

New Challenges for Sustainable Rural Development in the 21st Century

INTRODUCTION

The relation between rural and urban areas differs widely through the World. In some areas, particularly in Europe, the distinction between rural and urban is becoming increasingly blurred. This regards in particular rural areas close to urban centres where a process of integration of rural and urban space is taking place. Thus many rural areas, while benefiting from an increased interaction with the urban areas close by and/or from an increasingly diversified economic base, also face the challenges of losing their rural characteristics and identity. At the same time more remote rural areas with low population density and a difficult economic development face an increasing dichotomy between rural and urban areas. Over the next decade urban agglomerations will benefit from current economic and demographic trends whereas many remote rural areas face increasing difficulties and needs to better capitalise their territorial potential.

The classical rural areas with traditional agriculture are predominantly to be found in the developing countries and Eastern parts of the EU. These traditional agricultural regions have high reserves and potentials that could be used for example by extensive and/or ecological agriculture, bio-industries, production of alternative energies to create new and possible better employment and living opportunities.

In this special issue of the Journal for Geography published at the occasion of the 17th Annual Colloquium of the IGU Commission on the Sustainability of Rural Systems entitled *New Challenges for Sustainable Rural Development in the 21st Century*, which took place from 13th to 18th July 2009 in Maribor, Slovenia, experts from Czech Republic, India, Indonesia, Portugal, Slovenia and Spain analyse and explain different practices and possibilities of how local communities from their countries strive to improve the conditions of live.

Sustainable Land Management can be defined as "the use of land resources, including soils, water, animals and plants, for the production of goods to meet the changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions" (UN Earth Summit, 1992). TerrAfrica (2005) has further defined sustainable land management as "the adoption of land use systems that, through appropriate management practices, enables land users to maximize the economic and social benefits from the land while maintaining or enhancing the ecological support functions of the land resources". Sustainable Land Management is crucial to minimizing land degradation, rehabilitating degraded areas and ensuring the optimal use of land resources for the benefit of present and future generations.

In the paper entitled *Management of Soil as a Natural Resource in the Savinjska Statistical Region of Slovenia*, the author **Milena Petauer** from the University of Maribor, Slovenia, examines the great landscape diversity and biotic diversity of the Savinjska statistical region conditioned by the variety of soils. The soil use illustrates the ratios between natural and socio-geographical factors. Forests cover almost 60% of the surface in the Savinjska statistical region, around 33% are agricultural surfaces, a bit less than 6% are urbane surfaces, 2% of the surfaces are in the process of overgrowing, and 1% consists of water and other surfaces. Among agricultural surfaces, meadows prevail (73%), there are about 18% of fields, while a

bit less than 10% consist of orchards, vineyards and other permanent plantations. The management and preservation of soil as a natural resource in the municipalities of the Savinjska statistical region are also evaluated. Due to numerous activities and their indirect and direct influences, the soils are highly burdened from the environmental point of view. The kinds of burdening differ according to different areas within the region.

Traditionally, rural areas could be differentiated from urban areas through their lower population density, different employment structure, lower level of income and worse access to public goods. From the point of view of territorial cohesion, lower population density should not be the decisive characteristic.

One of the Union's development aims is to modernise social structures, including employment structures. It is possible to increase territorial cohesion by aligning employment structures in rural and urban areas. Level of income and access to public goods therefore remain the biggest challenges for territorial cohesion and they can be most effectively improved through support for non-agricultural activities in rural areas. Rural development measures should not, however, drain resources intended for direct payments to farmers. New rural policy must be less substitutes and more investments. However, it should be made clear that rural development policy has a huge influence on territorial cohesion. For this reason, it does not seem justifiable to separate rural development measures from cohesion and regional development policy. This policy is better able than the CAP to assist with non-agricultural aspects of rural development, such as retraining people for work in more productive areas of the economy.

Helena Pina from the University of Porto, Portugal, summarizes in her paper entitled *The Importance of Complementarity in the Territorial Cohesion and Sustainability of Rural Areas: The Case of Cambres, a Douro Winegrowing Area, and Magueija, a Mountainous Area*, that new investments have to be made in the preservation and diversity of the landscape in order to obtain sustainable development and territorial cohesion. There are many possibilities, but the residents have to be trained, motivated and technically coordinated, so that these territories can be revitalized from a multifunctional perspective, in which complementarity is always present. In the implementation of these dynamics, tourism can also trigger a series of overarching activities in social and economic terms, including more socially depressed areas, such as Magueija. Should the coordination of local government in these areas be particularly promoted? Will territorial stagnation, or even regression, reveal a problem of governance?

The main aim is to achieve sustainable development leading progressively to territorial cohesion. A contextual perspective is however required wherein complementarity is always present.

