

## URBAN-RURAL INTERFACE, POLYCENTRIC DEVELOPMENT AND TRANSPORTATION SYSTEMS. CASE STUDY: BUCHAREST METROPOLITAN AREA

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**Abstract:** The article is aiming to analyse the concept of urban-rural interface. This concept is distinctively interpreted by various sciences such as physics, chemistry, biology, informatics and geography. The study is meaning to come up with an approach where polycentric development and the regional transport system play a part in adjusting and strengthening the complex ties between the urban space and the rural space. The case study focuses on the City of Bucharest metropolitan area. The study presents the area's specific features, emphasizing those elements that favor the optimal functioning of the mutual ties between metropolis and the adjoining space. Dysfunctions can be corrected by implementing a regional transport system, with a role in enhancing the cities' polarization role, and also in optimizing inter-settlement ties.

**Key words:** Urban-rural interface, Polycentric Development, Regional transport system, Bucharest metropolitan area.

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### Introduction

Analyses carried out at various territorial levels have indicated an escalation of the process of anthropization, determined by a set of differences that brought about the emergence of some gaps, the most frequent of them regional and intra-regional gaps. Levelling these gaps is a priority for numerous states and groups of states, which have defined and currently implement regional development policies.

In its current meaning, regional development – concept and ways to implement it – was established in geography and economics literature in the 1950s and 1960s, in the wake of research by Perroux (1950), Myrdal (1957), Hirschman (1958), Boudeville (1966), Friedmann (1969) and others.

This concept, alongside the concept of local development, incorporated in territorial development, were recently given a strong new lease of life, especially in Europe. Recently, the Territorial Agenda of the European Union (May 2007), adopted in Leipzig, identified the territorial priorities of development, starting from the three main policy guidelines of the European Spatial Development Perspective (ESDP): a) developing a polycentric and well-balanced urban system and a new urban-rural partnership; b) ensuring fairness in access to infrastructure and knowledge; c) sustainable development, prudent management and protecting the natural and cultural environment.

In compliance with these demands, the priorities that stand out as part of polycentric development and strengthening the urban-rural partnership are related to: consolidating polycentric development and innovating by networking urban regions and towns as well

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as establishing new ties of cooperation between urban settlements and rural settlements. Their practical implementation requires granting a special importance to the transport system, as a factor binding the two spaces (urban and rural) as well as to developing and consolidating the role of polarization core granted to certain settlements.

## Methods of approach

The term of urban-rural interface is used in that context, a concept used in various fields of science such as physics, chemistry, informatics, biology, but also in the field of geography or territorial planning, with distinct meanings.

In chemistry, interface means “the surface separating components that exist as distinct layers in a mixture” (Bălănescu, 1964, p. 387). Physics defines interface as a layer with distinct properties than those of the materials lying on either side of the interface. In the case of a system of settlements, this concept means the territory where the “components in the mixture” come into contact, that is, the interference between urban and rural space.

Informatics defines the interface as “a conventional frontier between two systems or units, allowing information to be exchanged according to certain rules” (Marcu F., 2000). In its turn electronics treats interface as a device that converts electronic signals so that two devices or systems can communicate. The “device” is, in this situation, the polycentric development process that can and ought to allow communication between the city-system and the surrounding rural space, obviously under the influence of different factors, but also by means of the impact caused by the transportation system, by means of its components (Figure 1).

Roger Brunet (1993) defined interface as “a plane or a contact line between two systems or two distinct sets”.

A dictionary of human geography defined the term of interface as “a surface or a border located between two systems. The term has been frequently used to mean ‘limit’,

