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Rural space in Slovakia: changes of spatial structures and spatial behavioural patterns

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Abstract

The changes of rural space in Slovakia have accelerated in recent years. New utilisation of rural space, together with structural changes create new relationships and preconditions for future developmental trajectories. The overall transformation process of Slovakia has a significant impact on the shaping of regional structures. The paper looks first at the geographical conditions, specifically the economic, socio-cultural and environmental, including local conditions as the vital factor underlying the course of transformation processes. Next, the paper considers results of case study (in Lom nad Rimavicou, the village in Slovenské rudohorie Mts.) based on the time-geographical framework that enables to study an individual's everyday activities. The time-geographical approach applied in two periods (1986 and 1997) focuses on individuals and investigates how they performed activities under the different conditions (socialist and post-socialist). Finally, the paper ends on note by considering the most important challenges for rural areas in Slovakia.

Key words: rural change, Slovakia, spatial behaviour, spatial structures

Introduction

The overall transformation process in Slovakia has a significant impact on the shaping of regional structures. The changes of rural space in Slovakia have accelerated in recent years. They are diversifying as a result of broader socio-economic factors, and political transformation, and societal modernisation. Rural areas are no longer dominated by the agricultural sector. Agriculture is being restructured. Non-productive functions of rural space are of growing importance. Local socio-economic changes become part of the global processes of restructuring. The increasing mobility of people, goods and information has enabled rural areas to be utilised in new ways.

Many of these changes have coincided with massive reduction in the influence of the state upon rural lifestyles. Such deregulation has been accompanied by privatisation. Economic and social changes in rural areas have caused increased pressure on human and natural resources. Regulations are becoming very important in relation to environmental conservation and sustainability (Ilbery 1998). Different initiatives are introduced to protect rural space and its components (cultural heritage conservation, wildlife and biodiversity protection, air and water pollution prevention, soil erosion prevention, etc.) and to implement the concept of sustainable development (Bossel 1998).

The aim of this paper is to look at the geographical conditions (specifically the economic, socio-cultural, environmental, including local conditions) as the vital factor underlying the course of transformation processes and to analyse results of the time-geographical approach applied in two surveys (1986 and 1997), focusing on individuals and investigating how they performed activities under the different conditions (socialist and post-socialist).

Social, cultural, and economic changes of rural space

Four decades of communism (1948–1989) was a period of one of the modernisation alternatives of the 20th century. The process of modernisation was characterised by industrialisation, centralisation, urbanisation, and increasing role of education and specialisation, and changing social and professional structures of the population. This has marginalized the position of rural areas within the modern industrial state. These processes caused changes in the life of rural society, which are deep and irreversible, and continuous (Podoba 1999).

After the World War II, depopulation of the agricultural and more remote rural regions escalated to such an extent that outmigration was often accompanied by natural population decrease. Predominantly, economic factors could be regarded as the cause of decline (employment in industry and later in services, new housing, developed social and technical infrastructure).

Four decades of changes in agriculture (esp. collectivisation) and industrialisation in Slovakia also had their socio-cultural and economic consequences. The building up of new urban centres, new jobs and new housing attracted the rural population and caused migration from the traditional rural settlements. Between 1970–2001, the rural population decreased by 0.5 million inhabitants, and its percentage dropped from 63.8% to 44.0%. The statistical data from the 2001 census show that only in few districts the percentage of rural population was significant (Fig. 1).