Slovenia has successfully integrated into the European economic space. Yet despite important structural changes and relatively high economic effectiveness, Slovenia is encountering socio-economic problems in individual regions. All the regions appear to show a positive economic growth of a higher average than that in the EU. Slovenian cohesion policy is largely based on stimulation of regional development. The strategic interest of the country is to reduce regional dissimilarities on its whole territory and thus strengthen economic and social cohesiveness. Three documents were adopted on the state level for this purpose: Strategy of economic development

of Slovenia, Regional development strategy, National Development Programme. These three documents delineate the priorities of harmonious regional development: to enhance competitiveness of the economy, enlarge investing in research and development, increase educational structure of human resources, ensure the quality of life and environment, and restructure agriculture and development of rural areas.

Matej Kraner, a postgraduate student, and **Lučka Lorber** from the University of Maribor, Slovenia, examine in their paper Structural Changes in Agriculture in the Pomurje Region After 1991. The year 1991 was crucial for Slovenian economy, as that year Slovenia gained its independence and the difficult process of transition started. The economic importance of agriculture in Slovenia is relatively small and limited mainly due to the harsh mountainous relief and considerable absolute share of forest and meadows. When Slovenia gained independence, the increase of efficiency and competitiveness of agriculture became the basic objective of the agricultural policies in the 1990s. The Pomurje region lies in the north-eastern part of Slovenia and is the most agricultural and the least developed region in Slovenia. In the past, this region was characterised by decrease of population, aging of population and emigration from rural areas. The importance of agriculture in the general economy of the Pomurje region is decreasing even more rapidly than in Slovenia as a whole. Nevertheless, the Pomurje region remains the most important agricultural area in Slovenia, with the highest rate of active population in agriculture. Agriculture in the Pomurje region is in a period of intense restructuring and technological modernisation. Well planned rural development policies will play a very important role in the restructuring of agriculture. Agriculture in the Pomurje region has a great potential in the development of agricultural complementary activities, ecological farming and tourism.

Rural development policy is an increasingly important component of the common agricultural policy (CAP). It promotes sustainable development in Europe's rural areas addressing economic, social and environmental concerns. Over half of the EU's population lives in rural areas, which cover 90% of the EU's territory. LEADER is an innovative approach within EU rural development policy. LEADER stands for 'Links between actions of rural development'. As its name suggests, it is a method of mobilizing and delivering rural development in local rural communities, rather than a fixed set of measures to be implemented. The importance of the LEADER method in the context of a local development strategy has been recognised all over Europe, and there are plenty examples under LEADER approach that show how local development strategies can be developed with LEADER funding and how they may continue to have a positive impact. LEADER has always viewed local people as the main asset of rural areas, and the distinctive characteristic of LEADER projects was the reliance placed on the people who live in rural areas, and on their ability to discover what was best suited to their environment, culture, working traditions and skills. It can play an important role in encouraging innovative responses to old and new rural problems.

In the paper entitled "The LEADER Approach" - New Development Opportunity for Rural Areas in Slovenia, **Tomaž Cunder** and **Matej Bedrač** from the Agricultural Institute of Slovenia examine the LEADER approach, which is implemented in Slovenia in the framework of the Rural Development Programme of the Republic of Slovenia. The main objective of the LEADER approach is comprehensive rural development on a local level. 33 Local Action Groups have been formed which cover an area of 19,739 km² with altogether 1,900,748 inhabitants living in 199

municipalities, which is almost 95% of all the municipalities in Slovenia. The Local Action Groups (LAG) established in Slovenia are very heterogeneous as regards their economic, social and environmental dimensions. The analyses of Development Deficiency Index (DDI) on the level of LAGs show significant differences between the most and the least developed LAGs and relatively smaller differences among other LAGs. The LAGs in the Central Slovenia are strongly on the lead, while the LAGs in the Pomurska region lag far behind those with the highest DDI. Other LAGs can be classified into two groups, the first one having a DDI lower than 100, and the second one having an index higher than 100. This classification of LAGs according to the DDI is useful in practice for classification purposes and as a criterion for the allocation of development funds. Nearly 60% of the priority tasks are directed towards the three most important economic sectors of rural areas: agriculture, tourism and small enterprises. It has to be stressed that, with reference to priority tasks, more attention should be given to social and spatial issues.

Many of the problems faced by territories, especially in European mid-mountain landscapes, cut across sectors and effective solutions require an integrated approach and cooperation between the various authorities and stakeholders involved. In this respect, the concept of territorial cohesion builds bridges between economic effectiveness, social cohesion and ecological balance, putting sustainable development at the heart of policy design.

