally interested in whether the changes in themselves are positive, neutral or negative. There is no doubt that both internal conditions (endogenous potential) and external ones including the geographical position played an important role. Most respondents (45–62 %) expressed the opinion that their landscape was changing slowly. Subjectively, and perhaps also objectively, the most dynamic development could be seen in the Říčany region, which lies in the exurbanite belt around the capital Prague. In comparison with other regions, it was rather atypical, which only proved that it is not a periphery and that its selection as a reference region was correct. On the other hand, the Osoblaha borderland region and the Radnice inland region appeared to be stable, i.e. the landscape in them was perceived as unchanging.

Answers to the following question provide a similar view complemented by the respondents' evaluations of the changes. Most respondents perceived the changes as neutral (up to 62 % in the Radnice region), and there are some regions in which the changes were felt positively (in the Kozákov region over a half of the respondents). Negative perceptions are not very frequent, but in the Moravské Kopanice and Nové Hrady – Jílovice regions every fourth respondent was of that opinion.

The next block was devoted to evaluating the suitability of the natural conditions for life and to utilization of the local landscape potential. In both questions, the respondents



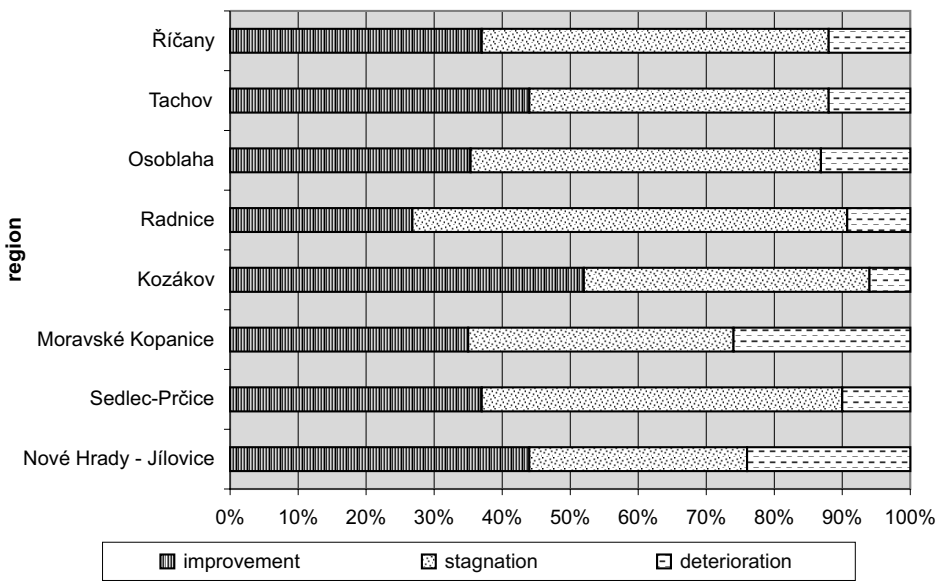


Figure 3a, b. Perception of landscape character – development and classification

Source: The author's own research, 2004.

were offered three options: excellent, average and bad respectively satisfactory, average and insufficient, each of which was allocated a mark (1, 2, and 3). The answers were then calculated into a weighted average.

The respondents see the Nové Hrady – Jílovice model area as the "most suitable for life" (the mark is 1.35) with a sizeable lead over the following regions: Kozákov, Sedlec-Prčice, Osoblaha and Moravské Kopanice. At the other end of the scale, the Radnice region was given the worst mark (1.81).

The utilization of the local landscape potential came out appearing much weaker: the marks oscillated between 1.74 and 2.45, which means they were average bordering on insufficient. Obviously, the best situation was in Říčany and Osoblaha, i.e. in two regions which have hardly any common features. On the other hand, the results were expected to be better in Nové Hrady – Jílovice, Moravské Kopanice and Tachov regions.

The last question analyzed in this paper was about the most effective way to utilize the local landscape. The respondents were offered three options complemented by an open-ended answer, which was provided very seldom. The respondents in most model areas thought that the best way to utilize the landscape was tourism: it dominated in Kozákov (65 %), and in both Central Bohemian regions it obtained over 50% of votes. Intensive agricultural production ranked second, and it received the most in the Osoblaha and Nové Hrady - Jílovice regions (50 respectively 46 %). Only in Moravské Kopanice (39 %), Říčany and Radnice (one quarter respectively one fifth) were statistically significant numbers of respondents who thought that the landscape should not be utilized at all.

The final summery rating is based on combining the above mentioned subjective sub-ratings and the regions' rankings in them, while the authors consider each rating to be of identical value (Table 2). The results shown in the table suggest that each of the model areas has its stronger and weaker points, from which we can conclude that they have their individual character (eclectic approach). On the other hand, we can distinguish three groups that stand out of the ranking, even though the number of units is relatively small.

Table 2. Summary of subjective views of the model regions

Region	Beautiful	Exceptional	Improvement	Suitability	Potential	Ranking	Total value
Nové Hrady - Jílovice	1	3	2,5	1	8	14,5	2
Sedlec-Prčice	2	4	4,5	3	4	17,5	3
Moravské Kopanice	3	1	6,5	5	7	22,5	4
Kozákov	4	2	1	2	5	14,0	1
Radnice	5	5,5	8	8	3	29,5	7
Osoblaha	6	7	6,5	4	2	25,5	6
Tachov	7	8	2,5	7	6	30,5	8
Říčany	8	5,5	4,5	6	1	25,0	5

Source: The author's own research, 2004.

The Kozákov, Nové Hrady – Jílovice and Sedlec-Prčice regions make up the first, "best" group because they rank high in most sub-ratings. The following three regions (Moravské Kopanice, Říčany and Osoblaha) can be considered "average" from both the current situation and future prospects points of view, as their rankings oscillate between high and low. Finally, the last group consists of the Radnice a Tachov regions, where the negative perceptions prevail. It is also worth noticing that there are significant differences between the regions: the last region's score is more than double the first one's.

SUMMARY

The model areas were deliberately selected to cover both various parts of the Czech Republic and various socio-economic conditions. So, there is at least a region

- on the Czech-Slovak border, which represents so-called new periphery, i.e. an area at a newly created border,
- on the Czech-Austrian border that is a traditional periphery and whose geographical position changed into a very advantageous after the fall of the Iron Curtain,
- on the Czech/Polish border, traditionally peripheral, but belonging to the problematic regions in the Czech Republic,
- in the so-called inland periphery, determined by the natural conditions and/or by the administrative structure

Geographically peripheral areas are mostly characterised by its relatively unspoilt environment and valuable landscape, which is not infrequently protected by law (on a larger scale through nature reserves, which are often strengthened locally by specific means). They are very attractive for tourist, but it is desirable to promote what is called "soft tourism", which has no negative effects on the countryside.

Just a part of the area is used for farming; the percentage of arable land has been decreasing due to objective factors and government policies. Agricultural production is being modified towards a more rational, smaller-scale system, while non-productive activities are gradually gaining more importance. Growth in the area of grassland and forest is evidence of positive landscape development.

The inhabitants of those peripheral regions, represented by our respondents, value the landscape in their regions. They mainly consider it stabilised, and if they perceive any changes, they think them neutral, and at the same time they believe that tourism is the best way to utilize it.

In our synthetic summary rating, which includes all the selected aspects, the Kozákov, Nové Hrady – Jílovice and Sedlec-Prčice regions rank the highest.

REFERENCES

Anděl, J., Jeřábek, M. and Oršulák, T. (2004) *Vývoj sídelní struktury a obyvatelstva pohraničních okresů Ústeckého kraje,* Ústí n. L., UJEP.

Balej, M., Anděl, J., Jeřábek, M. at al. (2004) *Východní Krušnohoří – geografické hodnocení periferní oblasti*. Ústí n. L., UJEP.

Blažek, J. (1996) Meziregionální rozdíly v České republice v transformačním období, *Geografie – Sborník ČGS*, 101, 265-277.

Friedmann, J. (1973) *A theory of polarized development*, in Friedmann, J. *Urbanization, planning and national development,* London, 41–64.

Hampl, M. at. al. (1996) *Geografická organizace společnosti a transformační procesy v České republice,* Praha, PřF UK.

Hampl, M., Gardavský, V., Kühnl, K. (1987) *Regionální struktura a vývoj systému osídlení ČSR,* UK, Praha.

Havlíček, T., Chromý, P. (2001) Příspěvek k teorii polarizovaného vývoje území se zaměřením na periferní oblasti, *Geografie – Sborník ČGS* 106, 1–11.

Heintel, M. (1998), *Einmal Peripherie – immmer Peripherie? Szenarien regionaler Entwicklung anhand ausgewählter Fallbeispiele*, in Abhandlungen zur Geographie und Regionalforschung, Bd. 5, Wien.

Jančák, V. (2001) Geografický výzkum periferních oblastí na mikroregionální úrovni, *Geografie – Sborník ČGS* 106, 25–35.

Jančák, V., Havlíček, T., Chromý, P., Marada, M. (2001) *Perspektivy vývoje periferních oblastí ČR,* Praha, PřFUK.

Jeřábek, M. ed. (1999) *Geografická analýza pohraničí České republiky*, Praha, SOÚ AV ČR.

Jeřábek, M. ed. (2001) *Reflexe regionálního rozvoje pohraničí České republiky*, Praha, Ústí n. L., SOÚ AV ČR.

Jussila, H., Majoral, R. eds. (2000) *Globalization and marginality in geographical space political, economic and social issues of development at the down of new millenium,* England, Ashgate, Aldershot.

Kastner, Q. (1999) *Osidlování českého pohraničí od května 1945 (na příkladu vybraných obcí Litoměřicka)*, Praha, Ústí n. L., SOÚ AV ČR.

Kubeš, J. ed. (2000) *Problémy stabilizace venkovského osídlení ČR*, České Budějovice, JČU.

Leimgruber, W. (1994) *Marginality and marginal regions: Problems of definition,* in Chang, Y., Chang, D. (eds.), *Proceedings of study group on development issues in marginal regions,* IGU, Taipei.

Marada, M. (2001) Vymezení periferních oblastí Česka a studium jejich znaků pomocí statistické analýzy, *Geografie – Sborník ČGS* 106, 12–24.

Marada, M., Chromý, P. (1999) Contribution to studies on peripheric regions of Czechia. *Acta Facultatis Rerum Naturalium Universitatis Comenianae*, Geographica Supplementum, č. 2/I, Bratislava.

Musil, J. (1988) Nové pohledy na regeneraci našich měst a osídlení, in *Územní plánování a urbanismus,* XV, 67–72.

Schmidt, M. H. (1998) *An integrated systemic approach to marginal regions: from definition to development policie*, in Jussila, Leimgruber, Majoral (eds.) *Perceptions of Marginality: theoretical issues and regional perceptions of marginality in geographical space*, 45–66.

Spišiak, P. (1999), *Výzkum česko-slovenského pomezí ze slovenské strany*, PrFUK, Bratislava.

Stockmann, J.(2003) *Vliv periferní a příhraniční polohy na rozvoj mikroregionu* (příklad Moravské Kopanice), thesis, PřFUK, Praha.

Vaishar, A. (1999a) *Region Kunštátu na Moravě – vnitřní periferie České republiky,* in Mariot, P., Mikulík, O. (eds.), Specifika transformačního procesu v zázemí velkých měst. Regiograph, Brno, 5–14.

Vaishar, A. (1999b) *Marginal regions in Moravia: trasformation of the social and economic system and its consequences*, in Špes, M. (ed.), *Nove možnosti za podeželje. Inštitut za geografijo*, Ljubljana, 102–116.

Zapletalová, J. (1998) *Vranovsko – marginální region středního Podyjí*, in Vomáčková, H. (ed.), Revitalizace problémových regionů, UJEP, Ústí n. L, 189-194.

Zapletalová, J., Strachová, A. (1999) Marginal regions and the state border, *Geographica slovenica* 31, 117–128.

This article was written within the Grant Project of the Ministry of Labour and Social Affairs of the CR 1J 008/04-DP1.

Hrubá Skála Castle and Trosky Monument – Significant of the Bohemian Paradise

Bukovina near Hrubá Skála – Settlement of the J. E. Purkyne University in Ústí n. L.

EUROPA XXI
2006, 15: 185–197

DEMOGRAPHIC AGEING IN EUROPEAN UNION COUNTRIES

ZBIGNIEW DŁUGOSZ and SŁAWOMIR KUREK

Akademia Pedagogiczna
ul. Podchorążych 2, 30-84 Kraków
e-mail: zdlugosz@ap.krakow.pl, sgkurek@ap.krakow.pl

Abstract: The aim of this paper is to describe the level and trends of demographic ageing in European Union after its expansion. The analysis of the state and process of this phenomenon was conducted according to the intra-regional division of countries and was based on data obtained from Eurostat from the years 1993-2003. In the end an attempt was taken to show perspectives in respect to ageing up to 2025.
The dynamics of the process was determined with the help of the dynamic ageing index (Wsd). In this way different population ageing types were obtained which were given the following names: A – older with rapid ageing, B – older with slower ageing, C – older with rejuvenation, D- younger with rapid ageing, E – younger with slower ageing, F – younger with rejuvenation.

Key words: population ageing, European Union, ageing types

INTRODUCTION – AGEING AND ITS CAUSES

At the turn of the 21st century population ageing is the dominant demographic process in Europe. However, current and expected pace of ageing in individual European countries varies considerably. It reflects very diverse demographic settings determined by the different onset of the demographic transition and changes in the weight of ageing determinants.

The age structure of the population is determined by past and current fertility trends as well as trends in mortality, particularly at older ages, and also migration, if it is significant. Population ageing indicated by the increases in the proportions of the elderly in the total population thus can be the consequence either of a slow-down in growth of younger population or an acceleration of growth of the older one. Relative slow-down in the numerical growth of younger population is usually the result of decreases in fertility levels and birth rates; this form of ageing is known as "ageing at the bottom of the age pyramid". An acceleration of growth of the elderly is generally a consequence of more rapid decline in mortality rates in older than younger ages; such ageing is called "ageing at the top of the age pyramid". The third component of population change that is likely to influence the level and speed of ageing is migration. Positive net migration slows down the process of ageing as migrants are mostly younger people of working age. However, if immigration has a form of a migration wave limited to a certain period of time, it can speed up ageing after some time when the immigrants enter old age (Grundy 1996; Avramov and Maskova 2003; Ageing Population 2004; Kinsella, Philips 2005).

DEMOGRAPHIC TRANSITION

Generally speaking, population ageing is an inevitable consequence of the demographic transition from relatively high fertility to the low fertility which all European countries have now experienced (Mirkin, Weiberger 2001; Frątczak 2002; Reher 2004). Differences in the timing of this transition, largely account for geographical differences in the proportions of the elderly (Długosz 1996; Kurek 1998). In the 1960s, a second demographic transition, characterized by fertility decline below replacement level (Van de Kaa 1987; Coleman 2002), started in northern and western European countries. At the same time mortality at older ages started gradually to decline more rapidly. Both influences caused intensive population ageing. However, in the former socialist countries total fertility rate fluctuated around replacement level (2.1 children per woman) during the l970s and 1980s while middle and old age mortality stagnated or worsened. Both factors were keeping the proportion of the elderly at relatively low levels. Whilst a substantial sharp decline in fertility occurred in many of them in the 1990s, its influence has not markedly manifested itself yet in the relations of the age structure. Moreover, mortality rates in older ages have continued to be unfavourable in many of the transitional countries. Recently the countries in the south of Europe have started to age at the most intensive pace. This is a consequence of a deep and rapid decline of fertility levels to the lowest ones in Europe and increasing longevity since the 1970s.

The ageing of a particular population or the whole region can in reality be influenced by temporal fluctuations of all main determinants of the age structure (fertility, mortality and migration). These fluctuations form irregularities in the age structure and these, by their transition over defined limits of younger and older age, influence the ageing process and its speed and the composition of the elderly. As ageing is a continuous process, we can observe that those regions with lower proportions of elderly people now are ageing faster than the countries with already "aged" populations (Grundy 1996).

EFFECT OF WARS

External factors that substantially affected the courses of fertility and mortality in Europe or its parts, and thus the ageing of their population in the past fifty years, include in particular both world wars (war losses, lower natality levels especially during World War I). The increase of fertility after the World War II – the baby boom – caused a temporary increase in the proportion of children in the population and thus a slow-down of ageing in many of European countries in the 1950s. The second slow-down was registered in the first half of the 1980s and concerned mainly the countries of western, central and eastern Europe. Numerically small cohorts born during World War I, further weakened by deaths during military service in the World War II, shifted over the age limit of 65 in these years. As a result, the share of elderly in many countries even temporary decreased. Owing to the long-term character of population development, some of these phenomena will have an impact on the age structures also in the future. While the effect of small generations born during the World War I has been gradually slipping out, post-war baby boomers will decisively affect the future course of the ageing process. Their shift from the working age category into the elderly will strongly influence the development of the total numbers and the relative weight of the elderly as well as the age composition of the elderly in future decades (Avramov and Maskova 2003).