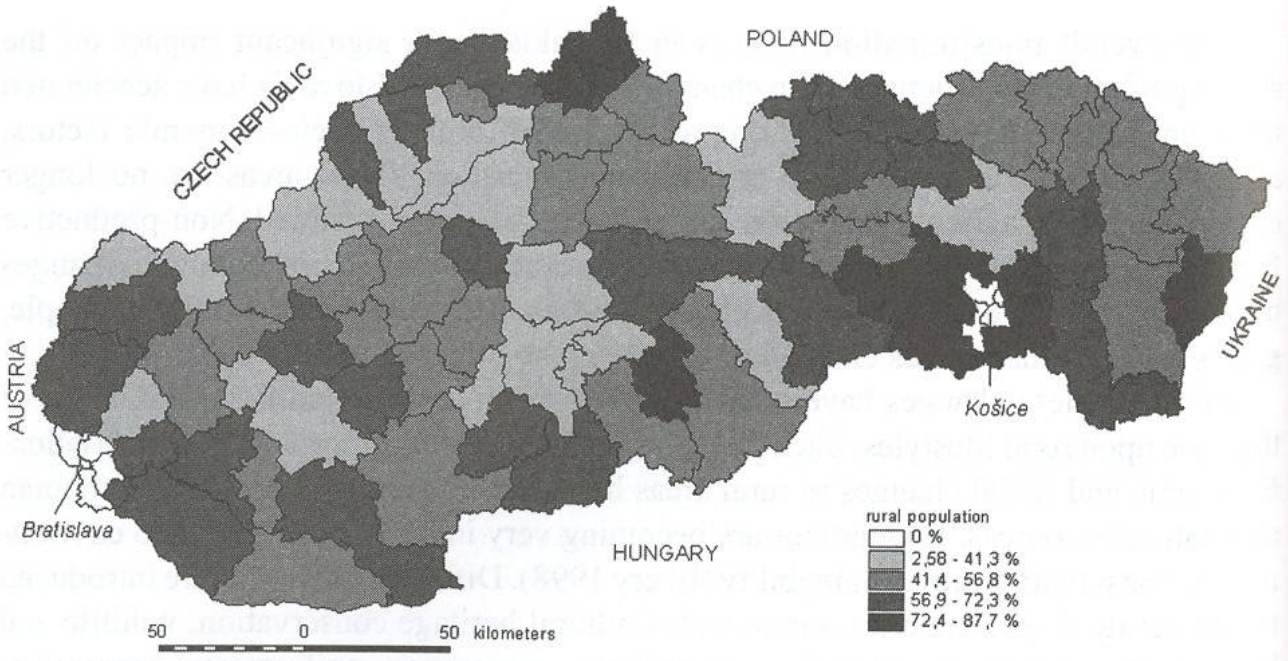

Fig. 1 Share of the rural population in total population (2001)

Concentration and centralisation of practically all areas of life (economy, public administration, job opportunities, housing, etc.) led to a decrease of importance of rural settlement. The process of concentration slowed down and practically stopped in some places after 1989. An intense depopulation process changed the population structure in source rural areas with an effect on the development of demographic indices and processes in the whole country Process of demographic ageing of the population was manifested in the 1970s in the whole population of Slovakia. Ageing in rural settlements was quicker than the national mean due to the emigration of the younger population groups (Podolák 1999).

From the 1980s onward, the process of outward movement from cities to the surrounding countryside accelerated and corresponded with an increase of environmental pollution, efficient public transport, and a rising rate of private car ownership. The availability of relatively cheap housing and the socio-economic character of the villages have become significant factors in the suburbanisation of recent years.

Agriculture substituted for the social role of the state to a significant extent. This situation significantly changed after 1989, and the process of decreasing employment in agrarian sector accelerated. Since 1989, the employment in agriculture decreased by 188.8 thousand persons. In 2001, there were only two fifths of those who were employed in the agriculture in 1989. The rate of employment in agriculture exceeded 10% before 1994, and in 2001 it was only 5.9% (Tab. 1). Relative employment per 100 hectare of agricultural land dropped from 14.7 %. in 1989 to 4.7 % in 2000. In 1989 the rate of those employed in agriculture to the total population was 1 : 14.4, and increased to 1:46.9 after 11 years. Apart from the above mentioned changes, the decreasing rate of the female population employed in agriculture is evident. The notion of agricultural unemployment appeared in Slovakia together with the political changes after 1989.

Tab. 1 Share of employed in agriculture

Year	*1990*	*1992*	*1994*	*1996*	*1998*	*2001*
employed in agriculture (in %)	12.0	11.8	10.2	9.0	7.7	5.9

Source: Statistical Office of the Slovak Republic, 2002

During the 1990's, significant changes have taken place in public transport. Gradually the number of bus and railway lines (connections) has been reduced. As a consequence, the rural areas (especially in marginal regions) have been affected. In spite of the increasing role of individual transportation, the role of public transport in rural areas continues to be of significant importance.

Changes in the agriculture and land-utilisation

Agriculture has undergone substantial restructuring in the post-war period. After 1948, two major phases of change can be identified.