The main aim of the article entitled *Fighting for Survival. Planning and Development Issues in two European Rural Border Mid-Mountains Regions*, written by **Alexis Sancho Reinoso** from the University of Barcelona, Spain, is to further our understanding of two mountain rural areas occupying two distinct geographical environments: the Spanish Pyrenees and the Austrian Alps. In the specific case of examining management practices that have been adopted as part of the public policies implemented in two mid-mountain regions; areas that do not have the same possibilities for development as those enjoyed by high-mountain environments. These places suffer structural problems resulting from low levels of agricultural competitiveness accompanied by factors that impinge negatively land use which, in turn, condition their landscape management practices.

The livestock sector in India plays a multi-faceted role in socio-economic development of rural households. Livestock rearing has significant positive impact on equity in terms of income and employment and poverty reduction in rural areas, as distribution of livestock is more egalitarian as compared to land. In India, over 70% of the rural households own livestock and a majority of livestock owning households are small, marginal and landless households.

Md. **Asif Iqbal** from the Aligarh Muslim University, India, examines the role of livestock husbandry as an important source of economic activity in the agricultural sector in India. The livestock sector improves the socio-economic conditions of people in general and rural people in particular. It is usually practiced in rural areas since ancient times. The increasing urbanization with the growing population and the changing food habits of the people enhances the demand of livestock products in the whole world. India is one of the developing countries with the highest number of livestock, and in the first place in the world as regards milk production. India has 185 million cattle and 98 million buffaloes, which is 20% of the world's bovine and 14% of cattle population.

In the paper entitled *Livestock Revolution and Its Impacts on Sustainability of Marginal and Small Farmers in India: A Case Study*, the authors **Nizamuddin Khan** and **Md. Asif Iqubal** from the Aligarh Muslim University, India examine the influence of livestock cropping that is practiced as an integral and complementary farming system, however, it is well rooted in rural areas. The optimum utilization of animal products and by-products in the cultivation of various crops and the use of crop residues and by-products for rearing the animals have resulted in the improvement of economic viability of agriculture and sustainability for poor farmers who follow the system. Soil fertility is also maintained through the use of manures, and using cow dung directly or after the production of biogas in plants for cooking food and other works can save energy. Proper management of livestock and crop-derived wastes could reduce the environmental pollution and increase the level of sustainability of the environment. Moreover, the livestock rearing undertaken by poor farmers with the cultivation of distinct crops is the key and boon for poverty alleviation at the national level. It is an economically viable, environmentally sustainable and socially acceptable farming system in the study area.

Livelihood from livestock among rural households in the majority of developing countries is not a specialized stand-alone economic activity, but is closely integrated with other agricultural endeavours within the framework of mixed production systems (e.g. crop-livestock). This general statement, however, recognizes that there are also a significant proportion of poor livestock keepers in developing countries that specialize in livestock. The mixed-farm facet of livestock livelihood is significant in that the potentials to livelihood improvement can be situated within the development stage of agriculture of individual countries at the macro level, and of farms at the micro level within countries.

Budi Guntoro from the Gadjah Mada University, Indonesia, aims to determine in his paper entitled *Community Development Plan: Rural Livestock, Agriculture and Livelihood in Indonesia*, the problems encountered by the community with the emphasis on livestock, agriculture and livelihood, and to recommend an appropriate plan of actions in addressing these problems. Field observation and interview with key informants were conducted. The data gathered served as the basis in the preparation of a Community Development Plan for Lopati Village, Yogyakarta Province, Indonesia, which was the ultimate goal of the activity. In addition, these data provided guidelines in the plan implementation. Additionally, it would serve as a basis for determining the different changes or accomplishments to be made. The results showed that the problems that were faced by the community were low income, lack of capital and credit sources, low price of product, and business management.

The World Health Organization and the Food and Agriculture Organization of the United Nations have defined probiotics as "live microorganisms, which, when administered in adequate amounts, confer a health benefit on the host." They are also called "friendly bacteria" or "good bacteria." The concept of probiotics arose at the turn of the 20th century from a hypothesis first proposed by Noble Prize-winning Russian scientist, Elie Metchnikoff. Most probiotics fall into the group of organisms known as lactic acid-producing bacteria and are normally consumed in the form of yogurt, fermented milks, or other fermented foods. Prebiotics are nondigestible food ingredients that selectively stimulate the growth and/or activity of beneficial microorganisms already in the human colon, and when mixed with probiotics, form synbiotics.

In the paper entitled Potential Role of Probiotics for Sustainability in Rural India the authors **Kislay Roy, Tomaž Langerholc** and **Avrelija Cencič** from the University of Maribor, Slovenia, examine possibilities of the use of probiotics in Indian rural areas. Indian rural inhabitants with poor incomes have limited access to medicines, and health facilities are scarce. The introduction of probiotics to these economically challenged people is a cost effective and a natural way to improve their health conditions. Acceptability of dairy products (the most usual form of probiotics) in India is high since they have been consumed traditionally in the Indian sub-continent. There are obstacles in preparing them in a suitable form, since cold distribution chain and refrigerators are generally not available, education is poor, as well as technical problems exist to prepare them. By preparing them in a suitable form for domestic use, we could improve the quality of rural inhabitants and to enable sustainability in the Indian countryside.