IMPLICATIONS OF AGEING

Population ageing leads to social-economic consequences such as the rising cost of public pensions and increased demand for health and social care (Jackson 2000; Golini 2001; Bongaarts 2004). Higher dependency ratio affects the budget position of the government and the level of public savings. It increases consumption relative to output, and lowers the national saving rate, thereby slowing down capital formation. Furthermore, the decline in the share of population in the working age implies a fall in labour supply (Kence, Sayan 2001). According to Walker (1999) the main challenges for social and economic policy concerning population ageing are as follows: the maintenance of economic security in old age, preserving intergenerational solidarity, combating the social exclusion created by age discrimination, providing long-term care in the context of changes in family and residence patterns, and enabling older people to participate in society as full citizens. However, Cheal (2000) argues that shifting more resources toward older people will exacerbate existing intergenerational inequities, thus creating new divisions between generations and possibly contributing to a breakdown in social solidarity.

AIM OF RESEARCH

This article concentrates on the demographic aspects of current population ageing and its future trends in European Union regions. It focuses on describing similarities and differences between regions with respect to the level of ageing and dynamics of the process. These were analysed on the basis of regional units of particular countries (with the

exception of Cyprus, Denmark, Estonia, Lithuania, Luxembourg, Latvia, Malta and Slovenia for all the analysed years, and Ireland, the Czech Republic, and Slovakia for 1993) divided into units of similar size. For some countries (among others Lithuania, Latvia and Estonia), this division was necessitated by a lack of comparative data from the period before the accession to the EU. Data obtained from Eurostat for the years 1993-2003 formed the basis of the analysis. This period was also selected to allow the pace of ageing in two consecutive, equal periods – 1993-1998 and 1998-2003 – to be compared. For these ranges, the ageing indexes were calculated, as well as the pace of ageing index and changes to it. To present the data in still more objective way, the ranges used on the cartograms were based on deviations from the average. In the end an attempt was taken to show perspectives in respect to ageing up to 2025.

LEVEL OF AGEING

We began by conducting spatial analysis of the disparities in population ageing levels according to the ageing index (ratio of the population group aged over 65 to one hundred population aged 0-14 years).

The spatial layout of the ageing index in 2003 (Figure 1) shows that the highest proportion of this group was generally found in: regions of central Sweden, north-western Spain; north-central Italy; central southern Greece and eastern regions of Germany. In particular, the highest values occurred in Liguria in Italy and Principado de Asturias in Spain (over 200) as well as in Toscana, Emilia-Romagna, Umbria, Fiuli-Venezia Giulia, Piemonte, Marche, Molise and Abruzzo in Italy; Castilla y León, Galicia, Aragón, Cantabria and Pais Vasco in Spain; Sachsen, Sachsen-Anhalt and Thüringen in Germany; Alentejo in Portugal; Limousin in France and Peloponnisos, Ipeiros and Voreio Aigaio in Greece (with the values between 150 and 200). These are regions which from one side are characterised by low natural increase and from the other side quite high net migration loss which, as a consequence, affects the shares of children aged 0-14 and economically active population. Therefore, the proportion of the elderly is the regions the highest. In turn, the lowest values of the ageing index occurred in regions of Ireland, Slovakia and the Netherlands, in Malta, in most provinces of Poland and in regions of north-eastern France (among others Haute Normandie, Picardie, Ile de France, Nord Pas-de-Calais) as well as in northern and southern Finland (the index value below 80).

Such picture of demographic ageing in 2003 results from the past trends of population growth components in particular countries, also diversified regionally. To determine the dynamics of the ageing process

The demographic ageing index, calculated as a relation of population aged 65 and over to the population aged 0-14 (Figures 4-6), was different in the analysed years. In 1993, the highest values of the coefficient were recorded in regions of central Sweden, central northern Italy, northern Spain, separate regions of France and Greece, and the German cities Hamburg and Brema. In 1998, this group was joined by other regions of Germany, Spain and Greece, while in 2003 all the eastern regions of Germany (with the exception of Berlin) were in the group of regions with the highest coefficient, with a simultaneous relative decrease in regions of Sweden. This shows that in these regions, not only

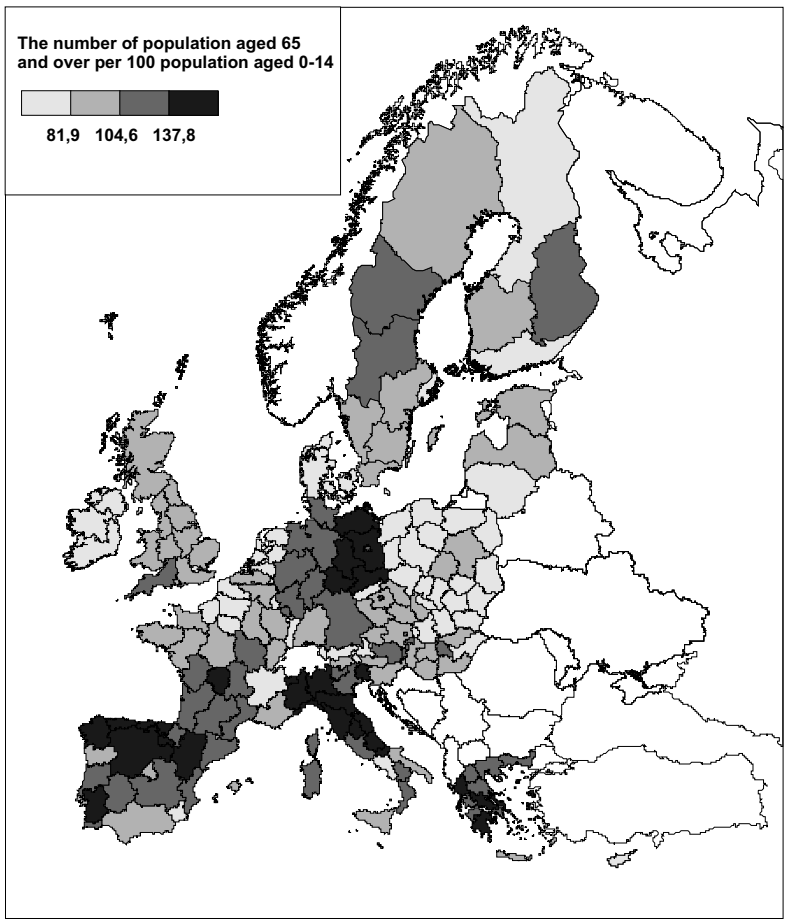


Figure 1. The ageing index in 2003

is the percentage of elderly people high, but the proportion of young people is relatively the lowest. Moreover, it should be remembered that in the period under study, the lower limit of the highest coefficient increased from 106.8 to 137.8.

DYNAMICS OF AGEING

This situation in demographic ageing in 2003 resulted from the past trends of population growth components in particular countries, also diversified regionally. In order to determine the pace of ageing the W_{sd} coefficient was used (Długosz 1998), which can be expressed by the formula:

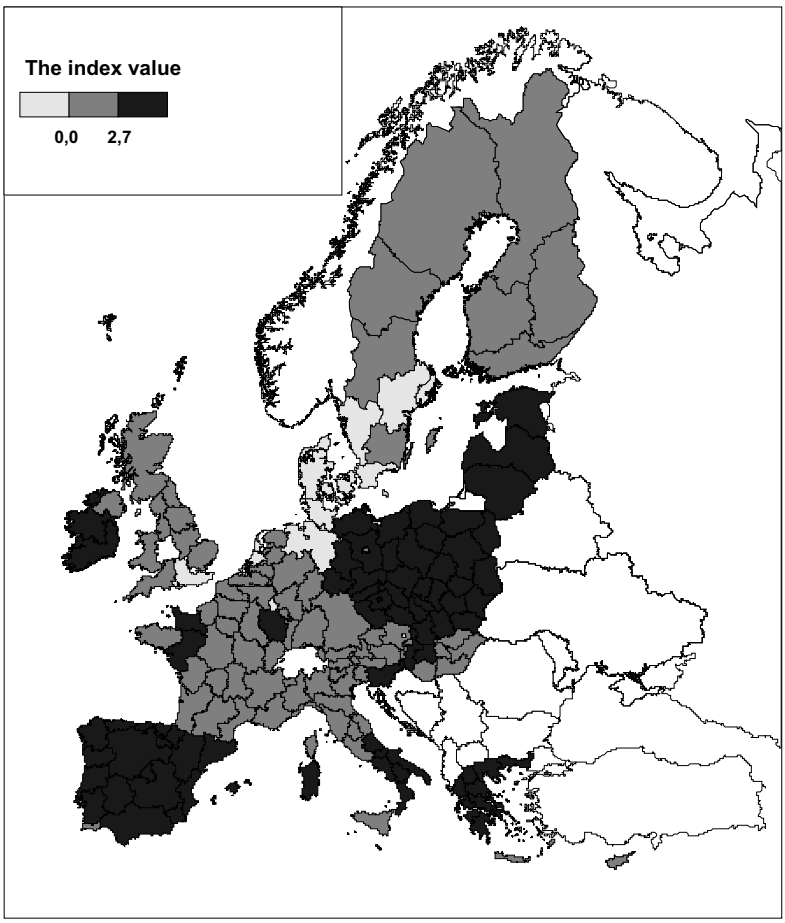


Figure 2. The dynamic ageing index (W_{sd}) in the years 1993-1998

$$W_{sd} = [U_{(0\text{-}14)t} - U_{(0\text{-}14)t+n}] + U_{(\geq 65)t+n} - U_{(\geq 65)t}]$$

where:

W_{sd} - dynamic ageing index
$U_{(0\text{-}14)t}$ - proportion of population aged 0-14 at the start of the period studied
$U_{(0\text{-}14)t+n}$ - proportion of population aged 0-14 at the end of the period studied
$U_{(>65)t+n}$ - proportion of population aged 65 or over at the end of the period studied
$U_{(>65)t}$ - proportion of population aged 65 or over at the start of the period studied.

On the basis of this coefficient, which takes into account both the proportion of young people and that of elderly people, in the years 1993-1998 (Figure 2) the most rapid ageing (over 2.7) was observed in: the Baltic States; Ireland; Slovenia; all regions of Poland;

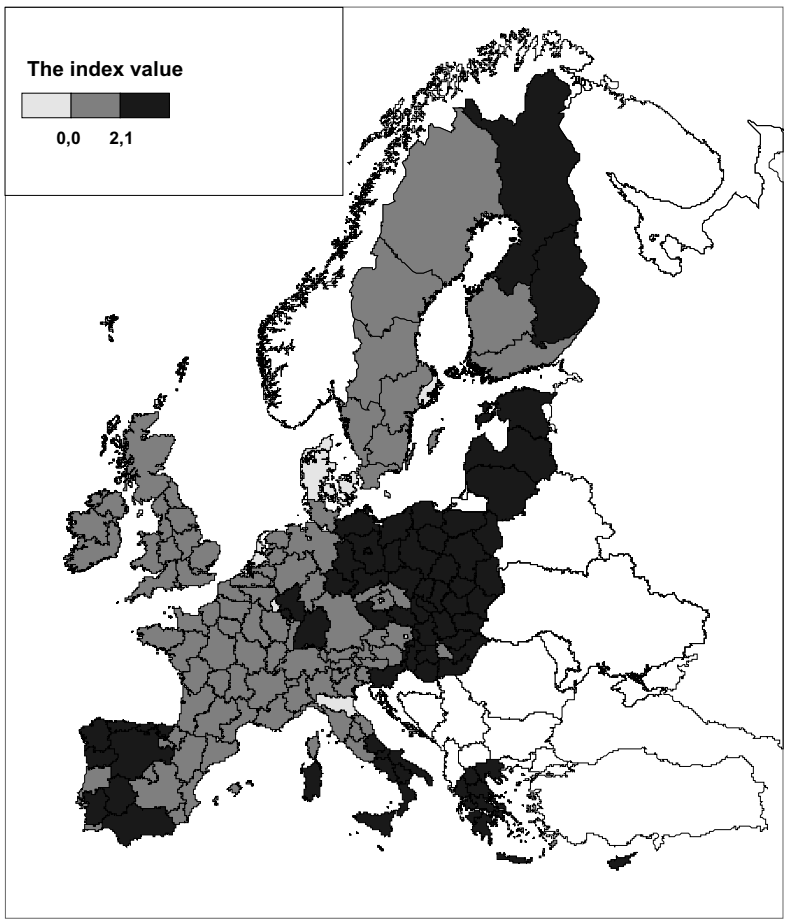


Figure 3. The dynamic ageing index (W_{sd}) in the years 1998-2003

eastern Germany; the Czech Republic; Slovakia; Portugal (with the exception of the Algarve); Spain; Greece; southern Italy including Sardinia; and some regions of France. The highest coefficient occurred in Mecklenburg-Vorpommern, Brandenburg and Thüringen in Germany and Principad Asturia, Galcia, Pais Vasco, Cantabria and Castilla y León in Spain. A trends towards population rejuvenation occurred in urban regions like Vienna, Stockholm, Hamburg, Brussels or Brema as well as Denmark, some regions of southern Sweden and England, and in Schleswig-Holstein and Niedersachsen in Germany.

In the years 1998-2003 (Figure 3) a high tendency towards ageing (over 2.1) was maintained in: the Baltic States; Poland; Greece; Slovakia; Slovenia; Cyprus; eastern regions of Germany and Baden-Württemberg, Saarland and Rheinland-Pfalz; southern Italy and Sicily; most regions of Hungary; the southern Czech Republic; northern central regions of Finland; north-western and south-western Spain; and Portugal. Particularly, the high-

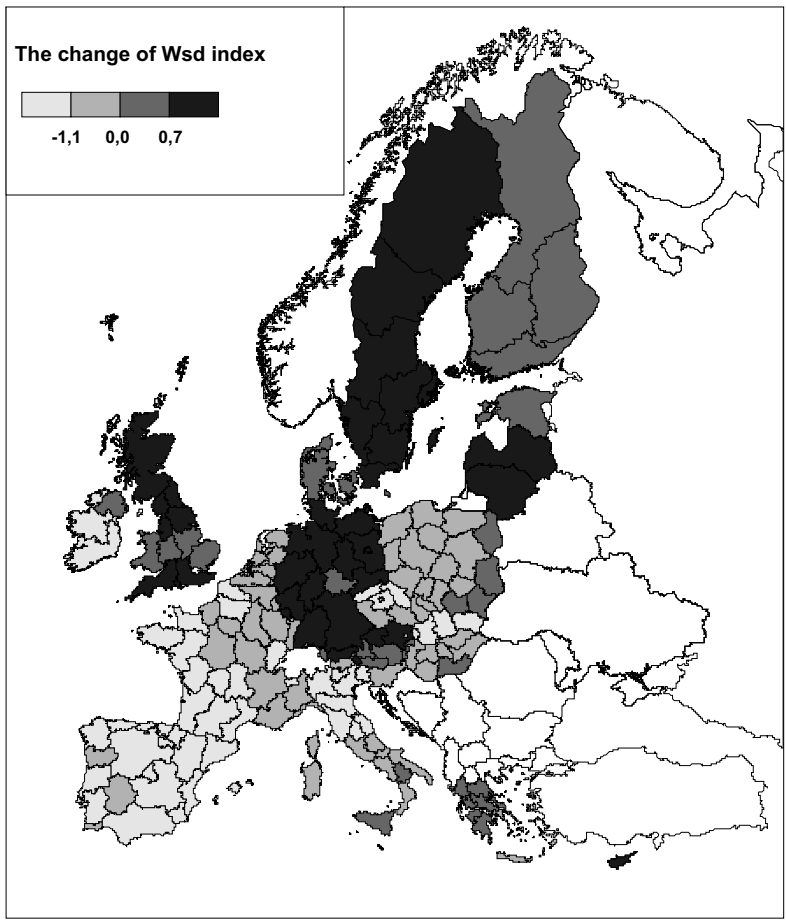


Figure 4. The pace of dynamic ageing index (W_{sd}) in the periods 1993-1998 and 1998-2003

est dynamics (over 5) was recorded in regions of eastern Germany (Mecklenburg-Vorpommern, Brandenburg, Sachsen-Anhalt, Thüringen and Sachsen), between 4 and 5 – in Dytiki Makedonia and Ipeiros in Greece and areas of central-eastern Europe: Estonia, Lithuania, Latvia and Opolskie province in Poland. However, there was still a trend towards rejuvenation in city regions of Vienna, Brussels and Stockholm as well as in regions of Luxembourg, Denmark and Emilia-Romagna in Italy.

