

URBAN-RURAL INTERFACE: GENERAL REMARKS. APPLICATION IN THE ROMANIAN SYSTEM OF SETTLEMENTS

Ilinca-Valentina STOICA

University of Bucharest – The Interdisciplinary Centre for Advanced Researches on Territorial Dynamics (CICADIT),
4-12, Regina Elisabeta, 030018, Bucharest, Romania, e-mail: stoicailincavalentina@gmail.com

Cristian TĂLÂNGĂ

University of Bucharest – The Interdisciplinary Centre for Advanced Researches on Territorial Dynamics (CICADIT),
4-12, Regina Elisabeta, 030018, Bucharest, Romania, e-mail: cristian2851@yahoo.com

Daniela ZAMFIR

University of Bucharest – The Interdisciplinary Centre for Advanced Researches on Territorial Dynamics (CICADIT),
4-12, Regina Elisabeta, 030018, Bucharest, Romania, e-mail: irdanniela@yahoo.com

Abstract: The urban-rural interface is a complex concept, approached by specialists from several fields, interested in optimizing the ties between the urban environment and the rural environment, in the context of urban expansion. The article's purpose is to analyze the various meanings of the urban-rural interface, to highlight its features, as well as to highlight the mechanisms that give it its functional nature. At the same time, its main general characteristics at the level of the Romanian system of settlements are highlighted.

Key words: urban-rural interface, urban expansion, the system of settlements in Romania

* * * * *

INTRODUCTION

In the long run the area of urban-rural interference has generated the interest of specialists in several sectors, this has increased in the past few decades, in the context of dynamic changes in the organization of space, but also in the conducting of studies on territorial development. Nowadays, more than a quarter of the European Union's territory has now been directly affected by urban land use; by 2020, approximately 80 % of Europeans will be living in urban areas, while in seven countries the proportion will be 90 % or more. As a result, the various demands for land in and around cities are becoming increasingly acute (European Environment Agency, 2006).

In this context, there emerges the necessity for a study of urban-rural interconnections and the optimization of the ties between the two types of spaces, with a view to sustainable management. Actually, the ties between the city and its surrounding environment have been permanently under the attention of specialists, in time, several terms being used, such as rururbanization, periurbanization and – most recently - rural-urban interface or urban-rural interface. At the same time, another concept frequently used is that of periurban interface.

Internationally, one can notice there is no unitary definition as far as the urban-rural interface or the periurban interface is concerned; there stand out several studies that approach this notion at a general level: Delgado, J., Angeles, Gabriela, 2004; Tacoli, Cecilia, 1998; Tacoli,

Cecilia, 2003; Allen, Adriana, 2003; or particularize it by means of analyses of case studies, such as the rural-urban interface of the city of Edmonton, in Alberta, Canada (Masuda, R., J., Theresa, Garvin, 2008) or Santiago, in Chile (Madaleno, Isabel, Maria, Gurovich, A., 2004), among others.

At the same time, certain specialists consider that from a natural resource management perspective, the interaction between natural areas and urban development is called the wildland-urban interface (WUI) (Behm, Anna, L., et al., 2004). Other studies concentrate on particular aspects, such as identifying some indicators for the environmental monitoring of the urban-rural interface (Styers, Diane, Marie, et al., 2010) or identification of trace element sources and associated risk assessment in vegetable soils of the urban rural transitional area (Chen, T., et al., 2008).

The above-mentioned remarks indicate the multiple opportunities to approach the urban-rural interface, as well as the necessity for the conduct of thorough studies that would analyze, in depth, its particularities; the present work is part of this course.

METHODOLOGY

The methodology used in the current work consisted in a study of the available material on the various approaches to the area of urban-rural contact. In this respect, both official documents and the results of research carried out by various specialists, as part of projects or individually, have been analyzed.

Later on, the various meanings of that concept, as well as the means to set clear limits and to define exact characteristics have been examined. At the same time, the way the notion of interface is perceived in other fields of study was analyzed, in order to establish connections useful in understanding urban-rural spatial ties.

Certain general landmarks concerning the urban-rural interface of settlements in Romania were highlighted as well.

APPROACHES TO THE CONCEPT OF INTERFACE IN VARIOUS FIELDS

The concept of interface is used in various fields of science such as physics, chemistry, informatics, biology, but also in the field of geography and territorial planning, with distinct meanings.