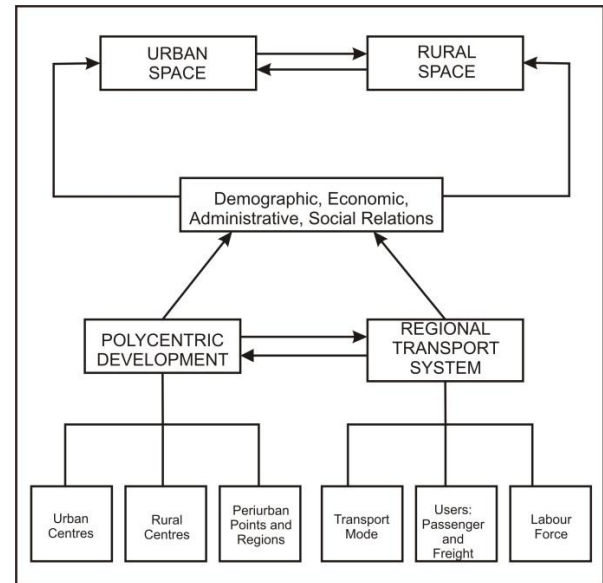


Figure 1. Urban-rural interface. A model for an approach

especially if they are poorly defined, between fields of academic study”. (Goodall, 1987, p. 240).

The concept of interface, but also what it effectively involves, are part of the concerns of international organisms, 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), as well as the PURPLE (Peri-Urban Platform Regions Europe) network. The central idea in these projects is designing the urban-rural complex as a whole instead of as separate parts; the concept of interface acquires new practical / functional dimensions (<http://www.purple-eu.org>).

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/](http://ec.europa.eu/regional_policy/)).

No matter the meaning used in the approach to the concept of interface it involves two remarkable ideas (Picon, 1992) that occur simultaneously: discontinuities (structural and functional interruptions), but also connections, mutual dependence that generate continuity and a whole in a given space. At the same time, the analysis of a land from the perspective of this concept involves granting special attention to respecting

individual and collective values – be they local or regional (Ianoş et. al., 2010).

### **Using the concept of urban-rural interface for the Bucharest metropolitan area**

This approach is meant as an attempt to create a working instrument towards the creation of a functional metropolitan area. Planning and developing Bucharest City's metropolitan area is an objective need for both the overall evolution of the city and for the regional and local development of a territory bound to cooperate with the metropolis. The two entities – the Capital city and the territory that supports it and whom it influences – can not exist in separation especially at this moment in time, when, at the European scale, development is based on the concepts of achieving social, economic and spatial cohesion, sustainable development.

While at European scale spatial cohesion is strengthened by transnational cooperation across the large regions of the continent, eased by pan-European corridors, at country scale it is achieved by, among others, the configuration of transportation networks.

The European policy in transportation has as its goal creating a coherent, multi-node transportation network that could take into account matters pertaining to security, safety and the environment, as well as social and economic priorities. The main purpose is ensuring sustainable mobility of goods and passengers, but also the consolidation of the urban-rural partnership.

The area analyzed is located in Southern-Central Romania, with Bucharest at its center, and of a slightly asymmetric shape on a northwestern-south-eastern general axis. The main framework of the metropolitan area consists in the network of communication routes that converge on the core metropolis, and the waterways and space reserves for future development resulted in the general elongated shape, including all settlements along the route towards Oltenița.

From the administrative point of view, the metropolitan area consists in 94 administrative units spanning 5 counties – all of the Ilfov county, parts of the Giurgiu and Călărași counties, and a very low number of units in the Dâmbovița and Ialomița counties (Figure 2). This configuration matches an interdisciplinary study carried out at the request of the Center for Urban and Metropolitan Planning of the General Council of the City of Bucharest, which does not rule out the possibility of territorial reconfiguration, matching the evolution and trends in development, at national and European level.

Geographical positioning is extremely favorable, considering that the most important national motor roads intersect in Bucharest, and some of them are trans-European roads. The strengths of the connections to vast geographical regions to the east, north and west mean tertiary-type operations are located here, in increasing numbers. This distribution of commercial enterprises, some of them actually part of the higher tertiary sector, can generate axes of territorial development, which would allow on the one hand strengthening the European-capital functions the city of Bucharest strives for, and on the other hand developing local poles with territorial impact.

Projects to develop transport infrastructure. In this respect the National Territory Management Plan lists several projects that deal with this area.

Developing the network of road routes stipulates modernizing the highways:

- Bucharest – Pitești, as part of Pan-European Corridor IV, whose impact will encompass the territory of the territorial administrative units as follows: Chiajna, Ciorogârla, Bolintin Deal, Ulmi, Florești Stoești, Găiseni and Vânătorii Mici; and
- Bucharest – Constanta, corridor IV, which encompasses the territory of the units as follows: Pantelimon – Brănești – Fundulea – Tămădău Mare – Ileana – Nicolae Bălcescu.