The level of changes in these periods varied, as shown in Figure 4. The most rapid increase in population ageing was observed in regions of Sweden, Germany, Scotland, northern and southern England, northern Austria, Latvia and Lithuania. In particular, the highest pace of ageing occurred in regions of eastern Germany (Mecklenburg-Vorpommern, Brandenburg, Sachsen-Anhalt, Thüringen and Sachsen). On the other hand,

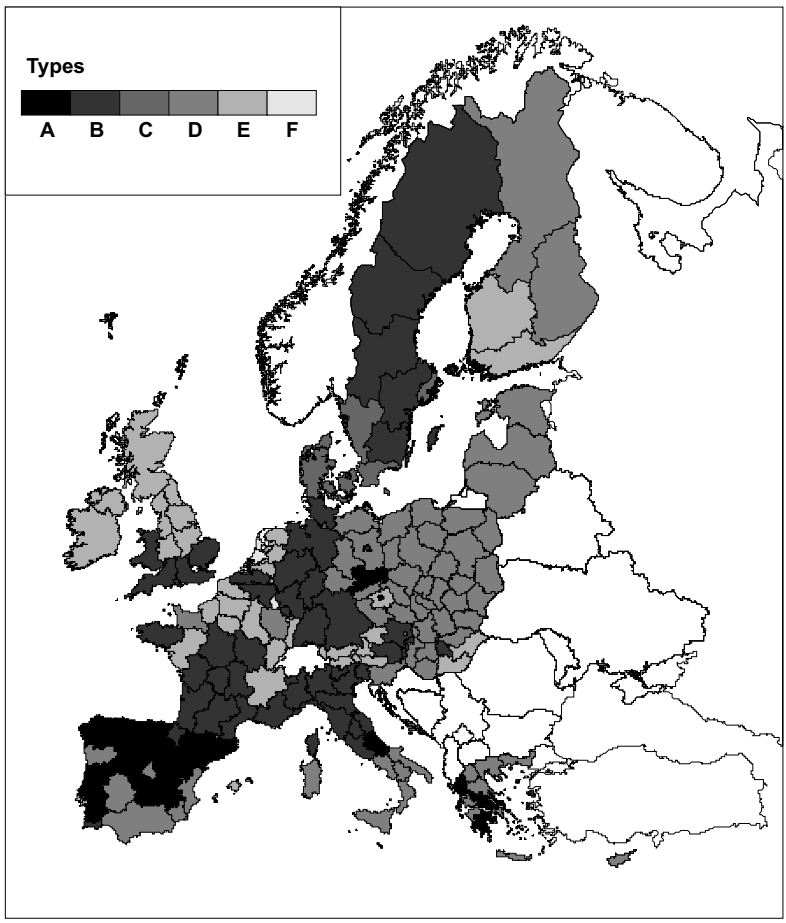


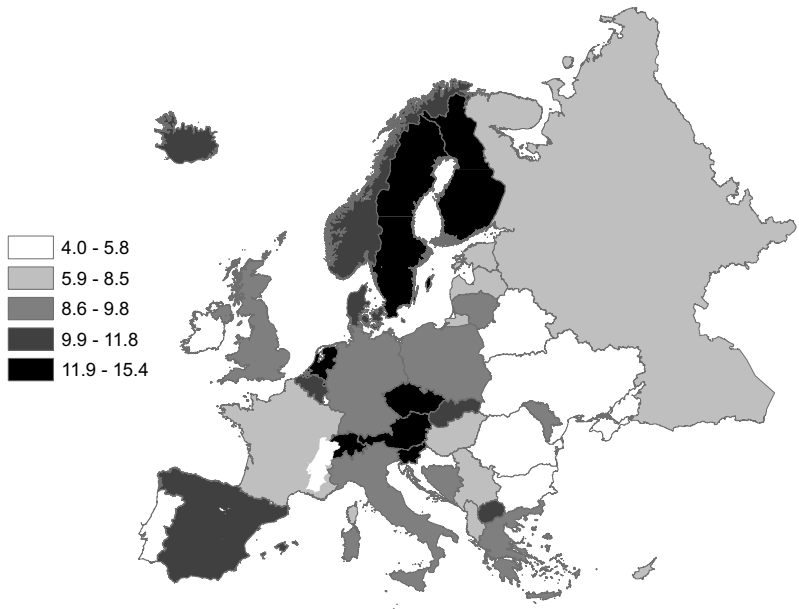
Figure 5. The types of population ageing

in relative terms, regions of Spain, western France, northern Italy, the Czech Republic, Slovakia and Ireland were generally characterised by the greatest decrease in population ageing.

TYPOLOGY OF AGEING

In order to summarise the results, assess the situation still more objectively and get a global picture of population ageing, a typological matrix was used. This was based on the level of population ageing in 1993 and the pace of changes in 1993-2003, according to the W_{sd} coefficient.

a)



b)

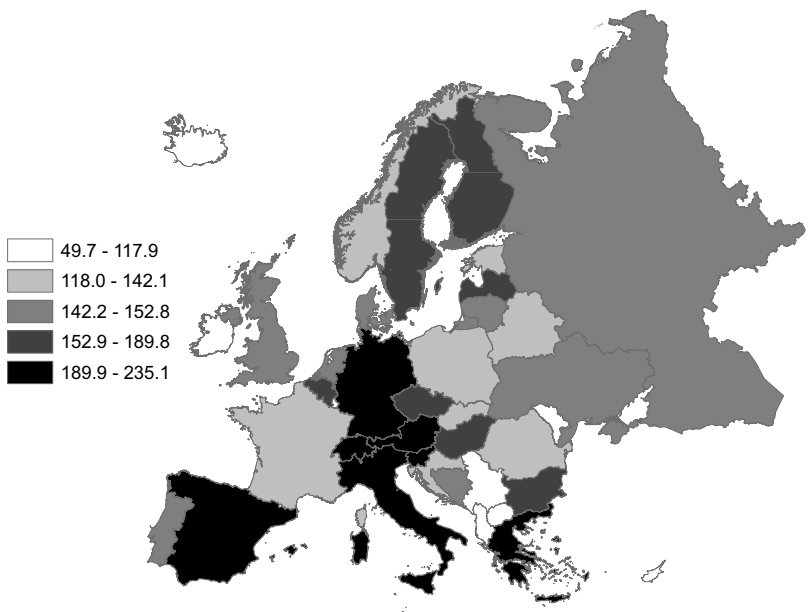


Figure 6. The perspectives of population ageing
a) The dynamics of population ageing according to W_{sd} coefficient in the years 2003-2025
b) The level of ageing according to ageing index in 2025

Tab. 1 Typological matrix of ageing

TYPES	$W_{SD} > +\bar{x}$	$W_{SD} \leq +\bar{x}$	$W_{SD} < 0$
$I_{SD} > \bar{x}$	A	B	C
$I_{SD} \leq \bar{x}$	D	E	F

$\bar{x}$ – coefficient average; $+\bar{x}$ – coefficient average for positive values
I_{SD} – ageing index; W_{SD} – dynamic ageing index

This allowed us to obtain different population ageing types, which were given the following names:

A – older with rapid ageing,
B – older with slower ageing,
C – older with rejuvenation,
D – younger with rapid ageing,
E – younger with slower ageing,
F – younger with rejuvenation

The spatial distribution of the types (Figure 5) showed that till 2003 the most elderly populations with the most rapid pace of ageing (type A) were those in regions of northern Spain, Abruzzo and Molise in Italy, Alentejo and central Portugal, Sachsen in Germany, and Attiki, Ipeiros and Peloponnisos in Greece. Other very old areas with a somewhat slower ageing process (type B) were regions of Belgium, central southern France, all of the western areas of Germany, most of Sweden, southern England, Wales, eastern Austria, northern and central Italy and the Budapest region. Type C with the tendency to rejuvenation was represented by urban regions of Vienna, Brussels, Hamburg and Stockholm as well as Denmark and southern and southwestern Sweden. The least numerous type F was composed by two areas: Luxembourg as a whole and western Netherlands. The remaining regions were arranged to types D and E. The latter was mainly represented by all provinces of Poland, regions of Slovakia, western Hungary, remaining lands of eastern Germany, northern Greece, southern Italy and Spain as well as Estonia, Lithuania and Latvia.

PERSPECTIVES

Conducting comparable analysis of ageing perspectives with reference to presented regional division is not possible for two reasons. Firstly the Eurostat projections for 2025 is presented in different regional division NUTS 95, especially for Finland, Great Britain and Portugal; secondly there is no data for new members of EU. Therefore, to show perspectives, we moved up to national level, extending the study area with countries being outside European Union structures. With the use of W_{SD} coefficient, the analysed data shows that the relatively most rapid ageing (with the continent average of 6) within next 20 years (Figure 6a) will occur in Austria (13.4), Finland (12.5), Slovenia and Sweden (12.4) as well as the Netherlands and Czech Republic(12.2) for EU members while outside this group in Switzerland (15.4). In turn, the lowest pace of ageing up to 202 will be characterised by Ireland and Luxemburg (5.3) and Portugal (5.8) in EU, while outside EU in Croatia (4.9), Romania (5.0), Ukraine (5.4) and Belarus (5.8). According to these projec-

tions, in 2025 an average level of demographic ageing index in Europe will increase up to the value 146 and among the demographically oldest countries (Figure 6b) will be Italy (235), Spain (213), Slovenia (212), Austria (208) Germany (202) and Greece (201), and beyond EU – Switzerland (218), while to the relatively youngest group will belong – apart from Albania, Moldova and Iceland – also Ireland (78) and Cyprus (98).

CONCLUSIONS

The analysis showed that according to the level of demographic ageing there exist division into regions with strongly advanced ageing comprising countries of western Europe and into areas relatively younger in central-eastern Europe with the exceptions of Ireland and Denmark in the first group and eastern Germany in the second one. However, the process of population ageing is increasing spatially including such countries as Estonia, Latvia and Lithuania as well as Czech Republic, so the areas with long-time highest fertility decline. In recent years unfavourable demographic population structure in these countries is enhanced by international emigration. Further increase in the proportion of the elderly will be also associated with post-war elevation of fertility – baby boomers, because they move to older ages.

As it seems, taking into account the projections up to 2025, the phenomena of population ageing will be intensified in regions of western Europe, while in some areas its dynamics will decelerate. It should be expected that in new countries of EU, the process of ageing will depend on the pace of lengthening of life expectancy, which in western Europe is becoming to slow-down, because of achieving such a high level. In spatial layouts, however, the differences between particular regions will mainly result from their migration character, while, as it seems, the trends in fertility will remain the same.

REFERENCES

Ageing Population (2004) Regions: Statistical Yearbook, Eurostat, European Communities.

Avramov, D., Maskova, M. (2003) Active ageing in Europe, *Population Studies* 41, 1, Council of Europe.

Bongaarts, J., (2004) Population Aging and the Rising Cost of Public Pensions, *Population and Development Review* 30 1, 1–24.

Cheal, D. (2000) *Canadian Public Policy – Analyse de Politiques*, XXVI, Supplement, 109–122.

Coleman, D. A. (2002) Populations of the Industrial World – A Convergent Demographic Community? *International Journal of Population Geography* 8, 319–344.

Długosz, Z. (1996) Zróżnicowanie struktury wieku ludności na świecie a metody jej klasyfikacji, [The Differentiation of Population Age Structure in the World and Methods of its Classification], *Przegląd Geograficzny* 68, z. 1–2, 151–165.

Długosz, Z. (1998) Próba określenia zmian starości demograficznej Polski w ujęciu przestrzennym [An Attempt to Determination of Spatial Changes of Demographic Ageing in Poland], *Wiadomości Statystyczne* GUS – PTS, R. XLIII, z. 3, Warszawa.

Frątczak, E. (2002) Proces starzenia się ludności Polski, *Studia Demograficzne* 2, 142, 3-28.

Golini, A. (2001) Demographic trends and population policies, *Futures* 33, p. 27–41.

Grundy, E. (1996) Population Ageing in Europe, in Coleman D. (ed.), *Europe's Population in the 1990s*, Oxford University Press, Oxford, 267–295.

Jackson, S., Age concern? The Geography of Greying Europe (2000) *Geography* 85, 4, 366–369.

Kence, T., Sayan, S. (2001) Demographic shock transmission from large to small countries. An overlapping generations CGE analysis, *Journal of Policy Modeling* 23, 677–702.

Kinsella, K., Phillips, D. R. (2005) Global Aging: The Challenge of Success, *Population Bulletin* 60, 1, 3–40.

Kurek, S. (1998) Zróżnicowanie przestrzenne procesu starzenia się ludności Europy w latach 1960–96 w świetle wybranych mierników [Spatial Differentiation of Population Ageing Process in Europe in the Years 1960-96 in Light of Selected Measures], *Czasopismo Geograficzne* LXIX, z. 3–4.

Mirkin, B., Weinberger, M. B. (2001) The Demography of Population Ageing in Population Ageing and Living Arrangements of Older Persons: Critical Issues and Policy Responses, *Population Bulletin of the United Nations*, Special Issue Nos. 42/43, p. 41+58.

Reher, D. S. (2004) The Demographic Transition Revisited as a Global Process, *Population, Space and Place* 10, 19–41.

Van de Kaa, D. J. (1987) Europe's Second Demographic Transition, *Population Bulletin* 42, 1, March, Population Reference Bureau: Washington, D.C.

Walker, A. (1999) Ageing in Europe – challenges and consequences, *Zeitschrift fur Gerontologie und Geriatrie* 32, 390–397.

EUROPA XXI
2006, 15: 199–211

EVALUATION OF DEMOGRAPHIC POTENTIAL IN SELECTED PERIPHERAL REGIONS OF SLOVENIA

MONIKA BENKOVIČ-KRAŠOVEC

Faculty of Arts, University of Ljubljana
Aščerčeva 2, 1000 Ljubljana, SI – Slovenia
e-mail: monika.benkovic@siol.net

Abstract: Considering its small territorial and population size, Slovenia nevertheless has a considerable geographic, economic and social variety. Not surprisingly, there are significant regional disparities. A research study analysed statistical data for the chosen indicators in the periods 1961-1991 and 1991-2002 and evaluated the demographic potential in the four demographically endangered and economically less-developed areas. The study has also examined in detail eight settlements at selected areas. A special emphasis was placed on the study of households as basic socio-economic units, on which future development of settlements is based.

Key words: Slovenia, depopulation areas, demographic potential, typology of households

INTRODUCTION

There is unequal distribution of population in Slovenia, as a result of different natural and socio-economic conditions, in particular the intensity of different development processes (industrialization, urbanization, deagrarization, intellectualization and globalization) that provoked unequal regional development. There are areas with greater density of population and economy, areas which have been left behind by economic development and have therefore suffered from emigration, and transition areas. Areas with normal socio-economic and demographic structure are valleys, flatlands and their fringes, as well as all fringe areas contiguous to central locations in the mountainous Alpine, pre-Alpine and Karst regions and the Tertiary hilly areas. These areas represent a third of the Slov-

ene territory and host 75 % of the population. Depopulation areas are demographically at risk, without any significant centres that would ensure basic services, with a poorly developed infrastructure and a low standard of living. They cover the mountainous and hilly areas and plateaus in the Alpine and Karst zones and most border areas. Although they represent as much as half of the territory of Slovenia, only less than a fifth of the population lives there (Ravbar 2000). There has been an increase of the scope of areas where population size has been increasing and decreasing. The scope of areas where the population size has been stagnating, has been decreasing, which means that the differences between Slovenian regions have amplified (Perko 1998).

To acquire good knowledge of a region, one must necessarily study and evaluate the basic components of the population, as they promote and direct almost the entire regional development (Natek 1996). The current and future outlook and function of individual areas depend on the number and quality, in particular the education and age structure of the population.

The objective of this paper is to evaluate the demographic potential of the four peripheral, mostly borderline and hilly Slovene regions which are more difficult to access. On the basis of natural geographic and in particular socio-geographic premises, the study has included the following areas: Brkini, Goričko, Haloze and Idrijsko hribovje. They cover 1,207 km^2 (6 % of surface area of Slovenia). In 2002, these areas were populated by 37,650 inhabitants, which amounted to almost 2 % of the Slovene population. In terms of general economic development, the selected areas have begun to lag behind the industrial development and the development of non-agricultural activities (Benkovič 2003).