The 'collectivistic-productivistic' phase, where the emphasis was placed on collectivisation of agricultural activities and on raising output. This phase lasted from

1950's to the late 1980's, and was characterised by concentration, modernisation and industrialisation of agriculture. The above described processes were accompanied by negligence of natural conditions in the whole area of agricultural production that inevitably led to the deterioration of ecological stability, aesthetic properties and, eventually, to the deterioration of production potential of agricultural and forested land (Spišiak 1999). Continuous increase of energetic inputs into process of production exceeded the thresholds of carrying capacity of ecosystems and caused unsatisfactory efficiency of these inputs as well as degradation of the environment.

The transitional phase ('post collectivistic' and 'post-productivistic' transition) is characterised by re-privatisation (restitution of ownership of agricultural land), deconcentration (decentralisation and disintegration of co-operative farms), reduction farm output (decrease of agricultural production as a result of reduction of governmental subsidies, reduction in the use of fertilisers and heavy agricultural machinery, etc.), and integration of agriculture within broader rural economic, and environmental objectives (implementation of new ecological approaches in agriculture in respect to implementation of new environmental and other relevant legislation).

The transformation process of the agricultural units since 1989 has been greatly influenced by the overall economic decline. The agricultural sector faced a severe recession of the national economy since 1990, implying increases in employment and inflation tares, declining consumer incomes and rising agricultural imports from Western countries. The sector is still depressed by low output prices, a weak position with respect to other sectors, and with little access to credit (Wolz et al. 1998).

A dualistic farm size pattern emerged out of the transformation process. On the one side, a rapid increase in the number of private farmers managing very small farms (especially in the first period of transformation) was observed. On the other side, a strong persistence of large scale agriculture has become evident (tab 2). Despite legislative and political pressure, disintegration of large-scale production units did not continue in such speed and dimension that was expected in general. The importance of 'family farms' (West-European model) did not grow significantly, agriculture still dominates co-operative farms on land of coop members or rented land. This is because of a combination of several factors that may be divided into three main groups: legislative conditions, economic conditions, and human factor (Švoňavec 1999).

Tab. 2 Transformation of the organisation in agricultural production in Slovakia (1989–2001)

1989 (at the end of socialist period)	**1992** (after first period of transformation)	**2001** (recent situation)
630 (socialist) agricultural production co-operatives	952 transformed co-operatives	722 co-operatives
68 state farms	104 state farms	57 state farms
approximately 1,000 private farms	8,727 private farms	70,209 private farms

Source: Statistical Office of the Slovak Republic 2002, Wolz et al. 1998

Basic structures of agriculture land did not change significantly in the last decade (Tab. 3). The agriculture land covered 2439 thousands hectares in 2001 and the portion

of arable land is almost 60%. The decline of total area of arable land characterised the whole period of the 1990s, falling from 1510 thousands hectares in 1990 to 1441 hectares in 2001. The most significant annual decline was in the late 1990s. On the other hand, the total area of permanent grasslands grew from 808 thousands hectares in 1990 to 874 thousands hectares in 2001. The decline of the total area of arable land was caused mostly by forestation, civil and housing development, construction for waterworks, and other investments. Share of other cultures is slightly above 5% of agricultural area. While the share of hop-grounds significantly decreases, area of gardens and orchards is relatively stable. Thanks to expected revitalisation of construction sector and favourable environment for investments, it is possible to anticipate the pressure leading to the reduction of agriculture land in the future.

Tab. 3 Land-use structure (in thousands hectares)

Year	1990	1992	1994	1996	1998	2001
Agricultural land	2,448	2,447	2,446	2,440	2,444	2,439
Arable land	1,509	1,486	1,483	1,475	1,469	1,441
Permanent grass area	808	832	835	842	848	874
Hopyard	2	1	1	1	1	1
Vineyards	31	31	30	29	28	27
Gardens	78	78	78	78	78	77
Orchards	20	19	19	19	19	18
Non-agricultural land	2,455	2,456	2,458	2,459	2,460	2,464
Forest areas	1,989	1,990	1,992	1,993	1,998	2,002
Water areas	94	94	94	93	93	93

Source: Statistical Office of the Slovak Republic, 1995, 1997, 2001, 2002

Environmental changes

The decline of production (especially highly consumptive production) has been favourably reflected in the environmental situation. Air pollution has been rapidly decreasing. Solid emissions dropped from 317.7 thousands tons in 1989 to 61.2 thousands in 1999. In the same period a reduction of carbon monoxide, nitrogen oxides, and sulphur dioxide emissions has been recorded.