In the field of chemistry interface means the surface separating the components in a mixture, which exist as distinct phases (Bălănescu, G., 1964). Physics defines the interface as a layer with distinct properties from those of the masses of material located on either side of the interface. In the case of a system of settlements, from this point of view, the area of contact between the “components of the mixture”, that is the interference between the urban space and the rural space, is of relevance (Tălângă, C., et al., 2010). At the same time, a high number of physical-chemical processes are initiated or occur at the level of interfaces (for instance, corrosion or catalysis) (Vânău, G., 2009), which, in the case of a system of communities, would mean the material and information flows that bring about transformations in both the urban environment and the rural one.

It must be pointed out that in biology the cell membrane is considered an interface essential to life, and it is analyzed as a subsystem equipped with a certain structure, a network of processors, which ensures the conduct of specific activities (especially related to transfer and encoding) (Le Moigne, 1994 quoted in Vânău, G, 2009). Inside a system of settlements, this would represent an area where the combination of the urban characteristics with rural ones leads to the creation of complex structures, in virtue of distinct functioning mechanisms.

Informatics defines the interface as the conventional frontier between two systems or units, which allows exchanges of information according to certain rules (Marcu, F., 2000), and electronics treats the interface as a device that converts the electronic signals so that two devices or systems could intercommunicate (Tălângă, C., et al., 2010).

In a human geography dictionary, the term of interface has been defined as a surface or a border located between two systems (Goodall, B., 1987). The notion of interface differs from that

of border, to the extent the former systematically involves an interaction, exchanges inside the space it contains, but also between that space and those it separates it from (Vânău, G., 2009).

As a conclusion, there are distinct meanings of the concept of interface, in various fields, and some of them can be extrapolated and analyzed from the point of view of the urban–rural relation.

URBAN-RURAL INTERFACE AS REFLECTED IN EUROPEAN DOCUMENTS AND PROGRAMS

The necessity for enhanced cooperation between city and village is grounded in a series of European documents such as the European Spatial Development Perspective, the Lisbon Strategy, the European Landscape Convention, or, more recently, the Green Paper on Territorial Cohesion (2008).

One of the important documents concerning urban-rural ties is the European Spatial Development Perspective, adopted by the Ministries of the 15 EU member countries at that time, in 1999. It stipulates that developing an urban polycentric and well-balanced system is necessary, as well as strengthening the urban space-rural space partnership, in order to overcome the extant gap between the village and the city... Many local problems cannot be solved nowadays without an integrated way of looking at towns and countryside, since they tend to be regional problems. Practical partnership expresses itself through co-operation and co-ordination. However, in order for co-operation to grow into a long-term successful partnership, several preconditions have to be created:

- the equality and independence of the partners;
- voluntary participation in partnership;
- consideration of different administrative conditions; and
- common responsibility and common benefit (European Spatial Development Perspective, 1999).

The Green Paper on Territorial Cohesion (2008) emphasized the role of urban-rural ties, by encouraging cooperation, interaction and connection between cities, metropolises and the surrounding rural areas (http://ec.europa.eu/regional_policy/consultation/terco/paper_terco_ro.pdf) (quoted in Tălângă, C., et al., 2010).

The concept of interface, as well as what it actually involves, have been at the center of international organizations' attention, and several programs have been developed, one of the most recent being PLUREL (Peri-urban Land Use Relationships - Strategies and Sustainability Assessment Tools for Urban-Rural Linkages). This is a large-scale research project funded by means of the European Union's 6th Research Framework Programme; 31 partner organizations from 14 European countries are involved, alongside China; it is coordinated by the University of Copenhagen. The project was launched in 2007 and will end in December 2010.

PLUREL will develop the new strategies and planning and forecasting tools that are essential for developing sustainable rural-urban land use relationships. These strategies and tools, generic in nature, will support the analysis of urbanisation trends in the EU so that ways can be identified of both supporting this process and mitigating its negative impacts. In this way the PLUREL tools will help improve the quality of life of the population living in cities as well as in the peri-urban and rural surroundings. PLUREL will evaluate costs for the implementation of these strategies, and help stakeholders to better understand, plan and forecast the interactions between urban, peri-urban and rural areas (<http://www.plurel.net/Project-4.aspx>).

The central idea of these projects is envisaging the urban-rural complex as a whole and not as separate parts; the concept of interface thus acquires new practical/functional dimensions. During the opening of the conference "Europe's peri-urban potential", organized by PURPLE (Peri-Urban Platform Regions Europe), in November 2009, the president of the Committee of the Regions, Luc Van den Brande, declared that we should stop thinking only in terms of urban or rural and recognize the role and importance of peri-urban regions (<http://www.purple-eu.org/PageFiles/357/News%20From%20PURPLE.pdf>).