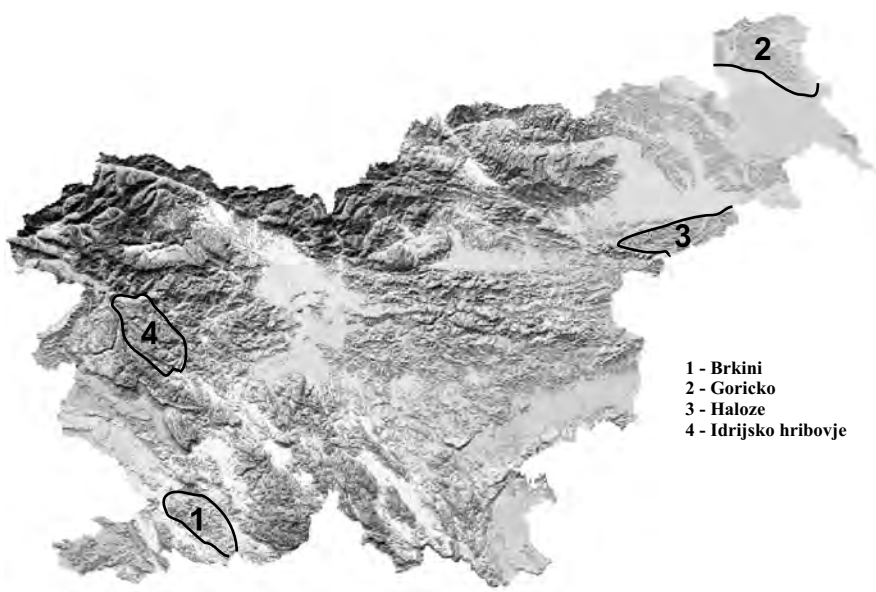


Figure 1. Selected areas
Source: Benkovič 2003.

METHODOLOGY AND DATA

The first part of the research is based on an analysis of the statistical data for selected indicators (population size trends, age and education structure of the population). 236 settlements were included in the study, which covered the period between 1961 and 2002, and was divided into two subperiods 1961–1991 and 1991–2002. For each indicator, value was determined by settlement and the median value for the region. In order to enhance the objectivity of the analysis and place it within a larger perspective, the results were compared with the Slovene average.

The second part of the research is based on the survey-acquired data in eight settlements, selected at random; two in Brkini (Ostrožno Brdo, Tatre), Goričko (Ocinje, Krplivnik), Haloze (Grdina, Pohorje) and Idrijsko hribovje (Jagršče, Šentviška Gora). In all, 217 households were surveyed; in each settlement the share of performed surveys was greater than 95 %. Focus was placed on the study of households as the basic socio-economic units, on which the future development of settlements is based. On the basis of the collected data, the households were divided into seven types (Klemenčič 1993) according to the age structure of their members:

Type 1: aged households (all members are older than 70);
Type 2: households with members between 50 and 70 years of age;
Type 3: households with middle-age (35-50 years) and older generation (above 65);
Type 4: households with members between 25 and 60 years of age;
Type 5: three-generation households (all age groups);
Type 6: households with young and middle-age generation (all members under 50);
Type 7: young households (all members younger than 35).

The above types of households were subsequently grouped into three groups: viable, potentially viable and non-viable households. Type-5, -6 and -7 households were classified as viable households, on which the future development of settlements is based, whilst household types 1, 2 and 3 were classified as having little importance or unimportant for the future development of the settlement and were designated as non-viable. Type 4 households were classifieds as potentially viable (Benkovič 2003).

RESULTS OF RESEARCH

TRENDS IN THE NUMBER OF INHABITANTS

As evident from the index of population growth (Table 1) in the periods 1961–1991 and 1991–2002, the selected areas have been classified as depopulation areas. Whilst the population size in Slovenia has increased by 24 % between 1961 and 1991, the number of inhabitants in the selected areas has decreased by a quarter or more due to emigration (Brkini 34 %, Goričko 25 %, Haloze 30 % and Idrijsko hribovje 37 %). In Brkini and Goričko the number of inhabitants has fallen in 98 % of settlements, in Haloze 87 % and Idrijsko hribovje 96 % of settlements, in certain settlements by more than a half. The reason for emigration was poor living and working conditions, in particular lack of jobs and poor service and social infrastructure. Stagnation and a slight increase of the number of inhabitants in the above-mentioned period were only noticeable in settlements with

easier access and central position. This is most evident in Haloze, where more favourable demographic trends were clearly displayed in the valleys with larger watercourses (Figure 2). In Goričko, areas with lesser incidence of population decrease centred at the border with Austria, in the hinterland of Murska Sobota and along important roads. The greater settlement stability along the Austrian border was enhanced by shorter periods of seasonal work of the border population or by daily work trips across the border (Olas and Kert 1993). The opposite was the case for the closed Hungarian border, where the large

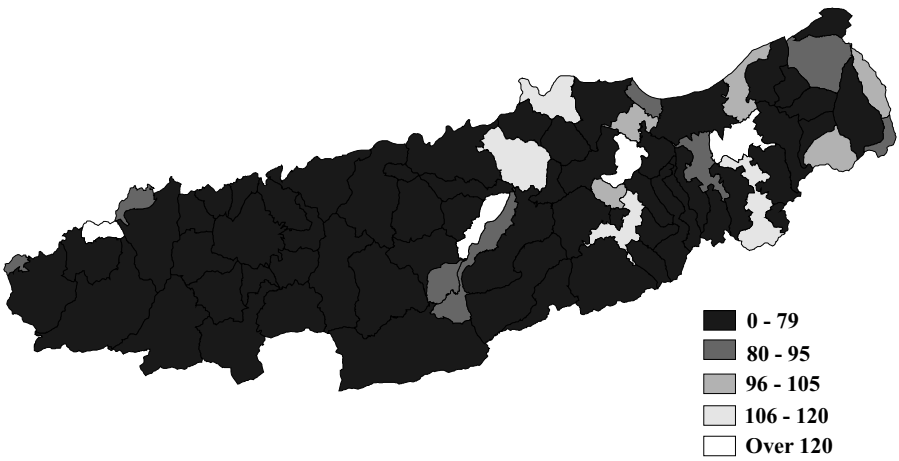


Figure 2. Index of population growth in Haloze, 1961-1991
Source: Census 1961 and 1991.

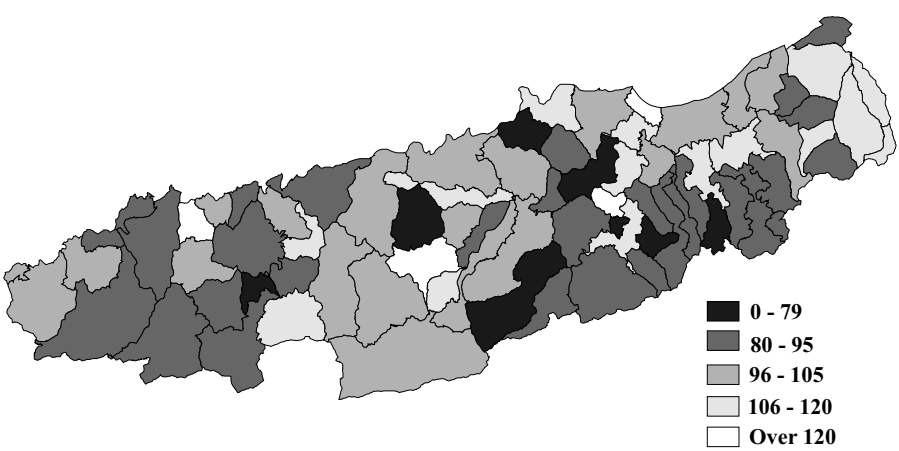


Figure 3. Index of population growth in Haloze, 1991-2002
Source: Census 1991 and 2002.

part of the border area has become an explicit depopulation area. In Idrijsko hribovje, three settlements along the main road between Idrija and Tolmin had a lower fall or a slight growth of the number of inhabitants. In Brkini, certain settlements on the fringes of Brkini in the hinterland of Ilirska Bistrica displayed stagnation and a smaller decrease of the population size. As a result, these areas have a more favourable age, education and employment structure of the population.

The largest decrease of population size in the selected areas was evidenced in the 1960's and 1970's, whilst in the 1980's the negative population trends stabilized, mostly due to improved road connections between settlements within and the employment centres outside these areas. Better road connections enabled daily migrations to work and thus decreased the wish or the need for emigration. A decrease of the population size in the period between 1991 and 2002 continued (Brkini 8 %, Goričko 14 %, Haloze 10 % and Idrijsko hribovje 5 %), although no clear areas of decrease and growth of population were defined (Figure 3). The current decrease of the number of inhabitants is no longer the result of emigration, but of a negative natural increase. The latter is the result of long-standing emigration of the young, which resulted in the ageing of the population, declined birth-rate and increased mortality. It is encouraging to note that the number of inhabitants is not decreasing as fast and in such a great percentage of settlements, as a result of improved living conditions and availability of motor vehicles. A clean and peaceful environment is gaining in importance and it has also had an impact on the decision of the inhabitants to live in rather more remote areas. Settlements which allow easy daily communication with the regional or a larger local centre are more attractive. Stagnation or growth of the number of inhabitants has been recorded in such settlements, which is evidenced by new construction or renovation of older buildings.

Although there has been a smaller decrease of the population size, the age structure of the inhabitants from the point of view of future development is not favourable. Due to a large share of the elderly, further depopulation is inevitable in all areas.

AGE STRUCTURE OF THE POPULATION

Between 1961 and 2002, in all the selected areas a powerful process of the population ageing was under way. There was a change in the ratio of the young and the elderly to the benefit of the latter or higher ageing indexes (Table 1). This change in the age structure is in compliance with the social development and may be noticed throughout the country, although it was more intense in the selected areas due to severe depopulation. In 2002 the ageing indexes in the selected areas were above the Slovene average. More important is the fact that in all areas, including Slovenia as a whole, the ageing index has exceeded the demographic threshold. Its value of 72 signifies the upper limit of ensuring reproduction of the population (Kovačič 2000). Ageing indexes (Brkini 166, Goričko 134, Haloze 102 and Idrijsko hribovje 118) show elderly population which has begun to die away. Without immigration which would make the population younger, many settlements will become vacant. A sufficient share of the young is a decisive factor of further existence and development of settlements, whilst the greater share of the elderly indicates the waning of the economic potential and greater social dependency of the area. The population ageing

means a decrease of the number of people able to work, because population with a large share of the elderly has no demographic reserve to fill in the lack in the actively working population. The consequences of the population ageing are visible mostly in the deterioration of the farm and residential buildings, abandoning of cultivation and accelerated overgrowing of the cultural landscape, problems in health care provision and food supply.

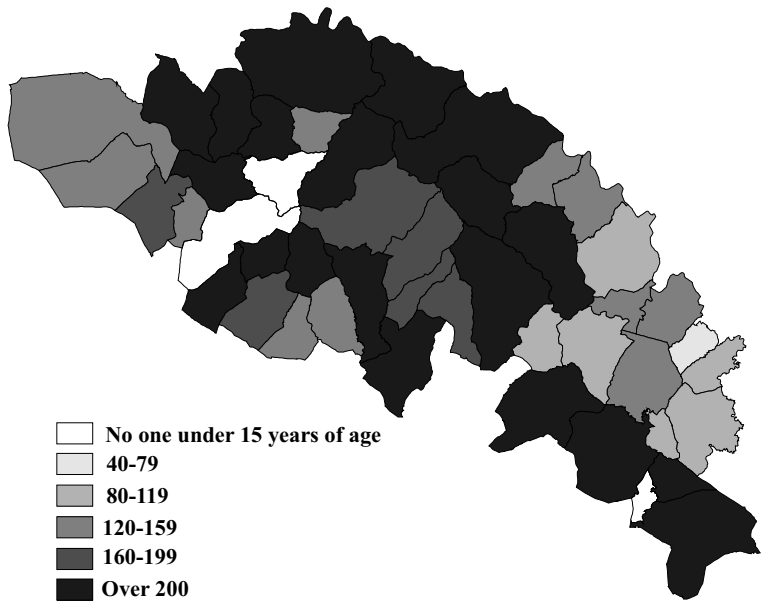


Figure 4. Ageing index in Brkini, 2002
Source: Census 2002.

EDUCATION AND EMPLOYMENT STRUCTURE OF THE POPULATION

In all the selected areas, as well as in Slovenia as a whole, the education structure of the population improved in the period after the war (Table 1). The share of persons with incomplete and complete basic education decreased and the share of persons with upper secondary and higher education increased. In comparison to the Slovene average, in 2002 the selected areas showed a marked upsurge in the share of persons with incomplete and complete basic education and a down surge in the share of persons with upper secondary, short-term tertiary, higher undergraduate and postgraduate education. Even though in the period 1991–2002, the share of persons with completed higher education doubled, it is still strongly under the national average. One should look for reasons in the larger share of agrarian and elderly population and in the regional policy, which created jobs only for unqualified and semi-qualified labour in the less-developed areas. The share of the

employed without professional qualifications (unqualified and semi-qualified workers) in the selected areas is too high. The crisis of faster development is in essence a staffing crisis as enterprises with low-qualified workforce cannot carry the development. In 2002, the unqualified and semi-qualified workers in general represented approximately two thirds of the employed, and were followed by the workers with a secondary professional education level, whilst workers with a higher vocational and high professional education were few in number. The level of professional education of the employed is partly the result of a poor education structure of the population and partly the availability of jobs which do not require high qualifications. As there is an overall lack of jobs for the high education levels, these profiles continue to emigrate or do not return home after completing education or work outside their residential area. Their knowledge is not used for the development and the benefit of the home region. According to Kraigher (2001), the brain drain has stalled the development of the less-developed areas. Insofar as it is not possible to stop this drain, the state cannot decrease the differences in economic development of these areas by applying measures. Knowledge is an important, even decisive, factor of the general and economic development. The present education structure of the population does not meet the needs and does not have the necessary characteristics for an essential shift in quality and accelerated development also in the future.

Employment structure largely corresponds to the poor education structure. In the selected areas, the share of the employed in primary and secondary sector was above and the share of the employed in services below the national average (Table 1). Agriculture is still an important activity. Considering the lack of jobs in non-agricultural activities, the high share of the active population in agriculture is understandable. According to Vovk (1998), the process of deagrarization in Haloze lags behind the Slovene average by 20 to 30 years; there is a similar case in Goričko. In the period of the highest intensity of industrialization, there were few possibilities for employment outside agriculture in all areas, which led to emigration. In order to stop the emigration, in all these areas, other than Brkini, smaller plants were built in the 1970's (five in Goričko, two in Haloze and Idrijsko hribovje). Traditionally, regional policy saw a guarantee for economic and social progress, a higher living standard and full employment in the work-intensive industry. However, such policy did not enhance the education and qualification structure of the employed, because it developed branches which could employ excess farm labour force, i.e., the unqualified or people without the necessary qualifications. This was one of the basic problems, since a large part of the schooled youth did not get employment in the home region, and the emigration of the youth continued. Many of these plants declared bankruptcy after the transition to the market economy due to a lack of competitiveness or faced excess labour force due to modernization of production. Bankruptcies and laying-off of excess labour force caused great unemployment, in particular in Goričko and Haloze, where the share of the unemployed at 10.8 % or 11.5 % in 2002 rose high above the national average.

In view of the modest number of jobs for all areas, most of the employed in all areas, commute to work outside these areas (Brkini 80.2 %, Goričko 56.7 %, Haloze 73.7 %, Idrijsko hribovje 75.3 %). The high share of daily migrants shows a typical daily migration of workforce in the depopulation areas and displays the peripheral characteristic of the selected areas or their lower economic development.