Ground waters are affected by human activity practically throughout the entire territory of Slovakia, with the exception of less industrialised regions and areas unsuitable for agriculture

In the agricultural landscape, the use of industrial fertilisers (NPK, expressed in kilograms of pure nutrients per hectare) has shown considerable decline in the years immediately following 1989 (from 239.7 kilograms in 1989/90 to 41.6 in 1992/93). Since 1993/94 the fertilisers consumption per hectare of agriculture land is relatively stabilised. Soil degradation is growing due to stronger degradation processes. At present, 40% of soils are affected by degradation caused by water erosion.

The quality of the environmental infrastructure has improved. The percentage of the population supplied with drinking water (76.3% in 1991 and 83.4% in 2001), and the percentage of the population connected to public sewage (51.2% in 1991 and 55.2% in 2001) has improved slightly. The number of sewage disposal plants increase from 181 in 1991 to 346 in 2001.

The role of communities is becoming increasingly important in Slovakia. The renaissance of elected self-governments after the elections in 1990 brought many positive changes. NGOs, particularly environmental NGOs (e.g. Slovak Union of Nature and Landscape Protectors, Greenpeace Slovakia, Society for Sustainable Living, The River Váh Union, WOLF Forest Protection Movement, SOSNA – Centre for Sustainable Alternatives, DAPHNE – Centre for Applied Ecology, Water and Life, Friends of the Earth Slovakia, ETP Slovakia, REC), played an important role in the activities oriented towards sustainable development. Many of them were initiators (in some localities with support of the private sector) of various projects run by self-governments in rural communities.

As far as the state budget is concerned, the situation in the environment is not favourable. State budget subsidies allocated to the State Fund for Environment have long been in decline (Huba and Trubíniová, 2002).

After political changes, stricter environmental policies became necessary on account of the deterioration of the environment and its cost in terms of quality of life. A more sustainable approach to environmental management has been evident since the Rio Conference and its Agenda 21 which brought response in Slovakia through the national environmental policy of 1993, recognising the need for environmental policy to prevent further damage, enhance biodiversity, improve public health and safeguard resources for future generations (Drgoòa and Turnock, 2002). In 1996 the Ministry of Environment has prepared the National Environmental Action Programme and strategy for application of Agenda 21 at regional and district level. Within project 'Capacity Building for Sustainable Development in the Slovak Republic' (implemented by the Regional Environmental Centre for the Central and Eastern Europe) realised during 1999–2001 with financial support of UNDP, the Slovak Republic's Ministry of the Environment provided the guarantee for the preparation of National Strategy of Sustainable development in the Slovak Republic. This document specifically focused at possibilities for harmonizing the economic, social and environmental aspects of development and specified the requirements and needs for the institutional safeguarding of these aspects.

Development, regional differentiation and marginalisation

The overall transformation process of Slovakia had a significant impact on the shaping of regional structures. The differentiation of economic-, social- and cultural-geographical conditions is the vital factor underlying the course of transformation process. The basic factors in the geographical differentiation of Slovakia are: the settlement hierarchization and locational attractiveness (the dominance of the capital Bratislava). 'Western neighbourhood' of Austria and Czechia, and regional economic specialisation – structure of the economic basis (Tomeš and Hampl, 1999).

Socio-economically marginal territories represent a certain kind of spatial social, economic and cultural differentiation, or spatio-social polarisation of the society. The marginalisation has a similar impact on both economic, social, cultural aspects of life, as well as on the character of the environment (e.g. abandonment of settlements and agricultural land, degradation of soils, etc.). There are areas which have been shifted to the margin of the social and economic development. In marginal regions, the social cost of transformation has increased considerably. The marginality is rooted in the previous period of industrialisation and urbanisation. Economic transformation was accompanied by conversion of industries and the decline of heavy industry and the construction industry. The restructuring of agriculture caused a decrease in employment in the agricultural sector. These and other aspects of transformation contributed to the socio-economic marginality especially in rural areas (Ira and Huba 1999). The marginalisation that has taken place with socio-economic transformation has created large compact areas within marginal territories in borderland regions in the northern, eastern, and southern regions of Slovakia. Some regions are located in central part of Slovakia. In these economically and socially marginalised areas the problems emerged not only in the social life, but also in the socio-technological structure, and in environmental modernisation (Falťan et al. 1995).