WAYS OF INTERPRETING URBAN-RURAL TIES

In the current European context, where urban expansion is ever more visible, the thorough understanding of urban-rural inter-relations becomes essential, with a view to the creation of a sustainable partnership. Two of the ways to approach those relations were formulated by Douglass and by Hudalah & De Roo, who created the schemes for monitoring the ties that exist between the two types of environments.

Douglass proposes an analytical framework for understanding how rural–urban linkages or flows (of people, production, commodities, capital and information) can be mutually reinforcing or truncated, leading to different trajectories and reciprocal or opposing relationships between urban and rural development. Allen, da Silva and Corubolo add to this framework the consideration of flows of natural resources and wastes (figure 1). The dynamics of these flows might be driven by local policies or strategies (for instance, promoting competition for land between urban development and agriculture, or the increasing pressure of extractive activities as a response to the city’s demand for building materials); by regional and national policies (for example, the promotion of industrialization); or by international processes, such as falling prices for export crops increasing the migration of impoverished farmers from rural areas to the peri-urban interface in search of alternative livelihood opportunities. Placing environmental processes of change in the peri-urban interface into the analysis of the problems and opportunities created by rural–urban flows allows the identification of strategic entry points and ensures that the environmental planning and management process keeps an orientation to the future (Douglass, M., 1998, quoted in Allen, Adriana, 2003).

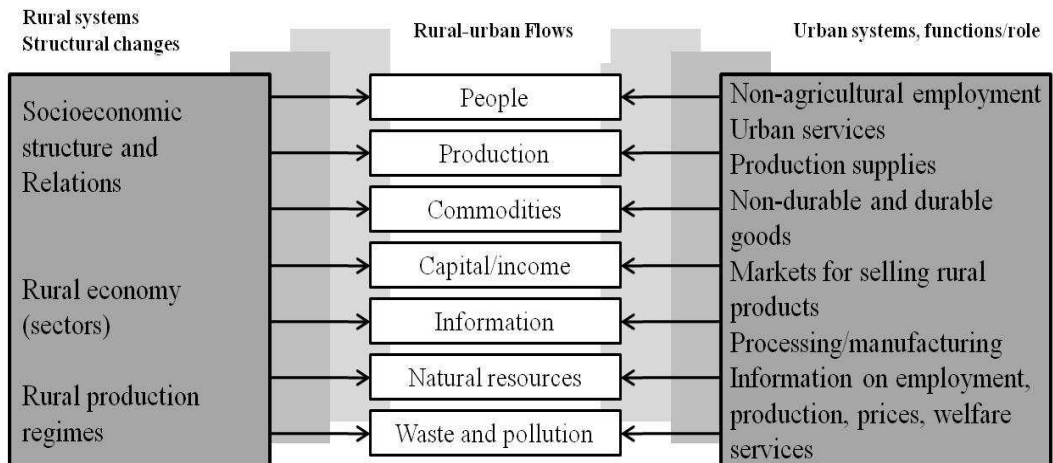


Figure 1. Rural-urban flows
(Source: Douglass, M. (1998), quoted in Allen Adriana, 2003)

In the same time, Hudalah & De Roo suggest to consider rural-urban transition as a multi-layered process with three dimensions: functional, organisational and institutional at the macro-, meso- and micro-level. Functional changes are ranging from physical changes (such as land use and infrastructural changes) and urban and regional dynamics (for example, population, economy and employment changes), to catastrophic events (such as war and disasters). Organisational changes concern changes of actions, cooperation and coordination influencing stakeholders/actors. They consist of economic actors (including real estate developers), political actors and governments, and non-governmental actors such as environmental organisations. Finally, institutional changes comprise altering frameworks of meaning and rules of conduct (figure 2). They consist of shifts in cultural values, formal and informal rules (including new legislations and policy frameworks), and ideological forces (Rauws, W., et al., 2009).