Table 1. Selected indicators for Brkini, Goričko, Haloze and Idrijsko hribovje, in comparison with the Slovene average

Indicator		Brkini	Goričko	Haloze	Idrijsko hribovje	Slovenia
Number of inhabitants	1961	6236	31 025	16.758	5587	1.591.523
	1991	4110	23.262	11.721	3524	1.965.986
	2002	3782	19.917	10.611	3340	1.964.036
Index of population growth	1961-1991	66	75	70	63	124
	1991-2002	92	86	90	95	100
Population density per km^2	2002	16.4	43.5	47.3	14.4	96.9
Share of men	1961	50.4	48.2	47.1	46.9	47.8
	1991	51.2	49.0	49.5	49.2	48.5
	2002	49.9	48.5	49.7	48.5	48.7
Ageing index	1961	45	38	21	44	29
	1991	123	102	60	106	53
	2002	166	134	102	118	96
Number of households	1961	1604	7359	3844	1561	458.853
	1991	1324	6407	3405	1135	640.195
	2002	1327	6185	3572	1130	688.733
Index of households growth	1961-1991	82	87	88	73	139
	1991-2002	100	96	105	99	107
Average number of households members	1961	3.9	4.2	4.3	3.6	3.5
	1991	3.1	3.6	3.4	3.1	3.1
	2002	2.8	3.2	2.9	2.9	2.8
No education, incomplete basic education (%)	1961	90.7	58.7	88.9	91.0	60.4
	1991	40.4	18.8	36.2	37.5	17.2
	2002	21.2	9.1	15.2	14.4	6.3
Basic education (%)	1961	5.7	38.6	7.4	6.2	19.6
	1991	29.0	58.2	36.6	37.5	29.9
	2002	30.5	50.8	39.1	39.8	26.1
Upper secondary education (%)	1961	3.4	2.8	3.5	2.7	17.7
	1991	29.0	21.3	25.6	23.1	43.8
	2002	43.5	36.9	42.3	40.7	54.1
Short term tertiary, higher undergraduate and postgraduate education (%)	1961	0.2	0.1	0.1	0.1	1.8
	1991	1.3	1.4	1.6	1.9	8.8
	2002	4.7	3.1	3.3	4.3	13.0
Active population and persons in employment* (%)	1961	45.4	65.0	57.1	44.4	48.3
	1991	44.3	53.6	50.4	44.6	49.4
	2002	43.6 36.9*	48.9 38.1*	47.6 36.1*	44.2 41.6*	48.4 41.7*
Unemployment rate (%)	2002	6.7	10.8	11.5	2.6	6.7
Employed in primary sector (%)	1961	70.8	87.1	83.0	68.2	40.2
	1991	33.8	61.0	42.1	26.5	13.8
	2002	6.7	22.1	10.2	10.4	3.9
Employed in secondary sector (%)	1961	12.8	4.0	8.3	12.7	38.5
	1991	37.5	18.0	25.2	49.3	45.8
	2002	40.3	30.4	48.3	55.3	38.0
Employed in tertiary and quaternary sectors/ services (%)	1961	10.1	6.1	5.2	13.1	21.3
	1991	28.5	14.6	20.7	18.9	40.5
	2002	48.6	30.9	36.0	30.9	52.7
Daily commuters to work (%)	1961	68.4	55.5	54.4	50.3	41.3
	2002	80.2	56.7	73.7	75.3	54.6

Source: Census 1961, 1991, 2002.

RESULTS OF FIELD RESEARCH

The number of households in Slovenia has in general increased as a result of faster industrial development, migration of the population from the countryside to the cities and many other changes after World War II, whilst in all the selected areas the number of households has decreased (Table 1). A decrease of the number of households was the result of a decrease of the number of inhabitants, even though the number of households has been decreasing to a lesser extent. The reason was in migration of the younger members of the households and not the migration of entire households since the older members of the households have remained at home. As the number of inhabitants has decreased faster than the number of households, the average number of household members has also fallen. In all areas, the number of small households has increased significantly, whilst large families, which used to be typical of the selected areas, have become rare. In particular, there has been an increase of the number of single and two-member households. With regard to the unfavourable age structure of the population in the selected areas, it was possible to presume that many households contained elderly people; this was later confirmed by fieldwork. Field research focused on households in eight settlements, selected at random; two in Brkini (Ostrožno Brdo, Tatre), Goričko (Ocinje, Krplivnik), Haloze (Grdina, Pohorje) and Idrijsko hribovje (Jagršče, Šentviška Gora).

Age types of households and their significance for the future development of households

The most obvious consequence of depopulation is the ageing of the population and the increase of the number of elderly households with one or two members, classified as types 1 and 2. Usually, these households contained spouses who remained alone after the children had moved out, or they were single-parent households. In most elderly households, livestock breeding and land cultivation were abandoned. Arable land was either leased to neighbours or was overgrown. For the future development of the settlement, such households are insignificant. With regard to their number, we can foresee by how much the number of inhabitants and the number of households in a settlement will decrease in the future. Among elderly households, 70 % were single and among these, 80 % contained women. In the type-2 households, most households contained spouses in their sixties. At Ostrožno Brdo, type-1 and type-2 households represented 52 % of households, in which lived a third of the inhabitants. At Jagršče, 39% of the inhabitants of the settlement lived in almost two thirds of households. After the death of the members of these households, the houses will probably deteriorate. An exception is settlements with potential for weekend houses (Tatre, Pohorje), where the heirs have already redesigned certain houses into holiday residences. Survey results have shown a connection between the age-structure type of household and the type of the building housing such a household. Viable households with all age groups were mostly housed in one- or two-storey houses, whilst type-1 and type-2 households were mostly present in old farmhouses.

From the point of view of future development of the settlement, in addition to type-1 and type-2 households, households containing the middle-aged and the elderly (type 3) also have little significance. They most often contain elderly parents with a child above 35 and 50 years of age. As many as 86 % of households contained parents and their unmarried sons in their forties, who will probably not form a family. The reason for this is

the fact that the son, as the heir of the house and of the holding, did not want to or could not move out. It is a well-known fact that such men have difficulty finding a partner. The existence of the farm thus depended only on the son's will. The son was often the only labour force available. After the death of the parents, these households will become single households and in long term the existence of the family and of the agricultural land will also be at risk. The largest share of such households was at Ocinje, where a quarter of the inhabitants of the settlement lived in the quarter of households.

Type-4 households contain parents with children between 26 and 35 years of age. Such households were classified among the potentially viable households. This type also included the households that could not be classified as potentially viable (e.g., two brothers in their thirties living together, spouses or a woman or a man in their forties). Instead they were classified as non-viable households.

Type-5, type-6, and type–7 households were classified as viable. These were all households with children under 25 years of age and with parents that are still active. Viable households are the carriers of the future development of settlements. They provide the development potential that would ensure income for their inhabitants and improve the quality of life. The presence of viable households is indicative of the attractiveness of settlements for habitation, since young people remain at home, form families and live either in their own households or in households with their parents. This is most noticeable in Grdina and Šentviška Gora, where there are many new houses. In both settlements, the households of types 6 and 7 represented approximately a third of all households, with the largest part of the inhabitants of the settlements living in them: 47 % at Šentviška Gora and 41 % at Grdina. Among the households with the young and the middle-aged, most were five-member (parents with three children) and four-member households, whilst among young households most were three-member households. In terms of household members, three-generation households were larger, with grandparents, children and grandchildren living together. Often other relatives, such as brothers and sisters were also present. Most three-generation households were found at Krplivnik (27 %) and Tatre (25 %), with 42 % of the inhabitants living in such households. According to Klemečič (1979), the large part of such households indicates a relatively solid structure of households, typical of the agrarian society. The three-generation households are very important from the point of view of preserving agriculture, since only a tenth of them were no longer involved in agriculture. In these households there were several livestock units and more agricultural land was cultivated than in other types of households. Three-generation households have more workforce, with children as well as parents helping in the farm work. Parents also help in the raising of the children and in household chores, so that the parents (middle generation) are less burdened and have more time for work on the farm as those living in the household types 6 or 7. Among these, there are more households that have already abandoned agricultural activity or are about to do so. In all three types of households, at least one member of the household, and most often two, was employed in non-agricultural activities, because income from agriculture was not sufficient for survival.

The share of viable households (Ostrožno Brdo 30 %, Tatre 50 %, Krplivnik 38 %, Ocinje 37 %, Jagršče 21 %, Šentviška Gora 45 %, Grdina 61 %, Pohorje 32 %) and their members (Ostrožno Brdo 50 %, Tatre 67 %, Krplivnik 65 %, Ocinje 52 %, Jagršče 42 %, Šentviška Gora 68 %, Grdina 78 %, Pohorje 50 %) has given concern in particular at

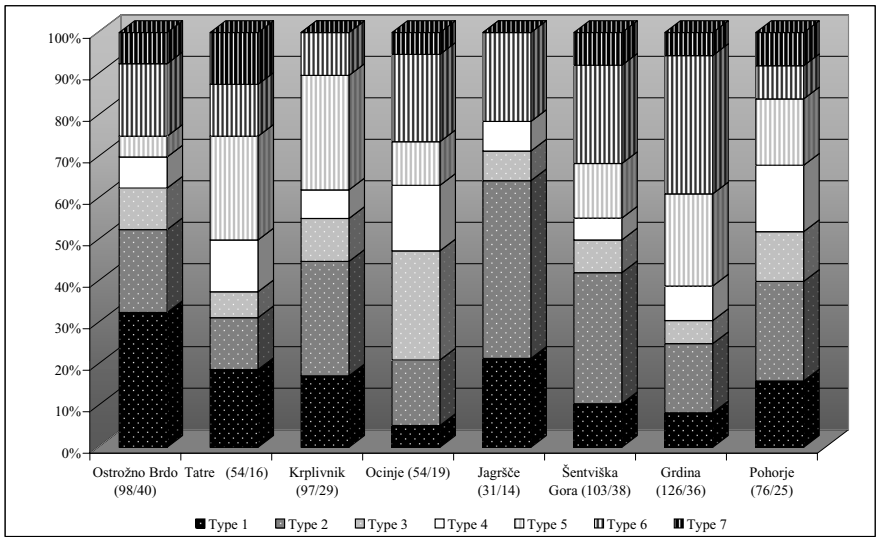


Figure 5. Types of households in selected settlements, by the number of households, 2002
Source: Benkovič 2003.

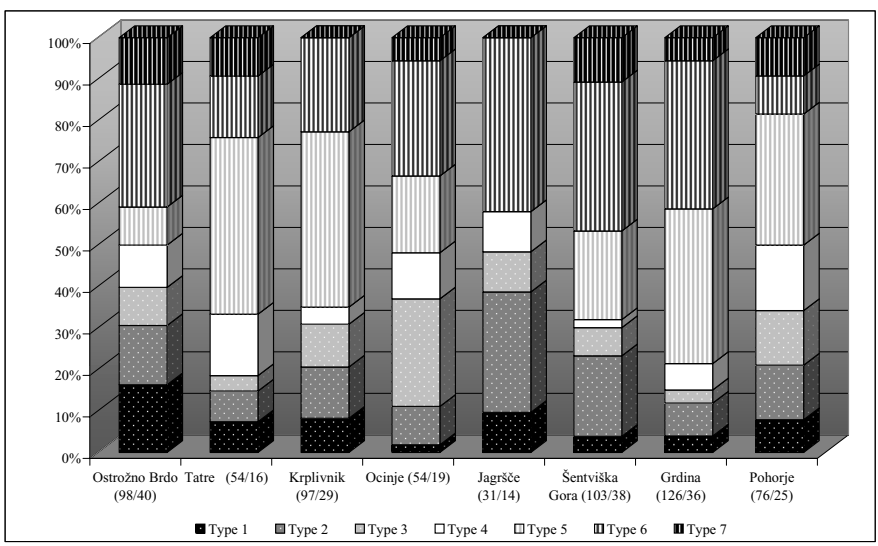


Figure 6. Types of households in selected settlements, by the number of inhabitants, 2002
Source: Benkovič 2003.

Jagršče, Ostrožno Brdo, Ocinje and Pohorje. Due to a large share of the elderly population, and therefore increased mortality rate, a decrease of the number of inhabitants is expected in most settlements. The demographic threshold, other than the Grdina settlement, was significantly exceeded. Although the remoteness of settlements from supply centres was not a problem due to motorization and improved road connections, and although the residential environment was of greater quality than in urban settlements, this is no guarantee that the young population living in the settlement would not migrate. In terms of a long-term development, the existence of selected settlements is questionable.

CONCLUSION

Although research results were as expected, certain results were surprising due to their derogation from the national average. An analysis of statistical data showed that after World War II, an intensive process of depopulation was under way in all areas due to their remoteness from centres of development. The selected areas faced similar development issues, even though their development in the past had been influenced by different factors (impact of the mine in Idrijsko hribovje, migrant workers and the closed border with Hungary in the region of Goričko, the impact of Trieste on the development of Brkini, vine dressing in Haloze). In terms of development, the age and education structure of the population were particularly unfavourable in all areas as was the employment structure, which lagged behind the development of the contemporary society due to its orientation towards industry and agriculture and a lack of competitiveness. An exception was Idrijsko hribovje, where employment in non-agricultural activities had a longstanding tradition. The traditional heavy industry was restructured successfully into the industry of high technology and export-oriented industry, which was further indicated by the low unemployment rate.

The new development trends, market economy and globalisation have deepened the above-mentioned problems. In view of the fact that the direction and promotion of the development of the areas is to be based in particular on own human and natural resources, a question is raise what will happen to the studied areas, as well as the peripheral and depopulation areas in Slovenia. Regional policy has been unsuccessful for more than three decades in its efforts to solve the problems of the less-developed and demographically endangered areas. In almost half of the Slovene territory, population and the cultural landscape are at risk. What, if any, are the structural policy measures which would stave off further deterioration of the mentioned areas? What will happen to the 47 % (*Decree on Regions*…) of demographically endangered settlements? We suppose that the status of their population is quite similar to the status of settlements surveyed in the study and that many settlements will become vacant as a result of the lack of influx of the young. Will Slovenia slowly lose about 2800 settlements (91 % of the Slovene settlements have less than 500 inhabitants and 49 % have less than 100 inhabitants) and will it become the leading country in Europe in terms of its share of areas under forest (in 2002 62 % of the state territory was covered with forest)?!

REFERENCES

Benkovič, M. (2003) *Strukturni problemi depopulacijskih območij v Sloveniji*, Unpublished M.Sc. thesis, Department of Geography, Faculty of Arts, University of Ljubljana.

Decree on Regions Deemed as Demographically Endangered Regions in the Republic of Slovenia in the Period 1999-2000, Official gazette of the Republic of Slovenia, 19/99.

Klemenčič, M. M. (1979) *Geografska preobrazba podeželja na Tržaškem po zadnji vojni*, Unpublished Ph.D. thesis, Department of Geography, Faculty of Arts, University of Ljubljana.

Klemenčič, M. M. (1993) Starostna in narodnostna sestava prebivalcev Tržiča, *Geografski vestnik* 65, 79–90.

Kovačič, M. (2000) *Razvojno-tipološka členitev podeželja v Republiki Sloveniji,* Biotehniška fakulteta, Oddelek za agronomijo, Inštitut za agrarno ekonomiko, Ljubljana.

Kraigher, T. (2001) *Ocenjevanje in projekcija izobrazbenih tokov in izobrazbene sestave prebivalstva*, Ljubljana, Urad za makroekonomske analize in razvoj.

Olas, L. and Kert, B. (1993) Vpliv državnih meja na družbenogospodarski razvoj Prekmurja, *Dela* 10, 135–142.

Perko, D. (1998) *Prebivalstvo*, in Gams, I. and Vrišer, I. (eds.), *Geografija Slovenije*, Slovenska matica, Ljubljana, 270–293.

Statistical Office of the Republic of Slovenia, *Results of the censuses in the years 1961, 1991, 2002*, Ljubljana.

Vovk, A. (1998) *Haloze*, in Perko, D. and Orožen Adamič, M. (eds.), *Slovenija, pokrajine in ljudje*, Mladinska knjiga, Ljubljana, 616–622.

Natek, M. (1996) *Temeljne sestavine rasti števila prebivalstva v obdobju 1961–1995*, in Pak, M. (ed.), *Spodnje Podravje s Prlekijo, možnosti regionalnega in prostorskega razvoja*, Zveza geografskih društev Slovenije, Ljubljana, 183–200.

Ravbar, M. (2000) Regionalni razvoj slovenskih pokrajin, *Geographica Slovenica* 33, 2, 9–81.

EUROPA XXI
2006, 15: 213–219

DEMOGRAPHIC PROBLEMS OF THE PERIPHERAL REGIONS IN BULGARIA CASE STUDY AREA – THE NORTHWESTERN PLANNING REGION

CHAVDAR MLADENOV

Institute of Geography, Bulgarian Academy of Sciences
1113, Sofia, Bulgaria,Ac. G. Bonchev Str., bl.3
e-mail: chmladenov@abv.bg

Abstract: The Northwestern planning region is a typical example of a peripheral area whose unfavourable geographical location has for a long time predetermined the poor growth of its economic potential. The peripheral position strongly restricts the possibilities for a better education, for carrying out investigations, for making innovations and developing technologies or for stimulating the competitive power. The main problem of the peripheral is depopulation. During the period 1946-2001 the population in NW region decreased by 23.5%. The population aging is another acute demographic problem – the population over 60 years of age constitutes 29.8%. The demographic problems are high level at the regressive population reproduction and the negative migration. The peripheral location causes a lower educational level of the population.