Many people believe that agriculture is getting more and more efficient. They perhaps get this impression on account of the fact that yields of crops are going up all the time. They may also be influenced in their thinking by the fact that farming is getting increasingly mechanised and requires less and less labour. But these facts do not in any way indicate greater efficiency. What they do show is an increase in productivity, which is a very different thing. Productivity means the amount produced per unit area of land or per person employed. There is no doubt that both these indices of agricultural production have increased enormously in the last half century. But efficiency has actually gone down over the same period. This apparent paradox arises because of a misunderstanding about the meaning of the word efficiency. It has nothing to do with productivity. The efficiency of a system means the ratio between the work or energy got out of it and the work or energy put into it. The more energy we get out per unit amount we put in, the more efficient the system is.

The authors **Matjaž Turinek, Maja Turinek, Silva Grobelnik Mlakar, Franc Bavec** and **Martina Bavec** from the University of Maribor, Slovenia, compare energy efficiency of different farming systems. A long-term field trial, started in 2007 at the University of Maribor, focuses on food quality and the ecological footprint of conventional, integrated, organic and biodynamic farming systems. All inputs and outputs in each farming system are carefully monitored. The data gained has been evaluated and interpreted using the SPionExcel tool, a next generation ecological footprint calculator, developed by the Technical University of Graz. Results from the first year show better performance of both, organic and biodynamic systems in production of wheat and spelt, mainly due to non-use of external production factors, such as mineral fertilizers and pesticides. However, the ecological footprint for machinery use is greater in integrated, organic and biodynamic farming systems, due to harrowing needed in all the three systems. When yields are added to the equation, the organic and biodynamic farming systems emerge as more ecologically efficient in terms of land area "cost" per unit of yield. Thus, organic and biodynamic farming systems present viable alternatives for reducing the impact of agriculture on climate change, while ensuring sustainable food security.

Rural tourism related activities have been widely regarded as key-tools for rural development, especially in countries such as Romania and all the East European countries where rural space and production is still a major part of whole economic structure, trying this way to revitalize declining areas and ensure them possibilities of achieving a sustainable future. Rural tourism must thus be considered as a

complex plurality of multi-faced activities, contributing both to growth of other activities in rural areas and to improvement of life quality for local inhabitants, all this as part of an effective rural development integrated system. Cultural heritage comprises the sources and evidence of human history and culture regardless of origin, development and level of preservation, and the cultural assets associated with this.

The authors **Karina Ho ení, Radoslava Krylová, Pavel Klvač** and **Zbyněk Ulčák** from The Masaryk University in Brno, Czech Republic, examine in their paper entitled *Tourism and Authenticity in the Czech Villages of the Romanian Banat*, the connection between tradition and nostalgia. In the 1820s, several thousand Czechs moved to the Carpathian Mountains region near the Danube River. They built six villages. Strict ethnic endogamy helped preserve their cultural distinction. Nowadays, these villages are visited by tourists from the Czech Republic. Visits are motivated by the search for both "traditional" rural landscape and lifestyle. The paper analyses the ways of how tourists perceive rural landscape and lifestyle, how these perceptions vary among different actors, and how they influence their behaviour. It is assumed that there is nostalgia for the traditional, pre-modern world. The sentiment is used for tourism promotion there. Therefore the "harmonic cultural landscape" is not only of ecological and cultural value; its image becomes a commodity in the tourism industry.

In the paper entitled *Tourist Farm Service Quality Assessment*, **Karmen Pažek** and **Črtomir Rozman** from the University of Maribor, Slovenia, examine the meaning of service quality in farm tourism. Farm tourism is one of the most important supplementary activities which generate considerable secondary income. The authors present a methodology which enables the ranking of tourist farms based on their service quality. This is accomplished through the use of an expert system based on the decision making method called DEXi. Using the DEXi, the multi-criteria decision model for the assessment of farm tourism's service quality was developed. The results of the model are shown as the assessments for individual farms.

The authors presented in this issue cover many different perspectives of rural development. Tangible factors such as natural and human resources, investments, infrastructure and economic structure have traditionally been seen as the main determinants of differential economic performance. More recent research has highlighted the important role of less tangible or soft factors including various kinds of social, cultural, institutional, environmental and local knowledge which constitute the basic capital for regional development. The diversification of the economic base of rural areas goes beyond agriculture and tourism.

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Chief and responsible editor