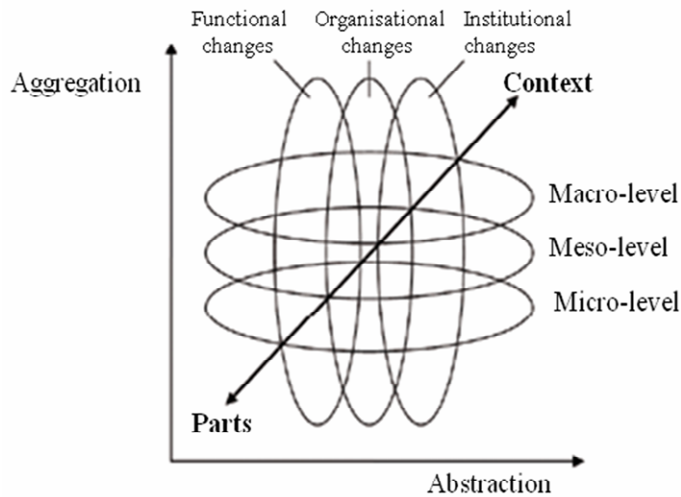


Figure 2. Multilayered changes in rural-urban transitions
(Source: Rauws, W., et al., 2009)

The two avenues of approach, presented above, indicate that the urban-rural transition can be tackled from multiple angles, and the processes that occur inside that zone of contact are interdependent to a high degree.

MEANINGS OF URBAN-RURAL INTERFACE

As far as the concept of interface is concerned, there have emerged several definitions, out of a desire to express the nature of urban-rural ties as clearly and concisely as possible. Thereby, more recently, social scientists, economists, architects and urban planners have been compelled to work together in the rural-urban interface concept, seen as the interaction between the two spheres and an explicit acceptance of spatial coexistence of both. Worries are the necessity to feed and water supply the rising numbers of people that arrive in the cities every day, and also the need to find the best solutions to integrate complementary realms in order to ameliorate policies and governance (Brook, R., Davila, J., 2000; Madaleno, Isabel, Maria, et al., 2002; Nuppenau, E., A., 2002, quoted in Madaleno, Isabel, Maria, Gurovich, A., 2004).

At the same time, there have emerged approaches that perceive the interface as a place of changes and adjustments, distinct from the urban and rural spheres (Woods, M., 2006; Allen, 2003, quoted in Masuda, R., J., Garvin, Theresa, 2008). No longer seen as just a boundary 'in-between' the city and the country, the interface is characterized as a process where identification and location, place and identity, are being contested and reconfigured (Kaiser, R., Nikiforova, E., 2006, quoted in Masuda, R., J., Garvin, Theresa, 2008).

The concept of interface involves a distinct way to approach the urban-rural ties, from the perspective of understanding the mechanisms that determine their functioning and the nature of mutual dependence. At the same time, one can consider that the urban-rural interface identifies the area linking two different, complex, systems, with distinct characteristic features, sometimes engaged in socio-cultural conflicts. Sustainable management of such an area involves an active partnership between the decision-makers of the two areas, by means of the existence of joint approaches to matters of mutual interest.

The peri-urban interface constitutes an "uneasy" phenomenon, usually characterized by either the loss of "rural" aspects (loss of fertile soil, agricultural land, natural landscape, etc.) or the lack of "urban" attributes (low density, lack of accessibility, lack of services and infrastructure, etc.) (Allen, Adriana, 2003).

Attempts to conceptualize this new development landscape range from the emphasis on rural–urban linkages as footloose processes rapidly transforming territories, to the notion of the “peri-urban” as a term qualifying areas with mixed rural and urban features (Jaquinta, D., L, Drescher, A., W, 2001, quoted în Allen, Adriana, 2003). In this conceptual field, the *peri-urban interface* is still generally considered as a transitional zone between city and countryside, often described “not [as] a discrete area, but rather [as] a diffuse territory identified by combinations of features and phenomena, generated largely by activities within the urban zone proper” (Nottingham and Liverpool Universities, 1998, quoted în Adell, G., 1999). From an environmental perspective, the peri-urban interface can be characterized as a heterogeneous mosaic of “natural” ecosystems, “productive” or “agro-” ecosystems, and “urban” ecosystems affected by the material and energy flows demanded by urban and rural systems (Allen, Adriana, et al., 1999, quoted in Allen, Adriana, 2003).

The limits of the interface and its characteristic features are changed in time, mainly under the influence of the urban population (which has the financial and material resources), which sees it as a space of refuge, for residential constructions or for entrepreneurs who develop various businesses, considering the lower price of land. Other times, the population in the rural area comes to meet the demand in the urban areas by improving infrastructure, or by attempting to offer incentives to potential investors. In this respect, the interface zone becomes the area of multiple and often contradictory interests, especially in the case of large cities.

Yet, there has been an under-evaluation of the interface as a politics of place where multiple interest groups with particular preferences struggle to impose particular meanings on homes, workplaces, communities, and natural and built environments (Harper, S., 1987; Nelson, P., B., 2001; Wulfhorst et al., 2006, citați în Masuda, R., J., Garvin, Theresa, 2008).

In this context, the rapidity in changes of the interface borders can be an indicator of the dynamics of a city, which more or less expands into the surrounding space as it receives population inflow and clearly structures its functional areas.

The above-mentioned data indicate the complexity of this notion and the difficulty in identifying a unitary definition which would accurately reflect its features and concisely express the mechanisms of its operation.

APPLICABILITY ON THE SYSTEM OF SETTLEMENTS IN ROMANIA

A rough overview of evolution in Romania indicates that during the communist time the interface tended to be static, in general, with clearly-defined limits in the landscape, and very hard to alter (in the context of socio-economic restrictions), in contrast to the post-1989 period, when the mechanisms that alter interface borders were no longer enforced by the central authority, but influenced by regional and local factors.

In the case of the large, dynamic cities, expanding visibly, the characteristic features of the interface change rapidly, as the interface undergoes continuous transformation, travelling farther and farther away from the initial border, which is gradually incorporated into the city interior. One obvious example is the interface of the city of Bucharest, which has been undergoing a continuous transformation in the past 50 years, in the context of politico-economic changes that brought about the expansion of the interface limits into the surrounding rural space.

In the case of large cities, due to their tendency to expand, the interface is much better materialized in the landscape, by means of the emergence of new shopping units or residential boroughs, initially along the main routes or communication and later on expanding in the areas in between those routes. At the opposite end, there are small towns, many of them with characteristic features similar to the surrounding rural areas’, a situation where the interface is all but inexistent or actually does not exist, as it coincides with the administrative limits. Bearing in mind that several settlements in Romania were granted the status of city in the past few years, although they failed to stand up to the minimal criteria, this is a frequent situation in the case of small towns, especially those with agricultural functions.

There are also distinct situations, such as that of the mining towns (Lupeni, among others), whose birth was decreed by the central authority, and which left typical imprints on the landscape, initially influencing the surrounding area for the better, in terms of the jobs offered, and later on for the worse, in terms of the socio-economic dysfunctions that emerged and the onset of environment deterioration processes. In their case, the transition to the surrounding rural area is sudden, and it is visible in the landscape, in the context of the distinct characteristic features of the two systems.

The interface acquires a variety of forms, and it can be fragmented even in the vicinity of a single urban center or extending predominantly alongside certain directions. In this respect, certain activities can serve as catalysts of the interface's predominant development in a certain direction, such as large shopping complexes, located on the outskirts of town, which also serve the neighboring area (such as the new shopping area in the northern part of the city of Buzău) or located in the neighboring rural area (a large part of the shopping complexes of the city of Timișoara are located on the premises of the commune of Giroc), which brings about an increased attractiveness for the respective areas, and obviously polarizes flows in the respective areas.

As far as large cities are concerned, although the interface may be better structured initially in a certain area as compared to the urban core, gradually, as entry flows to the interior of the city (especially population and resources) grow more dynamic, the areas located elsewhere will also become attractive. This is also the case of the capital city, whose interface initially developed in the northern region, boosted by the presence of the airport, of certain large shopping areas; however, more recently, one can notice the southern region has also become very attractive.

CONCLUSIONS

In time, the area of urban-rural interference has stirred the interest of specialists from several fields, out of a desire to thoroughly understand the processes that unfold inside it as well as its influence in the region. The concept of interface involves focusing one's interest on that area of contact between the urban and the rural space and on understanding the mechanisms that influence its structure along certain lines.

The information presented in the current study indicates that the urban-rural interface is an area of transition of the utmost interest for local authorities, in both the urban environment (the area it can expand towards and it can draw its supplies from), and in the rural one (the place where available raw materials are capitalized on and access to services is provided). The flows between the two types of environments are dynamic, and their intensity and volume vary, especially, depending on the size and degree of complexity of the central city. Local decision-makers in the two spaces can come into conflict, more or less visibly, or can manage the area in a constructive manner, by means of joint programs, with a view to establishing a sustainable partnership.

In Romania, in general, one can speak of the urban-rural interface per se only at the level of large and dynamic cities, which preserve active ties with the surrounding rural area, while in the case of small towns it frequently coincides with the administrative-territorial borders.

As a conclusion, the urban-rural interface is a complex space, whose boundaries can alter in time and space, depending on a variety of factors.

Acknowledgements

This work was supported by CNCISIS – UEFISCSU, project number PNII – IDEI code 1948/2008.

REFERENCES

- Adell G., (1999), *Theories and models of the peri-urban interface: a changing conceptual landscape*, Development Planning Unit, UCL, London;
- Allen Adriana, (2003), *Environmental planning and management of the peri-urban interface: perspectives on an emerging field*, in *Environment&Urbanization*, vol. 15, no. 1, 135-147;

- Bălănescu G., (1964), *Dictionar de Chimie*, Editura Tehnică;
- Behm Anna, Duryea L., Mary L., Long A.J., Zipperer W.C., (2004), *Flammability of native understory species in pine flatwood and hardwood hammock ecosystems and implications for the wildland–urban interface*, in *International Journal of Wildland Fire*, 13, 355–365;
- Chen T., Liu X., Zhu M., Zhao K., Wu J., Xu J., Huang P., (2008), *Identification of trace element sources and associated risk assessment in vegetable soils of the urban rural transitional area of Hangzhou, China*, in *Environmental Pollution*, 151, 67-78;
- Delgado J., Angeles, Gabriela, (2004), *The rural-urban interface, a territorial approach to the spatial fragmentation of urban sprawl*, *Dela*, 21, 543-555;
- Goodall B., (1987), *The facts on file dictionary of human geography*, New York;
- Madaleno Isabel Maria, Gurovich A., (2004), *“Urban versus rural” no longer matches reality: an early public agro-residential development in periurban Santiago, Chile*, *Cities*, Amsterdã, vol. 21, no. 6, 513-526;
- Marcu F., (2000), *Marele dicționar de neologisme*, Editura Saeculum;
- Masuda R.J., Garvin Theresa, (2008), *Whose Heartland? The politics of place at the rural-urban interface*, in *Journal of Rural Studies*, 24, 118-123;
- Styers Diane Marie, Chappelka, A.H., Marzen, L.J., Somers G.L., (2010), *Scale matters: Indicators of ecological health along the urban–rural interface near Columbus, Georgia*, in *Ecological Indicators*, 10, 224–233;
- Tacoli Cecilia, (1998), *Bridging the divide: Rural-urban Interactions and livelihood Strategies*, in *International Institute for Environment and Development (IIED), Sustainable Agriculture and Rural Livelihoods Programme, Gatekeeper Series No 77* ;
- Tacoli Cecilia, (2003), *The links between urban and rural development*, in *Environment&Urbanization*, vol. 15, no 1, 3-12;
- Tălângă C., Zamfir Daniela, Stoica Ilinca-Valentina, (2010), *Urban-rural interface, polycentric development and transportation systems. Case study: Bucharest metropolitan area*, in *Human Geographies –Journal of Studies and Research in Human Geography*, 4, 2, 47-52;
- Vânău G., (2009), *Interfața spațial-funcțională dintre municipiul București și teritoriul support al acestuia*, teză de doctorat;
- Zhang Y., He H.S., Yang J., (2008), *The wildland–urban interface dynamics in the southeastern U.S. from 1990 to 2000*, in *Landscape and Urban Planning*, 85, 155–162;
- Rauws W., Roo de G., Timmermands W., (2009), *Peri-urban transition processes*, *Plurel newsletter*, no. 5, 1-3;
- European Environment Agency (2006) *Urban Sprawl in Europe: The Ignored Challenge*, Report No. 10, Office for Official Publications of the European Communities, Luxembourg;
- ***, (1999), *European Spatial Development Perspective. Towards Balanced and Sustainable Development of the Territory of the European Union*, Office for Official Publications of the European Communities, Luxembourg;
- ***, *PLUREL Project (Peri-urban Land Use Relationships - Strategies and Sustainability Assessment Tools for Urban-Rural Linkages)*, at <http://www.plurel.net/Project-4.aspx>;
- ***, *PURPLE (Peri-Urban Platform Regions Europe)*, at <http://www.purple-eu.org/PageFiles/357/News%20From%20PURPLE.pdf>

Submitted:
May 11, 2010

Revised:
September 2, 2010

Accepted:
October 10, 2010

Published online:
November 17, 2010