Key words: depopulation, aging, regressive population reproduction, negative migration

INTRODUCTION

A socio-economic policy is being implemented in Bulgaria which aims at effective and competitive economy and integration with the European structures. The regional policy is its component part. The regions for purposeful impact are an object of planning and management. Many of the peripheral areas are included into these regions. The problems they face are different. Among them are the demographic ones which adversely affect their development and competitive power.

ECONOMIC OVERVIEW OF NORTHWESTERN PLANNING REGION

A typical, historically delineated peripheral region in Bulgaria, is the Northwestern planning region. Its geographical location is extremely unfavourable and that is why it is the most underdeveloped economic planning region. The western and southern frontier have mountainous relief and are difficult to cross (there are only 3 passes) while the northern one is the river Danube. In the past, because of political reasons, the state borders were practically closed. The adjacent areas are economically undeveloped as well. The transport access to the region is difficult – the road network is insufficient and consists of low-grade roads (the 1st class roads have the smallest share – 5.3%). This fact reduces the transport access of the population to the centres which offer a certain type of services, related to health care, education, culture, etc. Consequently, the Northwestern region does not have a distinct organizing centre. At the same time it is far away from the significant economic centres in Bulgaria. The Northwestern planning region occupies 9.3% of the country's area; 6.6% of the country's population is concentrated in it and the average population density is only 49.8 persons/km^2 (2003-data). It is responsible for 5.8% of the national gross domestic product (GDP). The employment in the private sector is the lowest in the country – 51%. The poorly developed industry in the region contributes with 34.7% to the region's value added and with 5.8% to the country's one. Its peripheral location makes it unattractive for investments and that is why particularly the direct foreign investments here are the smallest – 2.6% of the total investments. The foreign investors prefer regions which are highly urbanized, with well developed infrastructure, qualified human resources and easy access to areas, providing services and performing manufacturing functions. Such prerequisites for investments in the NW planning region are lacking although in principle they are more important than any system of levers (tax preferences).

Due to the structural reform, the employment level has decreased in all regions but it is the lowest in the Northwestern planning region – 47.5%. In fact this is one of the most serious problems. The situation will further aggravate if some of the NPP "Kozlodui" capacities are shut down and a number of the NPP's workers are released. At the same time the highest unemployment level in the country is recorded in the NW region – 23.4%. Actually, the high unemployment is a common feature of the other peripheral areas, too (e.g. Targovishte, Yambol, etc.). The NW planning region is notable for its very high share of long-lasting unemployment – 61.6%, regarded to be an acute social issue. The employment and unemployment level negatively affect the population reproduction in long-term perspective, accelerate the depopulation and migration processes, restrict the utilization of the available resources and lead to concentration of population in few towns. There aren't any institutes of higher education in the NW planning region. Its peripheral location suppresses the initiatives of the intellectuals, deprives people from access to education, research, innovations and new technologies and diminishes the region's competitive power.

DEMOGRAPHIC PROCESSES IN NORTHWESTERN PLANNING REGION

The main problem of the peripheral areas is depopulation. In the NW region it proceeds more rapidly as compared to the other peripheral regions. Thus, for example, over the

period 1946-2001 the population of the NW planning region drops down by 23.5% while in the remaining regions (except for the North Central region) the number of population grows. The conclusion is that the peripheral areas give out-migrants. During 2001-2004 the population in four regions decreases. Most marked is the decrease in the NW region (7.7%) and for the others it varies from 1.6% to 2.1%. In the Southwestern and South Central region, which have big centres (Sofia and Plovdiv), and which are economically most advanced, the population increases. Today, the negative natural increase and emigration also largely contribute to the population decline (Figure 1).

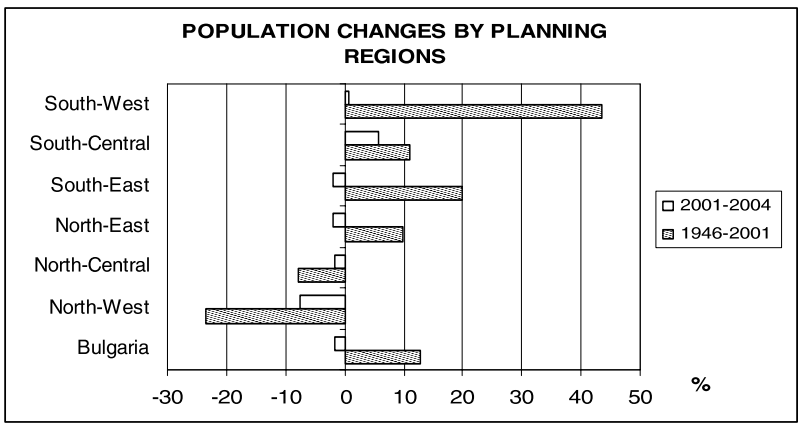


Figure 1. Population changes by planning regions in Bulgaria

On the average, the population in the villages of the NW planning region has lessened from 1470 people (1946) to 570 (2001). This is a result of the intense migration in the 1950s and 1960s, of the maintenance of powerful out-migration flows later on, and of the negative natural increase since the early 1970s. Therefore, the depopulation here is a continuous process, which compared with the other parts of the country, is most drastic. Vast areas, lying remote from the economic centres, and individual settlements have been depopulated and have encountered irreversible demographic consequences: a very small number of population in highly advanced age, lack of population reproduction, abating settlement functions and agricultural activities able to meet only the family needs. First, the depopulation resulted from the negative migration increase which was bigger than the positive natural increase. Then it was associated with the negative migration and the negative natural increase (the negative migration increase prevailed); since the mid-1980s the negative natural increase has become dominant.

During 1946-2001 22 communities experienced a population decrease by over 40% (Figure 2). Since 2001 the depopulation processes have continued irrespective to the economic stabilization. During 2001-2004 in 27 municipalities the population dropped by more than 4% (Figure 3). A common feature is that depopulation has affected mu-

nicipalities with district towns as centres (Vratsa, Montana, Vidin) which used to grow in the past. A clear-cut correlation can be observed in the NW planning region: the greater the distance from the district centres is, the more intense depopulation occurs, which is geographically, socially and economically predetermined – the region includes mountain and border-lying territories as well as the most poorly industrialized areas in the country. The continuous depopulation results in the most adverse demographic parameters in this region (the lowest birth rate, high death rate, strongly aged population, low educational level, etc.), slows down the economic prosperity of the peripheral region under investigation and substantially restricts its competitive power at a regional, national and EU level. The region's inadequate demographic potential prevents from complete utilization of the subsidies, granted by the European Funds.

The continuous depopulation process has brought about another problem – the population aging. The trend in the age structure dynamics is towards increase of the share of people older than 64 years. This fact reflects on the labour market – the share of youth drops down while that of the older ages (50-64) goes up. In the NW planning region the population aging, caused by the declining birth rate and the increasing average life expectancy, is not smooth but proceeds fast because of several migration waves, generated by specific socio-economic conditions (lagging behind industrialization, weak urbanization, monocentric pattern of settlement system development, underdeveloped transport and social infrastructure, school closure, etc.).

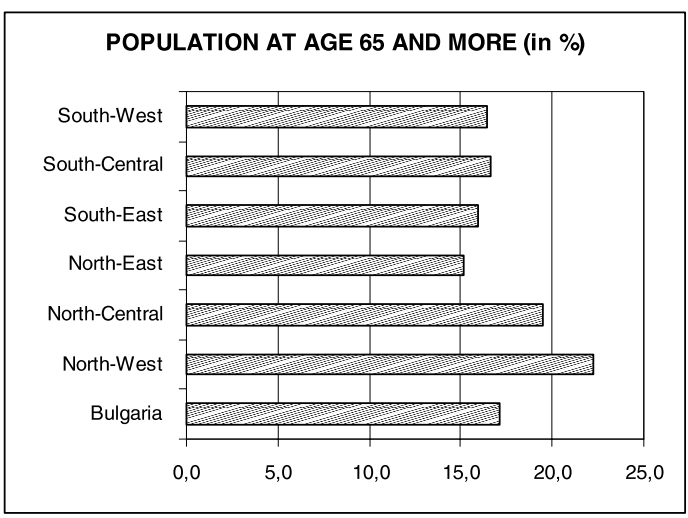


Figure 2. Share of people in post-productive age by planning regions in Bulgaria

The share of people, aged over 64, is 22.2% which is by 5 factors less than the national one and by 6.5 factors lower than the average for the EU 25. In comparison with the other planning regions the population aging in the NW region is most advanced (Figure 2)

which can be ascribed to the fact that this process has started first in it – in the mid-1960s. In addition, the social infrastructure and the specific health network, conformable to the advanced age of the population, is highly insufficient, posing a threat of social tension.

Many of the communities in the NW planning region encounter the aforesaid acute problems. Drastic differences can be observed in the concentration of population aged over 64. In 19 out of totally 32 communities the share of this age group is more than 30% and in the border areas, whose centres are villages, the share exceeds 40% (e.g. Boinitsa, Makresh, Chuprene, etc.). There is a strong dependence between the age structure and the socio-economic development of the communities in this region. In socio-economic respect the most developed communities have the youngest age structure (Vratsa, Montana, Vidin, Lom, Kozlodui). In the district centres the young age structure can be explained with the regional policy, implemented in the past, which has encouraged the rural-urban migration. As a result, these towns have attracted most of the rural population to their impact zones (about 80% of the region's migration has been directed towards the district centres) and have maintained a favourable ratio among the age groups. The region's major industrial capacities and social infrastructure are located in them. The age structure disproportions at a communal level give rise to various social and economic problems which impede the progress of the individual communities and of the whole region, thus making the latter less competitive than the remaining regions. The great share of population at the age of 65 and more presupposes the small number of fertile contingents and low birth rates in the NW planning region. On the other hand, it predetermines a comparatively low labour potential. A very high age dependency ratio is established (57.4%), which is by 10 factors higher than the national average. The share of population below the age of 15 is 14% (for the EU 25 it is 17.1%). It does not allow to make optimistic prognoses about population growth in the future.

Another demographic problem in the peripheral areas of the country is the negative natural increase. In the NW planning region it is twice as low as the national average (-11.1 per thousand against -5.7 per thousand). This is due to the very low birth rate (8.1 per thousand), to the extremely high death rate (19.1 per thousand) and to the unusually high rate of population aging. The lower level of urbanization (41% rural population) also exerts its influence because the rural population reproduction is characterized by unsatisfactory parameters – 6.6 per thousand birth rate and 29.6 per thousand death rates. Within the NW planning region the natural increase varies considerably – up to 30 factors. A distinct correlation can be noticed between the natural increase, on the one hand, and the population aging and the socio-economic development of the communities, on the other. The smaller the negative natural increase is, the younger age structure and the greater socio-economic potential are available (e.g. Vratsa, Montana, etc.). Most unfavourable are the conditions in the rural communities where the natural increase is over -20 per thousand and in some cases – over -30 per thousand (Boinitsa, Makresh). These figures result from the very low birth rate (in 7 communities it is below 5 per thousand) and from the very high death rate (in 18 communities it is above 25 per thousand). The negative natural increase in combination with the heavily degraded age structure leads to a regressive type of population reproduction. Nowadays the depopulation in the peripheral areas is associated with the extremely high negative natural increase. This trend will persist unless the age structure normalizes by natural causes in spite of the expected

population decline. Thus a lot of settlements are likely to become depopulated and will drop out of the settlement network. In order to delay this undesirable process, a target-oriented regional policy is needed, owing to which the out-migration will be reduced and new settlers will be attracted.

The inner migration movements of the NW planning region can be characterized by the following features: until 1989 the migration increase is negative, from 1989 to 1998 it is positive and since 1998 it has become again negative. During the early stage of the transition period the positive migration increase should be assigned to the economic restructuring. A lot of enterprises have closed some of their technological lines and, hence, have released labour force. As a result, return migration flows from towns to villages have started. Besides, the sudden aggravation of the living conditions throughout the country, and particularly in the NW planning region, has made a great number of pensioners go back to their native places and cultivate the land to meet their own needs of farm products. After the critical 1997 the country has entered the stage of economic stabilization, demanding labour force. Unlike the other planning regions, the NW one has been lagging behind in its economic performance which generates out-migrations again prevailing over in-migrations. The economic backwardness has caused a very high migration turnover – about 50 per thousand (the national average is 39 per thousand). Intense in-migrations (over 20 per thousand) and out-migrations (over 30 per thousand) have been responsible for it. Now the migration increase of the region is negative (-6.4 per thousand) and is twice as high as that in the other regions. The persistent negative rates of migration increase worsen the parameters of the demographic situation in the NW planning region.

The skills of workforce are considered to be the primary advantage of the regions in global competition. The high level of education and the top-quality training consolidate the innovation capacity. In Bulgaria a trend can be observed towards improving the educational level. The share of people with secondary and higher education is growing in all planning regions. However, there are interregional disparities in the educational structure which correspond to the economic development. With respect to the educational level, a polarization can be established between the Southwestern region (15.5% of the population are university graduates) and the Northwestern region (5.8%). The NW planning region has indices, demonstrating a relatively good educational level of people aged between 25 and 65, similar to those in many regions of Greece, Italy, Portugal, etc. Nevertheless, there are a number of unresolved problems about the quality of training which the educational institutions in Bulgaria provide for the young people in conformity with the demands of labour market. Irrespective of the considerably high educational level of able-bodied population, in all regions the labour force qualification is inadequate and cannot meet the challenges of the economy, based on high professional knowledge and governed by global processes. The main conclusion to be drawn is that the NW planning region is lagging behind in terms of its work force qualification and technological/innovation potential for growth. To overcome this backwardness is of utmost importance for achieving complex economic development in the peripheral regions. The "centre-periphery" conflict in them is very serious. The Structural Funds and the Cohesion Fund are not properly administered by the local and regional authorities in the peripheral areas which requires special measures for their efficient utilization.

CONCLUSIONS

On the basis of the analysis, the following conclusions can be made about the peripheral regions:

- the demographic problems slow down the economic growth and weaken the competitive power;
- the peripheral areas are subjected to progressive depopulation which will further aggravate the demographic indicators;
- the population aging results in acute social problems;
- the grants, provided by the Structural Funds and the Cohesion Fund, are not fully used.

The specific goals of the regional development policy in the peripheral regions can be defined as follows: development of vital agricultural sector, diversification of the economic structure in conformity with the local potential; creation of alternative sources for employment and incomes; stabilization of the demographic and settlement development, unemployment reduction and raising of the low wages; a better access to the educational and health service infrastructure.

As basic sources for more efficient regional development are considered to be: the localization of educational and research centres, the highly qualified human resources and the availability of a relatively good infrastructures and business-related institutions. The peripheral regions need governmental support (regional policy for regions of purposeful impact), aiming to create conditions which will favour the process of stable structural transformations and the mitigation of the current unemployment and social problems.

EUROPA XXI
2006, 15: 221–234

FACTORS DETERMINING THE SPATIAL DIVERSIFICATION OF THE SAPARD FUNDS ABSORPTION LEVEL IN KUJAWSKO-POMORSKIE VOIVODSHIP

MIROSŁAW BICZKOWSKI and ROMAN RUDNICKI

Instytut Geografii, Uniwersytet Mikołaja Kopernika
ul. Danielewskiego 6, 87-100 Toruń, Poland
e-mail mirbicz@uni.torun.pl

Abstract: The paper concerns the spatial differentiation and determinants of absorption of European Union funds in the frame of SAPARD program in the Kujawsko-Pomorskie province. The analysis on one side includes numerous evaluation elements of the absorption of these funds (for example the amount of financial help, indices of the absorption counted per 1 person, per 1 ha agricultural land), while on the other side determinants (urbanisation, natural, historic, agrarian) that influence significantly the absorption level of the SAPARD funds by the districts. The above mentioned elements of the analysis are presented taking into account the distribution for the separate SAPARD activity.

Key words: pre-accession fund EU, SAPARD, rural areas

INTRODUCTORY REMARKS

The pre-accession assistance programmes are the important instruments in shaping the European Union's structural and regional policy, the role of which is to support the restructuring and modernization of the economies of the countries accessing the EU. The support for the less developed regions and economy sectors is meant to decrease the differences in the level of development and the living conditions between the individual regions as well as to adapt and implement the European standards and requirements to the economies of the individual countries.

Thus, the basic assumptions of the support programmes activity include, among others, the support for the areas of the unfavourable development conditions and under-

developed (with reference to the medium standards of the EU) or the areas sparsely populated, the modernization of the job market and restructuring of the sectors that are underdeveloped and have a high rate of unemployment. Considering the above priorities, attention should be paid to the factors determining the level of EU funds absorption, from the point of view of the basic purposes of the EU financial support programmes functioning. The support programme for agriculture and rural areas is SAPARD.