The other projects to expand the highway network concern routes Bucharest – Giurgiu, corridor IX; Bucharest bypass; Bucharest– Brașov, a branch of corridor IV; Bucharest – Craiova – Drobeta Turnu Severin

– Lugoj – Timișoara – Moravița; Bucharest – Focșani – Roman – Suceava – Siret, corridor IX.

An important part in ensuring fast travel across the territory, but also in establishing local hubs is played by the construction of the bypass highway, with its two sections – southern and northern (Tălângă, 2000).

As far as routes towards Alexandria are concerned, there are plans to build an expressway on the route Bucharest-Alexandria-Turnu Măgurele.

There are several projects that concern railways – some of them begun and partially completed, to varying extents – to build some high-speed railways on extant and new routes (Bucharest – Craiova; Bucharest – Constanța, a new route, corridor IV; Bucharest – Brașov, corridor IV and partly corridor IX; Bucharest – Făurei – Galați) and increased-speed railways on extant and routes (Bucharest – Giurgiu, corridor IX; Bucharest – Rm. Vâlcea – Sibiu – Arad – Curtici, partly corridor IV; Bucharest Nord – Băneasa Airport – Otopeni Airport). There is also a project to build a subway line to link the city to the two airports.

Also as part of the strategy to develop transport infrastructure in this region, mention should be made of the projects to modernize infrastructure and navigation and supply means on the premises of extant airports, Băneasa and Otopeni.

Construction of an airport in the southern part of the area analyzed and resuming the works on the Bucharest-Danube canal would have positive effects on both the capital city and on the area in its vicinity.

All these projects require massive financial investments, but the effects of their transposition into fact will benefit a territory whose current socio-economic development is modest.

The regional transport system. What all these plans fail to take into account is the creation of a regional transport system, which would be interconnected with Bucharest's urban transport system, as well as major routes part of Pan-European corridors or those of national importance (Tălângă, 1995).

A regional transport system of this type should also have an infrastructure of its own, especially in the railway sector, in addition to