The characteristics of marginal regions are reinforced by the quality of human capital available, and by poor infrastructure. Marginalised areas show low potential for business activities and low inflow of capital and investments (Radičová 2001). Most of marginal areas are inhabited by Roma population living in unsuitable, substandard buildings in villages. The greatest problems of the most Romany settlements is their inadequate infrastructure, including poor quality drinking water (32 settlements are without drinking water), poor or non-existing roads (55), inadequate housing, no public lightning (104), sewers, gas, mains, sanitary installations, shops post offices, schools etc. (Vašečka 2002).

In the marginal regions numerous economic, socio-pathological, civilisation, and infrastructural problems are concentrated in rural settlements. Sociological surveys conducted in two marginal rural areas (Falťan et al. 1995) identified major problems – lack of finances for village, unemployment/lack of jobs as well as lack of information about available jobs in villages and neighbourhoods, indistinct perspective of agriculture, critical situation in the infrastructure and in the environment (problems concerning communal waste, insufficiently developed technical infrastructure, problems concerning drinking water supply, insufficient shop and service facilities, insufficient condition for cultural and social life, and insufficient provision of health and social services).

The analyses of results from behavioural-geographical survey (based on structured interviews with mayors and decision and opinion makers) conducted in the marginal area of the Eastern Carpathians (Huba and Ira 2000) showed that the most important problems connected with the implementation of economically, socially and environmentally balanced developmental programmes in rural communities are: lack of developmental programmes and activities, lack of subsidies from state funds, lack of capital investments, lack of advantageous credits, inadequate sharing fees, lack of public drainage and/or sewage disposal plants/waste water treatment, lack of jobs,

lack of recreation/leisure facilities, unfavourable demographic structure of population, historical /cultural sites safeguarding, damaging forest management practices, waste disposal, water quality, inadequate agricultural land-use, and nature protection.

Everyday life activities of rural population in time-space and their changes (the case of village Lom nad Rimavicou, Central Slovakia)

The individual persons, their activities and projects are meaningfully related to each other. They are parts of broader socio-cultural and political contexts, which may be identified in time and space. The purpose of this case study was to show how the method based in the time-geographical framework, suitable for empirical studies of individual's everyday life activities could be applied in the analysis of broader changes in rural environment. Research of the time-space activity budgets have been used to investigate human behaviour and activities that may occur in time and space. It was based on systematic record of the person's use time over given period including the spatial coordinates of activity locations. The study was modelled after concept of household (individual's) activity patterns and included diary day and post-diary interview as the method of data collection (Golledge and Stimson 1990)

We chose the method of diary as it reliably supplies information for disaggregated analysis. The individual respondents (diary writers) were asked to write in what time, where and what activity was performed. Data collection was done in two periods: in May 1986 and in June 1997. The basic set consisted of 366 (82,4% of total population) of inhabitants of Lom nad Rimavicou, mountainous village in central Slovakia in 1986 and 258 (74,6% of total population) in 1997. Respondents were individuals older than 6 years.

Lom nad Rimavicou is one of the villages located in the higher part of Slovenské rudohorie Mts. (1017 m). The increasing depopulation caused that the number of inhabitants is declining (885 in 1970, 587 in 1980, 444 in 1986, 366 in 1991 and 346 in 1997. The rate of unemployment in the region in 1986 was 0 and after political, economic and social changes (July 1997) increased to 11,87%. The increasing significance of manufacturing and services on the one hand, and the declining significance of agriculture in terms of employment are the main features of recent period. The analysis of the 1991 census showed that 61,8% of economically active population is employed outside the village (mostly in the neighbour villages and industrial centres (Brezno, Hriňová, Podbrezová).

Individuals performing activities in their everyday life participate in the creation of various contexts. In our study we put special emphasis on geographical context (where are everyday activities performed, which activities are bound to be performed at certain places, how, when and for how long do individuals move between places, what is the reason for moving). The analysis shows the absolutely dominating central role of the dwelling, the work place and the place of education. Inspite of the worsening economic situation and fact that some bus lines have been cancelled, population's mobility was higher in 1997. Number of trips linked to activities, as well as number of stations (places of activities) has increased (tab. 4).

Tab. 4 Number of stations linked to performed activities

Number of stations (places of activities)	Male		Female		Population studied		% of population studied	
	1986	*1997*	*1986*	*1997*	*1986*	*1997*	*1986*	*1997*
1	11	4	23	8	34	12	9.3	4.7
2	78	22	50	28	128	50	35.0	19.4
3	72	57	65	58	137	115	37.4	44.6
4	23	40	33	26	56	66	15.3	25.6
5	4	9	7	6	11	15	3.0	5.8

Work, education, shopping, works on own plots, and participation in church life were the most important activities influencing spatial behaviour in both surveys. The importance of stationary activities that generate intra- and inter-settlement movement (travel) during a day have changed (tab. 5). Shopping played more important role in the time-use and spatial behaviour (especially among male population) in 1997 (55%) than in 1986 (25%), Analysis of sport activities, recreation activities and consumption of services shows similar trend. Participation in church life (Catholic church) played the same role in both periods. Works on own plots were, and still are one of the essential time-consuming and movement generating activities in this mountainous part of Slovakia.

Tab. 5 Importance of activities in time-use

Activity	time (min.) /day and person		% of population studied	
	1986	*1997*	*1986*	*1997*
Work	536	494	57.4	39.5
School	417	391	13.7	9.3
Shopping	28	28	35.2	69.4
Services	35	62	1.9	3.5
Work on plot	103	150	44.3	59.3
Church life	60	60	6.6	6.6
Hobby	149	91	1.1	5.8
Sport	69	83	4.9	11.6
Recreation	0	67	0	3.1

Conclusion

Rural space in Slovakia experiences continuous transformation in its spatial structures and behavioural patterns. Many of these transformations are associated with the decreasing influence of agricultural (and in many cases industrial) interests in rural places. Dynamic nature of political, economic and social transformation in rural areas in 1990s brought the following changes:

- the increasing depopulation of marginal regions, and at the same time, return to the countryside in certain regions,

- the gentrification of significant portion of rural space,
- the declining significance of agriculture in terms of employment and the relative importance of food production,
- the increasing significance of employment in manufacturing and service industries
- the changing organisation of agricultural production,
- exclusion and marginalisation of certain groups (the original old population, permanently unemployed, and Romany population),
- the afforestation of agricultural land,
- the improving environmental quality,
- the changing values and perception of environment,
- the increasing marginalisation of many rural areas,
- the declining significance of public transport,
- the increase of deregulation and privatisation,
- increasing environmental and sustainable development concerns,
- emerging of new family economy strategies in avoiding negative social impacts of the current transition period (which include a combination of traditional and "socialist" phenomena).

The results of the time-geographical survey in Lom nad Rimavicou (conducted in 1986 and 1997) showed how the increasing depopulation, the declining significance of agriculture in terms of employment, the increasing rate of unemployment, the increasing marginalisation, the declining significance of public transport, introduction of new family economy strategies in order to avoid negative social impacts of the current transition period, and the changing values and perception of current situation are reflected in the changes of time-use and spatial behaviour of local population.

New political, social and economic conditions force decision-makers to make a great effort in the area of economically, socially and environmentally balanced, i.e. sustainable development of rural space. For rural areas in Slovakia a range of efficient initiatives should be taken. More investigation is needed to document the spatial manifestation of transformation processes. At the same time we have to evaluate how the most important challenges for rural areas in Slovakia (Ira 2001), such as restructuring of the local/micro-regional economy, balance between the population situation and natural resources utilisation, reduction of the threat of growing unemployment and poverty, elimination of negative impact of depopulation and ageing, more efficient and environmentally friendly use of social and technical infrastructures, changes in consumption patterns leading to improved quality of life, improvement of regional policy to help reduce the gap between the rich and the poor /marginal regions, are or are not reflected in more sensitive decision-making with long-term perspectives.

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