The analysis of the spatial diversification in the absorption of funds from this programme allows to estimate the efficiency and rationalization of directions of these funds' distibution, from the point of view of the purposes of the programme's functioning. The analysis aimed to deal with the above issue has been conducted on the example of Kujawsko-Pomorskie voivodship, with a community as a basic spatial unit. This is a voivodship characterized by the high indexes of the SAPARD funds absorption as compared to the rest of the country, as well as by a strong diversification of the internal factors determining it: natural, agricultural, historical or related to urban development. Thus it is fairly representative in comparison to the rest of the country and can be a subject of a detailed research. In the analysis that will follow, communities have been assumed as the basic spatial units; they have been taken into a system of 144 units, and among them there are 92 rural communities, 35 municipal-rural communities and 17 municipal communities, with four cities with poviat rights among the latter. The analysis takes into consideration the amounts of the financial assistance as broken into the individual SAPARD measures, together with the structure of the beneficiaries of these measures, as well as natural, agricultural, historical or urban development-related factors, determining in a crucial way the level of the SAPARD funds absorption.

SAPARD-THE CHARACTERISTICS OF THE PROGRAMME

The pre-accession programme SAPARD (Special Accession Programme for Agriculture and Rural Development) has been established in 1999 and it has encompassed with its activity the 10 Middle-Eastern Europe countries, candidates for the membership in the European Union. The estimated period of the programme's functioning were the years 2000-2004, though for the procedural reasons in Poland the process of accepting the SAPARD applications began in 2001, and since 1 May 2004 the process of the implementation of the approved projects has been continued (and it will last until 2006). The financial support from this fund is to help stimulate the development of the rural areas and contribute to the smooth inclusion of these countries into the system of Common Agriculture Policy – first of all, they were allocated there in order to:

- improve the competitiveness of the Polish agriculture as well as farm-processing and food-processing industries, both on the national and international markets,
- adjust the food and farming sector to the demands of the Single Market with regard to sanitary, hygienic and quality demands,
- support the multifunctional development of the country regions through the development of the technical infrastructure and creation of opportunities to take up non-agricultural economic activity in the country (Janus-Hibner, Pastusiak 2004).

Moreover, SAPARD constitutes a kind of training ground for the potential beneficiaries, the purpose of which is to prepare them to use the EU means, already within the EU structural funds.

The structure of the SAPARD programme encompasses four basic measures, each of them connected with a specific group of beneficiaries:

- Measure I: 'Improvement in processing and marketing of the food and fishery products (from which the entrepreneurs as well as the groups of the farm producers and their unions benefited). This operation applies to the investments closely related to the adjustment of the industrial plants to the sanitary and veterinary standards of the EU.
- Measure II: 'Investments in agriculture holdings' (from which the individual farmers benefited). This operation has been subdivided into a number of patterns aiming to improve the effectiveness of agriculture and the adjustment of the production to the demands of the market and the EU requirements.
- Measure III: 'Development of rural infrastructure' (from which benefited the local government units functioning in the rural areas in towns with the population of up to 7 thousand inhabitants). Donations encompassed a number of investments, the realization of which contributed to ensuring the rural areas population the appropriate living standard on one hand, and to increasing the attractiveness of the rural areas for the local and exterior investors.
- Measure IV: 'Diversification of economic activities in rural areas' (from which the farmers, entrepreneurs, local government units and non-government organizations benefited). The financial assistance has been allocated to support the multifunctional development of the rural areas, mainly relating to the creation of the sources of additional income in agricultural private farms and of the places of work in the rural areas (*SAPARD* 1999).

Apart from that, the Measure V has been distinguished: 'Agricultural-environmental measures' (pilot projects), which has not been implemented (and which will be carried out from the structural funds within the Development Plan of Rural); and the Measures VI 'Vocational trainings' and VII 'Technical assistance', which were horizontal in their character and concerned the trainings, seminars and conferences for the potential beneficiaries of the SAPARD programme.

FACTORS DETERMINING THE SPATIAL DIVERSIFICATION OF THE SAPARD FUNDS ABSORPTION LEVEL

The spatial diversification, the amount and the structure of the SAPARD means acquired by the individual local government units is a result of the interaction of a number of factors determined in a great degree by the internal potential of every community. This relates to both natural and extra-natural conditions, that is the political and economic past and the processes of the urbanization and industrialization.

One of the most crucial problems of the research is therefore to isolate and estimate the factors determining the spatial diversification of the acquired funds. The analysis with such assumptions has been carried out with reference to the natural, agricultural, historical and urbanization-related conditions. The individual factors (apart from the

historical one) have been characterized on the basis of a number of diagnostic features, which were subjected to standarization and presented in the form of one synthetic index – the average standardized value for every factor (Racine, Raymond 1977). The features united like this have been put in a form of 3-degree scale of the class sections, reflecting the low (below -0.5δ st.dev.), middle (from -0.5δ st.dev. to +0.5δ st.dev.) and the high level of the phenomenon (above 0.5δ st.dev.).

The evaluation of the natural conditions has been carried out on the basis of the agricultural production space quality index. The Kujawsko-Pomorskie voivodship is characterized by the substantial diversity of natural conditions, the extent of which, expressed by the jRpp index, amounts to 50 points (from 43 points for Skępe commune to Śliwice, 93 points – Papowo Biskupie commune). The favourable conditions reappear also on the area of Kujawskie Lake District and Chełmińskie Lake District as well as the Inowrocław Plain (high level of the phenomenon, over 75 points according do space quality index). The areas of the unfavourable natural conditions in turn are usually located within the limits of Dobrzyńskie Lake District, Toruń Dell and Bory Tucholskie (low level of the phenomenon – below 63 points according to space quality index). The natural conditions can have a substantial influence on the competitiveness of the polish farms on the common market UE. The natural and soil conditions in Poland are worse than the average soil conditions in the European Union. It is therefore advisable to compensate the higher costs of production resulting from the low productivity of the environment which the farmers exploit (*Polska wieś…* 2004). Bearing in mind the main assumptions of the programme, the high activity in obtaining funds by the communities distinguished by the unfavourable natural agricultural conditions would be particularly desirable. This results from the limitations on the way to the agriculture intensification on one hand, and from the necessity to improve the private farms income on the other.

The amount of assistance distributed form SAPARD programme so far (266.8 million PLN zlotys – state for march 2005) shows that the communities numbered among the group of areas with the unfavourable natural conditions (which constitute 20% of all communities in the voivodship), obtained a little more than 62.1 million PLN zlotys, which constitutes 23.3% of the amount distributed. Calculated per 1 ha of the agricultural lands, this constitutes nearly 383 PLN zlotys and it is a much higher index than the one in two previous groups (each about 210 PLN zlotys). A completely opposite situation has occurred, when the obtained amount was calculated per one inhabitant of a given area. The index amounted to as little as 84 PLN zlotys, while in the communities with the average natural conditions it was 196 PLN zlotys and in communities with the favourable natural conditions, 288 PLN zlotys (almost 3.5 times more).

Another factor influencing the potentiality of EU funds absorption are the urbanization-related conditions, which are mostly distinguishable in the spheres of influence of the agglomerations, and which depend on their size and attractiveness. In order to determine the diversification of urbanization conditions, five diagnostic features were employed, these are: the percentage of non-agriculture population of the total population (the non-agriculture population has been defined as persons not living in the same households with the private farms users), the density of population (in persons per sq. km), the number of transactors (business entities) (according to REGON numbers) per 1000 persons, communities' own income per one inhabitant (in PLN zlotys). These features have

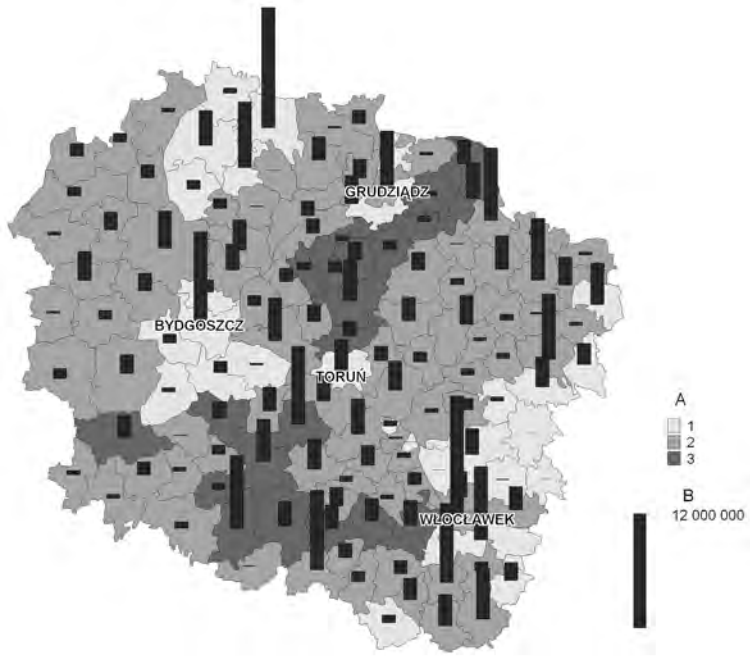


Figure 1. The amount of funds obtained from SAPARD against the background of natural conditions (A – 1–disadvantage conditions, 2–medium conditions, 3–advantage conditions; B – the amount of funds obtained from SAPARD in zl PLN)

Source: The author's own elaboration.

been subjected to standardization and presented in a form of average standardized value, which was the basis for the spatial delimitation of the level of urbanization. This factor has been mostly distinguishable in the communities functionally linked to Bydgoszcz-Toruń agglomeration and the cities with poviat status located in the district city (Grudziądz, Włocławek, Inowrocław, Brodnica, Świecie). The low level of urbanization is mostly characteristic to those rural areas which are located at a substantial distance from the major cities of the region. In the spatial diversity system they are concentrated in the agricultural areas of Kujawskie, Chełmińskie and Dobrzyńskie Lake Districts.

When analysing the spatial diversity in the distribution of the SAPARD funds on the background of the urbanization-related factor, the tendencies opposite to the ones that were discussed in connection with the natural factor are discernible. The relatively greatest support has been obtained by the communities displaying the high level of the urbanization index, that is the wealthier regions, characterized by the more favourable socio-economic

Conditions, and which constitute a little more than 21% of the total number of communities. They have obtained 70.3 million PLN zlotys, that is 26.4% of the total SAP-

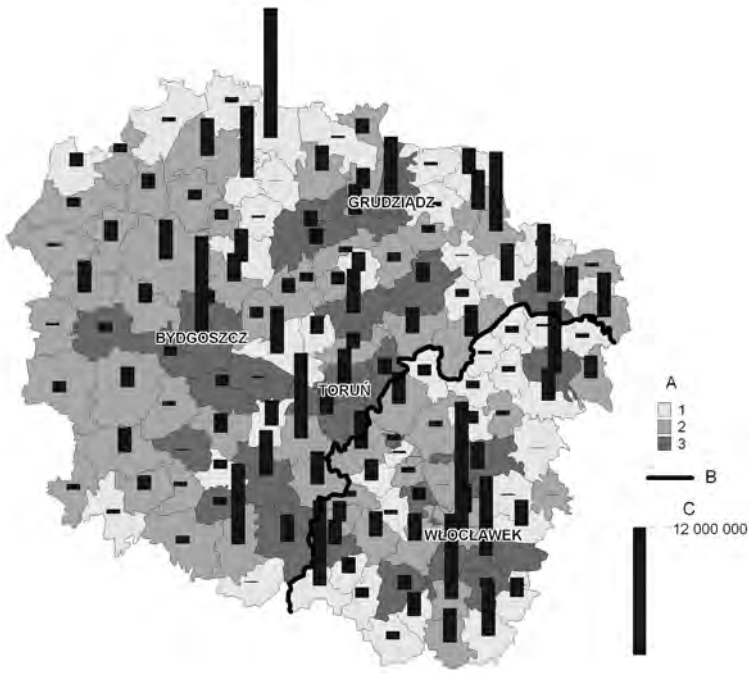


Figure 2. The amount of funds obtained from SAPARD against the background of urbanization (A – 1–low level, 2–medium level, 3–high level) and historical conditions (B – border of annexation – Prussian and Russian); C – the amount of funds obtained from SAPARD in zl PLN

Source: The author's own elaboration.

ARD funds, while the communities characterized by the low level of urbanization have obtained 75,5 million PLN zlotys (28.3% of the total SAPARD funds), though they constitute over 34% of the total of units numbered among the group of low urbanization level communities. Statistically, the communities with a high level of urbanization have obtained 322 PLN zlotys per each unit of agricultural lands, while the communities with the low level of urbanization, less than 207 PLN zlotys. The situation is slightly different per capita, due to the high density of population in the strongly urbanized areas. The communities with a low level of urbanization have obtained 287.5 PLN zlotys per capita, which is over 3.5 times more than the communities with the high level of urbanization (78.3 zł per capita).

In the present analysis, among the factors determining the spatial diversification of the EU funds absorption, the historical factor has been also taken into consideration. It is connected with the diverse historical and economic development of the Kujawsko-Pomorskie voivodship, the south-eastern part of which once belonged to the Russian annexation, and the remaining area to the Prussian annexation. With respect to this, the

communities of the former Russian annexation are characterized by the relatively higher indexes of the support funds absorption. Calculated per 1 ha of the agricultural lands, this index amounted to 285 PLN zlotys (as compared to 210 PLN zlotys in the area of the former Prussian annexation), and per 1 inhabitant, 250 PLN zlotys, and it was twice higher than in the area of the former Prussian annexation (126 zł per capita).

The last of the factors shaping the spatial diversification of EU funds absorption taken into account in the present analysis are the agricultural conditions. To carry out the delimitation, the following diagnostic features have been applied: the average size of the private farms [in ha], staff in terms of large heads in stock per 100 ha of the agricultural lands, the mechanization, industrial crops of the total % of sowed crops. With respect to them, the high level of agriculture development was exhibited in the area of Chełmińskie Lake District, Inowrocław Plain and in the western part of the voivodship.

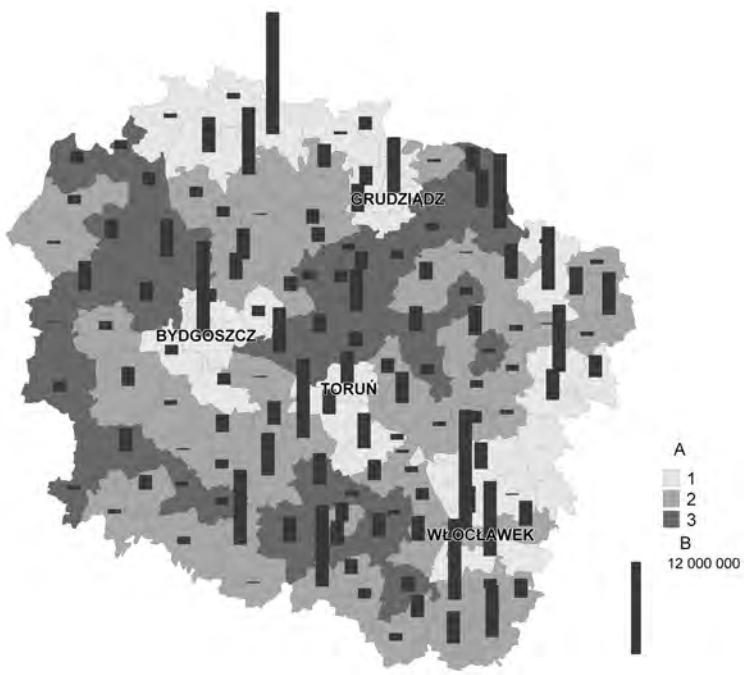


Figure 3. The amount of funds obtained from SAPARD against the background of agrarian conditions (A – 1- low level, 2–medium level, 3–high level; B – the amount of funds obtained from SAPARD in zl PLN)

Source: The author's own elaboration.

The low level of this factor in turn was exhibited in the area of the Dobrzyńskie Lake District, Bory Tucholskie and Toruń Dell. From the point of view of the support for the areas of the unfavourable developmental conditions, the desired effect would be the

higher level of the absorption in the areas of a lower level of agriculture development. This would enable to support their slight economic potential and to simplify the action-taking on the local scale. Such direction of the funds allocation has been confirmed by the conducted analysis. The communities distinguished by the low level of agriculture development exhibit a definitely higher level of the SAPARD funds absorption per 1ha of the agricultural lands (412 PLN zlotys) than the areas distinguished by the high level of agriculture development (156.5 PLN zlotys per 1 ha of the agricultural lands).