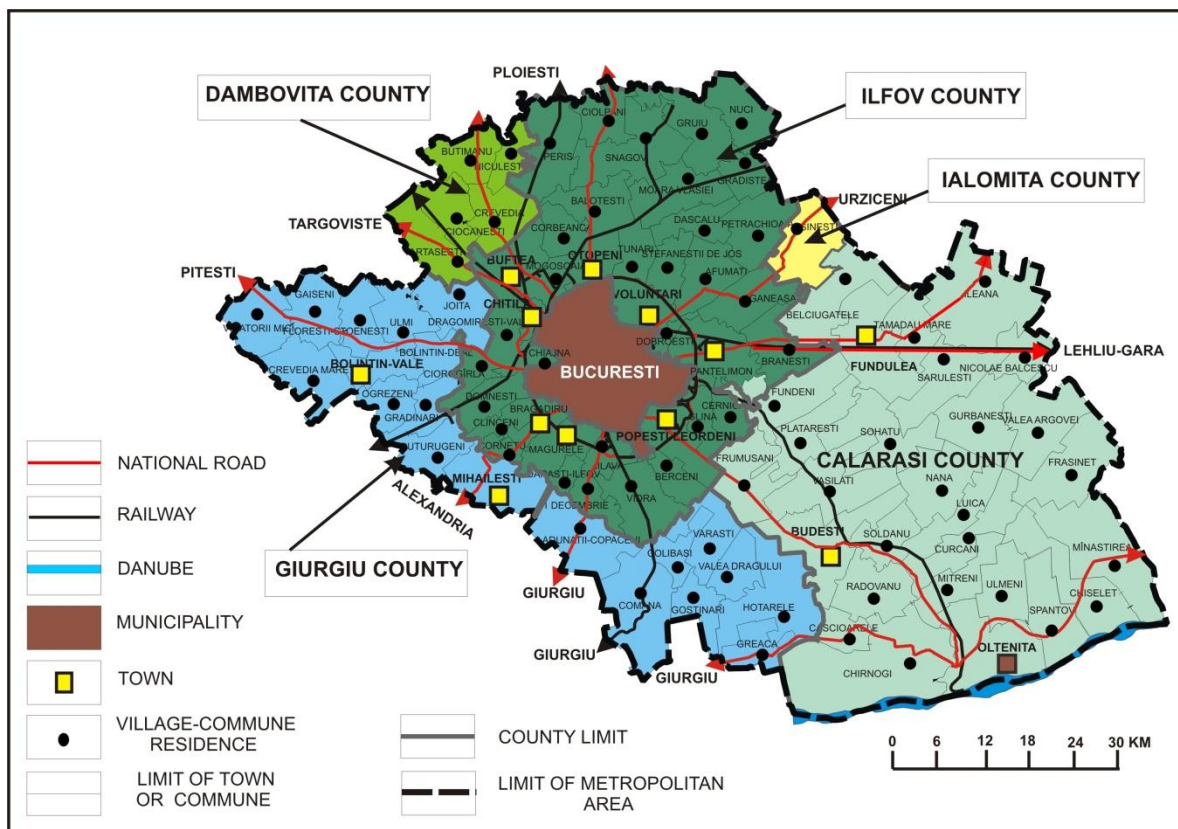


Figure 2. Bucharest metropolitan area

using the county road transport networks. This type of system can contribute to optimizing traffic flows and the ties that are established between the metropolis and its support and influence area:

- Definitive population relocation flows, as well as commuter flows;
- Ties pertaining to supplying food to the urban markets and to the agri-foods industry;
- Ties of industrial cooperation or tertiary-sector cooperation;
- Mutual ties of leisure and recreation;
- Ties of attraction in the field of high-school and vocational education;
- Ties of cultural attraction;
- Ties to supply healthcare assistance;
- Other types of ties.

All these suggestions are meant to correct the current situation in this space by solving – in several stages – the existing problems and dysfunctions.

At the moment, there are numerous localities in this territory that only have access to the county or local road network. The connection of those networks to the national one is unsatisfactory. The unsatisfactory development of the railway network, in its turn, also leads to a difficult access to those communities and to lowering the population's mobility.

One other problem is related to the transport means between the two entities: the metropolis and its metropolitan area. Administrative units in the Ilfov County are privileged, as they have access to the capital city's public transportation network, by means of the existence of urban transportation lines. Accessibility is relative because of misunderstanding, related to funding those transport routes by the two administrative entities: the City of Bucharest General Council and the Ilfov County Council. This focus - of predilection towards Ilfov County – of the suburban public road transport network, is at least partly corrected by the existence of several private transport companies that also supply transport to other settlements located outside the above-mentioned area.

The current configuration of the urban settlement grid requires a boost be given to

cities located on two circular levels (Figure 2): one located in the immediate vicinity of the metropolis, and the other located at some bigger distance. In order to increase their polarization role, but also that role of certain rural settlements, a few requirements are necessary:

- The towns of Otopeni, Voluntari, Pantelimon, Popești Leordeni, Măgurele, Bragadiru and Chitila should become genuine points of connection of the capital city's urban transport system with the regional transport system, by means of using the capital city's bypass railway and ring road.
- The development of the towns of Bolintin Vale, Buftea, Fundulea, Budești and Mihăilești into regional growth hubs involves, among others, enhancing the level of accessibility by road – both to the metropolis and to the metropolitan area overall. This desired state can be achieved by completing the previously-mentioned projects, but also by means of designing and building a new ring road, meant to connect those settlements, and also to connect to the extant highways (bound for Pitești and Cernavodă) or highways under construction or in project phase (those bound for Brașov and Giurgiu, respectively).

## Conclusions

The analysis carried out emphasizes the role of polycentric development of a territory matched against the configuration and dynamics of a regional system of transport in optimizing demographic, economic, administrative and social cultural relations between urban space and rural space.

Using this model of analysis inside the Bucharest metropolitan area highlights a series of dysfunctions, but it also offers solutions for tempering them.

Configuring a genuine regional system of transport, in association with national projects to develop transport networks, leads to enhancing the role of extant urban hubs, to the emergence of rural settlements as local

polarization hubs (for instance, Snagov, to the north) and ultimately to defining the metropolitan area as a metropolitan area.

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