THE LEVEL AND THE STRUCTURE OF THE SAPARD FUNDS ABSORPTION CONSIDERING THE BENEFICIARIES OF THE INDIVIDUAL MEASURES

The indicator of the true influence of the factors determining the level of the absorption is the amount obtained by the beneficiaries within the individual SAPARD measures, which, within the limits of Kujawsko-Pomorskie voivodship, is characterized by the strong spatial diversification. What is interesting is the relation between the activity of the beneficiaries in obtaining the EU funds and the conditions that have the greatest influence on the level of absorption within every measure. The analysis formulated in this way has been carried out considering the directions of EU funds distribution as broken down into the individual measures, and the influx of the determinant factors on the amount of funds obtained by the beneficiaries within each measure.

The amount of money distributed so far in the Kujawsko-Pomorskie voivodship from the SAPARD programme is nearly 270 million PLN zlotys (according to the data from the Agency for Restructuring and Modernization of Agriculture – ARiMR – in Toruń, the state for march 2005), which gives 234 PLN zlotys per 1 ha of the agricultural lands and 157 PLN zlotys per capita. However, these indexes are characterized by the substantial spatial diversification considering the individual conditions. From the point of view of the statistics, calculated per 1 ha of the agricultural lands, the communities distinguished by the relatively higher level of absorption are those with the unfavourable natural conditions (382.7 PLN zlotys) and agricultural (412.1 PLN zlotys), situated on the areas of the former

Russian annexation (285 PLN zlotys), and exhibiting a high level of urbanization (322.4 PLN zlotys). The figures are slightly different, among others due to the high density of the urbanized areas, when calculated per capita. Though here the predominance of the former Russian annexation areas has also been revealed (250 PLN zlotys), still, considering the natural (289 PLN zlotys) and agricultural (229 PLN zlotys) conditions, the higher level of absorption by the areas distinguished by the more favourable conditions is discernible, and in case of the urbanization factor, the areas characterized by the low level of urbanization (288 PLN zlotys).

The greatest share in distribution of the SAPARD funds has the measure I, to which falls 40.8% (108.8 million PLN zlotys) of the total assistance. This operation was aimed to improve the processing and marketing of the farm and fish products, and its beneficiaries were the entrepreneurs as well as the groups of the farm producers and their unions. Thus on average, every institution from the agricultural sector obtains nearly 16.8 thousand PLN zlotys. The strongest influence on the diversification of the amount of the

Table 1. The index of the SAPARD funds absorption

Determinants		Measures absorption							
		mln zl	average value of province =100	zl per 1 ha UR	average value of province =100	zl per 1 person	average value of province =100	Total SAPARD/ total beneficiaries	average value of province =100
Historical	1–prussian annexation	160.6	60.2	209.6	89.5	125.7	80.2	2074.0	95.9
	2–russian annexation	106.2	39.8	285.0	121.6	250.1	159.5	2310.1	106.9
Nature	1–disadventage conditions	62.1	23.3	382.7	163.4	84.2	53.7	2717.9	125.7
	2–medium conditions	155.8	58.4	209.2	89.3	196.1	125.1	1941.1	89.8
	3–adventage conditions	48.9	18.3	210.9	90.0	288.5	184.0	2409.5	111.4
Urbanization	1–low level	75.5	28.3	206.7	88.2	287.5	183.4	1942.7	89.9
	2–medium level	121.0	45.4	217.8	93.0	223.5	142.5	2246.0	103.9
	3–high level	70.3	26.4	322.4	137.6	78.3	50.0	2292.1	106.0
Agrarian	1–low level	78.0	29.3	412.1	175.9	89.0	56.8	2634.6	121.9
	2–medium level	125.3	46.9	230.3	98.3	228.7	145.9	2072.7	95.9
	3–high level	63.5	23.8	156.5	66.8	229.1	146.1	1903.9	88.1
Total voivodship		266.8	100.0	234.3	100.0	156.8	100.0	2162.0	100.0

Source: The author's own elaboration on the basis of data from ARiMR in Toruń.

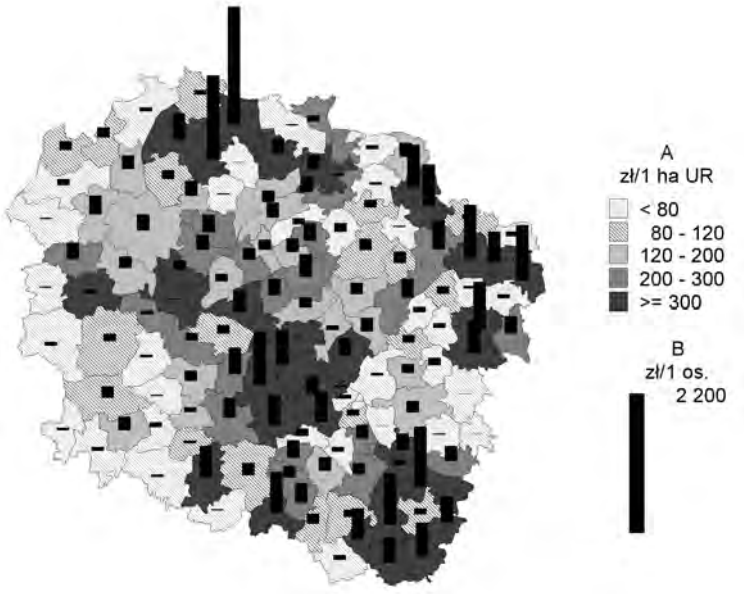


Figure 4. The amount of SAPARD funds (in PLN zlotys) calculated per: 1 ha agricultural land (A), 1 inhabitant (B)

Source: The author's own elaboration.

obtained funds is exhibited by the natural and agricultural conditions. Statistically, to every enterprise run in the areas characterized by the unfavourable natural conditions falls 31.2 thousand PLN zlotys and it is 2.5 times more than in the areas characterized by the favourable conditions (12.4 thousand PLN zlotys). This diversification is even more prominent when considering the agricultural factor. This ratio is nearly 4.5 to the advantage of the entities located in the areas characterized by the adverse conditions. The urbanization factor is of the relatively slightest influence with the figures in all sections were very similar and amounted to 16-17 thousand PLN zlotys.

Measure II co-financed the investments in private farms, and the individual farmers benefited from it. The amount of the international assistance allocated to this operation exceeded 59.1 million PLN zlotys, which constituted 22.2% of the total SAPARD funds. Calculated per 1 private farm, it gives 506 PLN zlotys. However, it should be remembered that as little as 1.75% farmers (every 57 private farms) have filed the application for the SAPARD assistance. As in measure I, the natural and agricultural conditions become prominent in this case. However, one can discern the change in the direction of the determining factors' influence. The greater concentration of the assistance funds is to be observed in the areas distinguished by the more favourable conditions. In case of the agricultural factor, the private farm from the area distinguished by favourable conditions has obtained on average nearly a three-times greater support (721 PLN zlotys) than the private farm from the area distinguished by unfavourable conditions (255 PLN zlotys).

Table 2. Level and determinants of the SAPARD fund absorption as broken into individual measures

Determinants		SAPARD – total	Measure I		Measure II		Measure III		Measure IV	
		mln zł	mln zł	%	mln zł	%	mln zł	%	mln zł	%
Historical	1	160.6	63.7	39.6	36.0	22.4	40.2	25.0	20.8	12.9
	2	106.2	45.2	42.5	23.2	21.8	29.2	27.5	8.7	8.2
Nature	1	62.1	37.3	60.0	2.7	4.3	15.2	24.5	7.0	11.2
	2	155.8	54.1	34.7	38.5	24.7	46.2	29.7	17.1	11.0
	3	48.9	17.5	35.8	18.0	36.8	8.0	16.3	5.4	11.1
Urbanization	1	75.5	28.1	37.3	13.2	17.5	28.9	38.3	5.3	7.0
	2	121.0	44.7	37.0	27.9	23.0	36.1	29.8	12.3	10.2
	3	70.3	35.9	51.1	18.1	25.7	4.4	6.2	11.9	17.0
Agrarian	1	78.0	47.0	60.3	7.1	9.2	14.0	17.9	9.9	12.7
	2	125.3	47.2	37.7	29.5	23.5	37.2	29.7	11.4	9.1
	3	63.5	14.6	23.0	22.5	35.4	18.2	28.7	8.2	12.9
Total voivodship		266.8	108.8	40.8	59.1	22.2	69.4	26.0	29.5	11.1

Source: The author's own elaboration on the basis of data from ARiMR in Toruń.

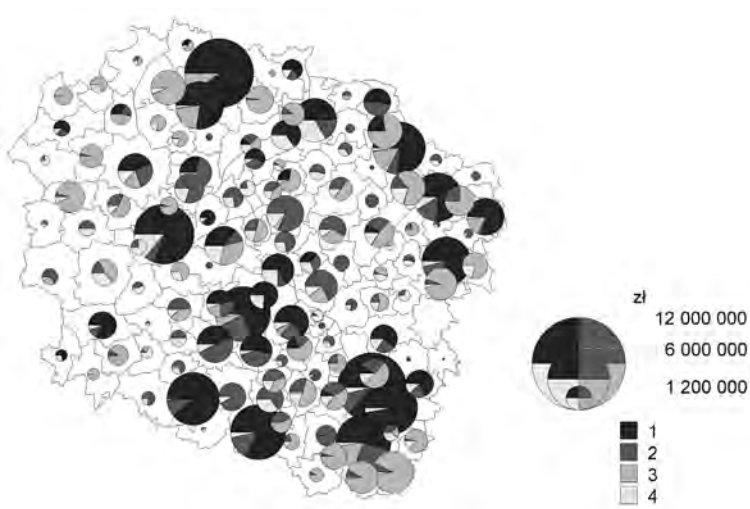


Figure 5. The amount and structure of funds obtained from SAPARD as broken into individual measures (1 – Measure I; 2 – Measure II, 3 – Measure III, 4 – Measure IV)

Source: The author's own elaboration.

Table 3. The indexes of the SAPARD funds absorption as broken into individual measures

Determinants		Measures absorption											
		Measure I			Measure II			Measure III			Measure IV		
		zl per 1 ha UR	zl per 1 person	zl/entities of the national economy	zl per 1 ha UR	zl per 1 person	zl/private farm	zl per 1 ha UR	zl per 1 person	zl/local government units	zl per 1 ha UR	zl per 1 person	zl/total beneficiaries
Historical	1	83.1	49.8	13548.3	46.9	28.1	494.8	52.5	31.5	484517.5	27.1	16.3	268.4
	2	121.2	106.3	25254.3	62.2	54.5	524.8	78.3	68.7	583675.7	23.3	20.5	189.3
Nature	1	229.6	50.5	31245.4	16.4	3.6	122.8	93.9	20.7	564298.0	42.9	9.4	304.3
	2	72.6	68.0	13903.8	51.6	48.4	504.1	62.0	58.1	543598.8	22.9	21.5	212.9
	3	75.5	103.2	12435.7	77.7	106.2	954.3	34.3	47.0	378894.7	23.5	32.1	268.2
Urbanization	1	77.1	107.1	17311.5	36.1	50.2	354.3	79.2	110.1	628608.9	14.4	20.0	135.4
	2	80.5	82.6	16209.2	50.2	51.5	545.9	65.0	66.7	612090.8	22.1	22.7	228.3
	3	164.9	40.0	17102.6	82.8	20.1	632.8	20.0	4.9	156048.9	54.7	13.3	388.8
Agrarian	1	248.4	53.6	30783.0	37.7	8.1	254.7	73.7	15.9	450118.1	52.3	11.3	334.5
	2	86.8	86.2	16555.8	54.2	53.8	512.5	68.4	67.9	581542.9	20.9	20.8	188.1
	3	35.9	52.6	6917.1	55.4	81.1	720.6	44.9	65.8	479640.3	20.2	29.6	246.1
Total voivodship		95.5	63.9	16774.8	51.9	34.7	506.1	60.9	40.8	521795.0	25.9	17.3	238.9

Source: The author's own elaboration.

The difference is definitely much more prominent with reference to natural factor. The ratio of the funds obtained by the farmers running their business in the areas distinguished by the great natural potential (954 PLN zlotys) to the areas distinguished by the unfavourable natural potential (123 PLN zł) is nearly 8:1. In case of the above determining factors one can observe the discrepancy between the directions of funds allocation and the basic assumptions of the assistance programmes (among others, the support for the areas distinguished by the unfavourable developmental conditions). Although the two remaining factors did not reveal such prominent influence on the operation, they still confirm the tendency that the greater activity in obtaining funds by the beneficiaries can be observed in the areas characterized by the more favourable conditions.

Measure III, due to of the projects carried out form its funds (costly infrastructure investments) and to a group of beneficiaries to which were its target (small number of the local government units), is characterized by the highest amount of financial support per a beneficiary (over 52 thousand PLN zlotys). This operation is distinguished by a great prominence of the urbanization factor. It is confirmed by the four-times higher level of the absorption in the least urbanized areas (62.9 thousand PLN zlotys) as compared to the communities distinguished by a high level of urbanization (15.6 thousand PLN zlotys). The influence of the remaining factors on the spatial diversification of the obtained funds is not very big, though there is a tendency for the areas distinguished by less favourable conditions to obtain slightly greater support. Such tendency corresponds to the basic assumptions of the SAPARD programme and it contributes to the equalization of the differences between the individual local governments units in the region.

The last measure, from which all beneficiaries of the previous measures could profit, is characterized by a tendency to obtain greater support by the entities located in the areas distinguished by the less favourable conditions. Considering the total of the potential beneficiaries, to each of them falls the amount of 239 PLN zlotys. All the determining factors are characterized by similar relations and influence on the amount of the funds obtained within this measure by the beneficiaries. The high activity in obtaining funds by the local entities from the areas distinguished by the less favourable conditions has been recorded mostly on the group of natural and agricultural factors, and in case of the historical and urbanization-related factors, the entities from the more urbanized areas and from the former Prussian Annexation areas turned out to be more active.

Summing up the distribution of the total of the SAPARD funds among the beneficiaries from the area of the voivodship in question, it has to be concluded that the relatively higher activity in the absorption was observed with reference to the entities from the areas distinguished by the less favourable conditions. This regards the historical, natural and agricultural conditions. It was only in case of the urbanization factor that the entities from the more urbanized areas turned out to be more efficient. Such directions of distribution of the financial support from the SAPARD programme can have the influence on the increase in the development level of the areas characterized by the lower developmental potential, and contribute to the decrease in the civilization distance by the less-developed units.

FINAL REMARKS

The conducted analysis has shown a strong spatial diversification of the level of the EU funds absorption and the factors determining the amount of the financial support provided to the individual beneficiaries from the SAPARD programme. It has been assumed that the level of the absorption and the activity of the local entities in obtaining the SAPARD funds depend in a great degree on the influence of the factors determining the diversification of the potential of the individual units. Such conditions are undoubtedly much more complex than the ones employed in the analysis conducted for the purposes of the present article. It is confirmed by the fact that the high activity in obtaining EU funds was exhibited by both the areas distinguished by the favourable and unfavourable natural, agricultural, historical or urban development-related factors. This fact confirms the necessity of carrying on with the research aiming to identify the factors determining the process of EU funds absorption. The level of the absorption can also be influenced by such factors as the proper training of the office workers, local governments and the other institutions, in providing assistance to the potential beneficiaries in formal-legal cases related to the proper form filling and filing the indispensable documents. Moreover, the great role in the proper use of the EU funds should be performed by various local support institutions such as the centres for agriculture advising, cooperative banks or the non-governmental organizations. Recently, the substantial growth in the activity of these institutions can be observed with reference to the preparation for the EU funds absorption. In the light of the planned changes in the EU policy towards the rural areas after 2006, institutional preparation is tremendously important, in particular with reference to the activation of the local communities. An important role will be played here by various organizations of the civic society in the rural areas. From the various analyses conducted by various institutions it follows that the Kujawsko-Pomorskie voivodship is particularly well-equipped institutionally (*Polska wieś...* 2004). It allows thus to hope that the region will be well-prepared to utilise the structural funds, owing to which the potential beneficiaries should have no serious procedural problems when applying for the assistance funds already within The Sectoral Operational Programme 'Restructuring and Modernisation of the Food Sector and Rural Development' or the Development Plan of Rural Areas.

REFERENCES

Racine, J.B., Raymond, *H.* (1977) *Analiza ilościowa w geografii*, PNW, Warszawa.

Polska wieś po wejściu do Unii Europejskiej (2004) Fundacja na Rzecz Rozwoju Polskiego Rolnictwa, Warszawa.

Janus-Hibner, M., Pastusiak, R. (2004) *Programy pomocowe w Polsce*, Wyd. CeDeWu, Warszawa.

SAPARD, Program operacyjny dla Polski (1999) Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa.