

## THE ROLE OF DEVELOPMENT AXES IN ROMANIA. CASE STUDY: IAȘI COUNTY

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**Abstract:** This article aims at highlighting the role of development axes in territorial development and their importance in the spatial policies. Its main objective is to identify and analyze the development axes in Iași County as well as their linkages at regional and transnational level. It also seeks to indicate the development perspectives of these axes by taking into account their local potentials, the territorial contexts and the major investment projects envisioned for these axes which could stimulate the local economies having potential generalized effects on the development level of the settlements located on these axes, and eventually, on the entire region.

**Key words:** polycentric development, territorial disparities, territorial development

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### INTRODUCTION

Promoting a balanced territorial organization based on the development of polycentric networks to ensure territorial cohesion, socio-economic development and increased competitiveness, represents an important European objective. (European Spatial Development Perspective, 1999; The Guiding principles for Sustainable Spatial Development of the European Continent, 2000; Territorial Agenda of the European Union, 2007; Green Paper on Territorial Cohesion, 2008).

Polycentric development is the main objective of the Strategic Concept of Territorial Development Romania 2030, which aims at integrating the Romanian settlements network in the European polycentric structure of poles and development corridors. The document highlights, in this regard, the importance of structuring and balanced development of the urban settlement network through the formation, strengthening and balanced distribution of development poles, arguing that this objective could be achieved, among others, through development and diversification of the relationships between urban centers, supported by the emergence of development axes related to the major transport axes.

Corridors and axes are generally perceived as linear urban development forms, based on the idea that all major activities can be concentrated along a single linear configuration, which is usually centred on the major transportation infrastructures (Albrechts & Tasan-Kok, 2009; Priemus & Zonneveld, 2003).

Development axes concentrate and spread towards and from the development poles, population flows, goods, capital and information playing thus an important role in their development and dynamic. Also, development axes facilitate the spatial diffusion process of the development from the urban centers towards the near rural settlements. This diffusion process manifests mainly along the major communication routes. Development axes thus play an essential role in the urban-rural relationship.

The development of the polycentric networks determines the emergence of structuring axes which, by their favorabilities, may attract investments and enable a superior development on the accessibility routes between development poles (Peptenatu et al., 2009).

On these routes the traffic and the infrastructure influences to a great extent the local economic and social processes (Priemus & Zonneveld, 2003).

For instance, population flows determine the manifestation of consumer demands in the transit and tourist regions. Such demands stimulate numerous traditional activities, being able, in certain conditions, to spur the economic development of the entire region. Tourist and passenger flows bring an additional demand in the local markets for food products and for numerous other commercial activities. Along the transport axis, relay cities come to develop accommodation, touristic and catering activities (Pottier, 1963).

The modernization of the transport infrastructure may determine the increase of the rural population augmenting the diffusion effects of the additional employment opportunities in rural areas or in their surroundings.

The probability for industries and companies to move here increases due to good transportation conditions, which means new job opportunities. Thus, the transport infrastructure do not only contributes to maintaining the residents who, otherwise, would move somewhere else for finding a job, but it will also attract population from other areas. The development of the transport infrastructure creates jobs in the services sector, such as gas stations, auto services, strip malls, restaurants or motels. The rural areas which are far from the influence of an urban center could become new growth poles due to the emergence and centralization of new services and could develop specialized production (Guangqing Chi et al., 2006).

Taking into consideration the role of development axes in reducing disparities between the most developed areas and the peripheries, as well as the importance that are being granted in the spatial development policies, it becomes apparent the need for including these strategic objectives in the territorial planning process.

This paper aims at providing a model of approach and analysis of the development axes, using Iași County as case study. Located in a region considered to be the poorest in Romania, but with an important demographic potential, Iași County is perhaps the most contrasting counties in the country in terms of development, including very high disparities on short distances.

The main objective of this article is to identify and analyze the development axes in Iași County as well as their linkages at regional and transnational level. It also seeks to indicate the development perspectives of these axes by taking into account their local potentials, the territorial contexts and the major investment projects envisioned for these axes which could stimulate the local

economies having potential generalized effects on the development level of the settlements located on these axes, and eventually, on the entire region.

### METHODOLOGY

To identify the development axes in Iași County it has been calculated a development index by aggregating several indicators considered to be representative for development from the fields of demography, economy, and infrastructure.

The identification of the development axes in Iași County has been done using the cartographic representation of the development index based on statistic data, in correlation with qualitative information obtained through field observation, as well as from other bibliographic sources (geographic literature, plans and strategies for territorial development).

The analysis of development axes aimed at establishing a hierarchy depending on their capacity of structuring the territory and at indicating their existent potentials and their future development perspectives, elements which could be taken into account in the territorial planning process.

### DEVELOPMENT AXES IN IAȘI COUNTY

Several axes with variable development levels and potentials have configured in Iași County. In the figure below (Figure 1) have been represented seven development axes, categorized by their territorial structuring and polarizing capacity of the adjacent areas.

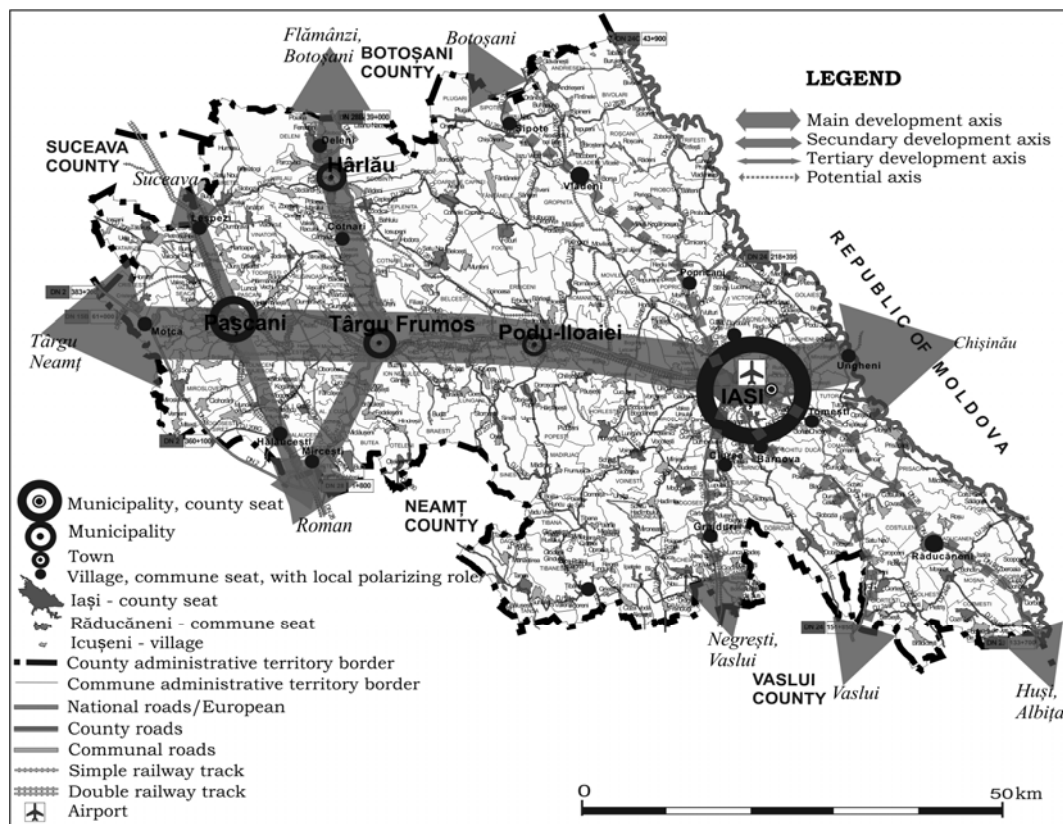


Figure 1. Development axes in Iași County

It is noticeable a dominant axis on east-west direction, in the median part of the county, on the alignment of the localities Iași – Podu Iloaiei – Târgu Frumos – Pașcani, which, in a larger territorial context could prolongate towards east, through Ungheni to Chișinău Municipality from the Republic of Moldova and towards west to Târgu Neamț, town which belongs to Neamț County.

Other two transversal axes, less evident, intersect the main axis and ensure the relations in the western part of the county, respectively:

- Lespezi – Pașcani – Mircești axis, displayed on North-West – South-East which constitutes a segment of the main structuring axis of the North-East Region; beyond the administrative county border it extends towards Suceava in the north and towards Roman, Bacău in the south, along Siret axis.

- Deleni – Hârlău – Târgu Frumos – Răchiteni axis in the direction of Roman, Bacău to the south and Flamânzi, Botoșani to the north.

Other four axes that we have considered to be „potential axes” have begun to configure in relation to the main development directions of Iași Municipality:

- Iași – Popricani – Țigănași – Vlădeni – Șipote axis

- Iași – Ciurea – Grajduri – Scânteia axis

- Iași – Bârnova – Schitu Duca – Ciortești axis

- Iași – Tomești – Osoi (Comarna) – Costuleni – Răducăneni – Gorban axis

**The main axis of the county, Iași – Podu Iloaiei – Târgu Frumos – Pașcani** connects four out of the five urban centers of the county: Iași, Podu Iloaiei, Târgu Frumos and Pașcani and concentrates most part of the population and the activities, being seen as the “backbone of the county” (Iașu & Muntele, 2009).

Iași Municipality, the county seat and the main urban pole of the county is considered a first rank locality in the national hierarchy of settlements system.

As the former capital of Moldova for many centuries, and being a very important cultural center, a prestigious university center and a former administrative and commercial center of regional importance, Iași Municipality represents, after the integration of Romania in the European Union, the main development pole from the eastern border of the EU. Due to its geographical position, the city may be seen as a gate for the Republic of Moldova and Ukraine from the European Union (Ungureanu et al., 2002).

The town of Podu Iloaiei is located in the confluence area of Bahlui with Bahluiet, at 26 kilometers away from Iași, being developed on both sides of the national road DN 28, on a former communication axis, on the roads that crossed Carpathians Mountains and lead to Iași and from here to Crimeea. It has enhanced its importance after building the railway Iași–Pașcani. It is considered a railway node, as it makes the connection between Iași Municipality and Hârlău town through the main railway 606 (Hârlău – Podu Iloaiei – Iași). In 2005 has been declared town.

From the geographical point of view, the town of Târgu Frumos is located in the contact area between Moldova Plain, Suceava Plateau and the Central Moldavian Plateau. The development premises of the town are linked to the location on major communication axes – DN 28 and the main railway 606 Iași – Pașcani, which enables quick connections with Iași, Roman, Pașcani and Hârlău.

Pașcani Municipality represents the second urban locality in the county in terms of size and importance. One of the main factors that lead to the

development of Pașcani city was the geographical position at the cross of main commercial roads that linked Northern Europe to the Middle East, as well as Central Europe to the Eastern Europe. Due to the road network and railway routes, Pașcani Municipality is an important communication node, having direct connections for the passenger and freight transport with Iași Municipality – the county seat, with Târgu Neamț Town towards west, with Suceava City towards north, and with Bucharest, the capital, towards south.

The main axis of the county is configured in the east-west direction along the national road DN 28 (classified as European road (DE 583) between Târgu Frumos and Iași) and the main railway 600 București – Iași – Ungheni – Republic of Moldova.

All the four urban centers located along this axis benefit from road and railway connections that intersect the axis and ensure the connection with the other important urban centers from the North–East Region.

Thus, Pașcani Municipality is favored by a position that enables direct and quick auto connections, being also crossed by the main railway 500 București – Bacău – Suceava – Siret towards Ukraine. For this reason it is considered to be an important railway node in the North–East Region.

The town of Târgu Frumos has developed at the cross off many important roads having quick access towards Iași Municipality and Republic of Moldova to the east, towards Hârlău – Botoșani to the north, towards Roman – Bacău – București to the south and towards Pașcani Municipality through which is connected to the west and north-western part of the country: E583 – towards Republic of Moldova, DN 28A Iași – Târgu Frumos – Pașcani, DN 28B Iași – Târgu Frumos – Hârlău – Botoșani, DN 28 Iași – Târgu Frumos – Sabaoani, and several communal roads). The town also benefits from the railway accessibility (via the railway track SNCFR Iași - Pașcani).

The town of Podu-Iloaiei is located along the main auto and railway axis in the county on the east-west direction, and makes the connection between the town of Hârlău and Iași Municipality through a simple railway.

Iași Municipality has a peripheral position in the Romanian railway system. The road accessibility reduces to a great extent the periphericity of the county seat. Also, the airport is an undisputable advantage as it provides rapid connections both within and outside the country with the destination countries such as Austria, Italy, Turkey or Greece. The main problems regarding the airport are related to the fact that the airport can only receive small airplanes (the landing track does not have the required characteristics to receive the standard international airplanes). Also, the lack of a cargo track for the freight transport displeases especially the investors from the heavy industry. Other shortcomings come from the fact that the road infrastructure as well as the public transport to the airport are not sufficiently developed, due to the fact that these auto connections cross residential areas where the streets have limited traffic capacity (The socio-economic strategy of Iași County, 2008; The Spatial Plan of Iași County, 2006; Ungureanu et al., 2002).

### **Development perspectives of the East–West Axis, Iași – Podu Iloaiei – Târgu Frumos – Pașcani**

The development perspectives of the main axis of the county are primarily related to strengthening the urban poles situated along this axis to better polarize the surrounding areas. This may be achieved both through solving some

current disfunctionalities, as well as through some new investment projects to reach a development vision on the basis of the potentials of the four cities located on this axis, according to their development strategies.

Also, the development of the main axis of the county may be spurred by stimulating the interrelations between poles with increasing the accessibility to ensure better and safer connections both within the county as well as with the regional and transnational territory.

The main guidelines of the development strategy for Pașcani Municipality envision strengthening its position as the second urban pole of the county, and making the most of the advantage of being the main communication node in the county. (The socio-economic development strategy for Pașcani Municipality 2008-2015, 2007).

According to the development strategy, to spur the economy of Pașcani Municipality are necessary, on the one hand, the modernization and retechnologization of the industrial enterprises, as well as the refunctioning the closed industrial enterprises, and on the other hand, stimulating the entrepreneurial initiatives and setting up a new industrial park where will be carried out economic, research, manufacturing activities and technological development services.

Also, Pașcani Municipality could develop as a railway transit center where it could be stored and loaded goods to be delivered to the Eastern Europe, with the execution of the high performance railway axis, designed to pass also through Pașcani train station (ibid.).

The strategy also recommended the building of a small hydropower to generate electricity in the area of the dam at Lunca. The achievement of this objective might also have an important contribution to the development of the local tourism by setting up a nautical base for water sports and training camps for athletes and touristic sport grounds for recovery and leisure.

Another strategic objective for the development of Pașcani Municipality aim at developing its five suburbs - Blăgești, Boșteni, Gâștești, Lunca Pașcani and Sodomeni – for transforming them in satellite neighborhoods with urban-type facilities and at increasing the contribution of the suburbs to the economy of the municipality.

The development perspectives of Târgu Frumos are linked to the location advantages, the town being situated at the cross of some important communication roads.

Some of the proposals made by the economic and social development strategy of the town Târgu Frumos for the period 2008-2015 concern setting up an industrial park and a business incubator, as well as the ring road to attract investors in the area.

Tourism development is another strategic guideline for the development of the town of Târgu Frumos, by the establishment of a swimming pool at EU standards and of treatment facilities for patients using the virtues of the bicarbonated mineral water from Băiceni and Strunga. Also, it could be better promoted the traditional cultural and historical events, such as: the days of the town, the festival of Cotnari wine, the festival “Rose from Moldova”, the Harvest day, etc.

According to the Strategy “Horizon 2020” the main strategic guidelines for the development for Iași Municipality are:

- Developing knowledge-based industries, services and activities driven by ICT (information and communication technology)

- Use of knowledge and talent for innovative-creative industries
- Promoting Iași on a large scale as the cultural and touristic capital of Romania
- Iași should become a services center for the entire North-East Region.

In line with these aspirations, in Iași were initiated several European funded projects which are now in different stages of implementation.

Among these projects, the project “Developing the east-west transport axis in Iași Municipality” aims at rehabilitating 6330 meters of streets on the route - Păcurari street - Mihai Eminescu market- Independence Boulevard - Elena Doamna Street as well as building a new underground passage of 283 meters length in the area of the market Mihai Eminescu. This will enable the connection of the main street of Iași Municipality with the national roads DN 24 and DN 28 to increase the traffic safety degree as a result of reducing the effects of the traffic congestion in a key point in the city.

Together with the other two projects: „Development axis North – South, Octav Băncilă Passage” and “Development of the street network in the cultural, historic and touristic area of Iași Municipality”, and with the previous rehabilitation of other streets and of the railroad station, the main roads in the western and northern part of the city will be completely rehabilitated.

Another project that is about to be implemented aims at the “Development and rehabilitation of the functional road South Iași Municipality”.

The project for supporting the business environment - The Regional Technologic Centre consists in creating a business support structure, which should represent the interface between research and industry in the industrial production.

Another important project for Iași Municipality concerns the leisure area Cîrcă and aims at its modernization, rehabilitation, and restructuring, so that it becomes one of the most attractive touristic areas in Moldova. This project is estimated to be implemented by the end of July 2012.

An important investment project refers to building the Regional Emergency Hospital (in Miroslava Commune) which could add between 700 and 900 new beds in the medical system of Iași Municipality. This regional hospital will be having an integral functionality – investigation, diagnosis and treatment, making possible the effectiveness of the medical service by reducing the time needed and the costs to establish the diagnosis and will attract important flows of population for treatment from the entire Moldova.

Other projects concern the completion of the ring road of the municipality and of the modernization of the airport.

The achievement of the ring road will ensure the relief of the traffic congestion in Iași Municipality by guiding the transit traffic through a direct connection between the two national roads that cross the municipality, respectively DN 24 (European road E 58/ E 581) and DN 28 avoiding in this way the overcrowdings coming from combining the transit traffic with the local traffic when crossing the city.

The project for the airport modernization aims at realizing a flexible track of 3000 meters and the modernization of the air-station.

The improvement of the accessibility on the East-West axis and the connecton of the poles located on this axis with other important centers at national and transnational level will be achieved both through building the highway Ungheni – Iași – Târgu Neamț – Ditrău – Târgu Mureș, as well as

through building the high performance railway (axis 13) Chişinău – Ungheni – Iaşi – Paşcani – Bucureşti – Russe – Gorna Oryahovica – Stara Zagora – Pythion.

The international agreement regarding the achievement of a high performance railway in the Eastern Europe provides that the 16 railway axes will be modernized so that from 2020, on these networks, the passenger trains will travel with a speed of 160 Km/h, and the high speed trains will reach a 220 Km/h speed. In this agreement are also stipulated investments for “simplification and improvement of the quality of any control procedure of the documents or the customs procedures required in the international traffic and for ensuring a superior quality of electronic ticket selling and of other travel documents”.

Another very important project for the development of Iaşi Municipality and of the main axis of the county involves the highway which will link Iaşi to the Western Europe via Târgu Mureş - Oradea, and will have the following route: it will begin from Ungheni Commune and will exit the county on the territory of Moţca Commune.

The highway will cross Neamţ County through Târgu Neamţ, then it will cross the mountains passing by the tail of the Lake Bicz and through Borsec, towards Ditrău, in Harghita County, and then it will continue near Sovata towards Târgu Mureş.

When all these projects will be completed, this axis might become a very important relay for spreading the information, scientific, cultural, economic and technologic flows from the west to the east.

All the other axes in the county are less evident, and have present structuring capacities much more reduced in comparison to the main axis of the county, as well as limited development potentials in the near future.

We will further on analyze the current situation of each of these axes, as well as their development perspectives following their distribution from west to the east.

**Lespezi – Valea Seacă – Paşcani – Stolniceni Prăjescu – Mogoşesti Siret – Hălăuceşti – Mirceşti axis** is displayed on the North-West – South-East direction, being a segment of the main structuring axis of the territory of the North-East Region (Ungureanu et al., 2002). Beyond the administrative boundaries of the county it extends spatially towards Suceava to the north and Roman, Bacău to the south on Siret axis. The only urban pole on this axis, on the administrative territory of Iaşi County, is Paşcani Municipality, the second largest town in the county.

In terms of physical geography, this axis subscribes to Suceva Plateau, overlapping Siret Valley.

This axis is configured along the main double electrified railway 500 Bucureşti – Ploieşti – Buzău – Focşani – Adjud – Roman – Paşcani – Suceava – Vicşani and of the county road of regional importance DJ 208 Neamţ - Iaşi - Suceava currently under modernization. On this route is proposed to be built a highway of national and European importance Bucureşti - Roman - Paşcani - Suceava which will ensure the connection with the west of the country through the route Piatra Neamţ - Târgu Mureş.

**The development perspectives of Lespezi – Paşcani – Mirceşti axis** are directly related to its capacity of attracting private investments following the improvement of the traffic conditions based on the modernization of the road



infrastructure. Also, with the completion of the high performance railway from the East Europe planned to cross through CFR Pașcani station, Pașcani Municipality could strengthen its role as railway node and could develop as a railway transit center for the storing and loading of the goods to be delivered towards Eastern Europe.

According to the proposals of the Spatial Plan of Iași County, the localities Lespezi and Hălăucești are local polarizing centers and could, following their required equipment, to make the shift to the urban status in a future perspective.

We consider though, that there are small chances of this axis to evidentiate in the territory by an increased structuring capacity considering that the investment projects in infrastructure tend to be materialized in a long period of time.

**Deleni – Hârlău – Scobinți – Ceplenița – Cotnari – Balș – Târgu Frumos – Strunga – Butea – Răchiteni axis** extends beyond the administrative border of Iași County towards Roman, Bacău to south and Flămânzi, Botoșani to the north. On the territory of the county this axis connects two urban localities, namely Târgu Frumos and Hârlău, and several urban settlements.

In terms of physical geography, this axis is located (its northern sector) in the contact area of two geographical subunits of Moldova Plateau, respectively Suceava Plateau and Moldova Plain, a contact evidenced by large slopes following the alignment of the localities: Deleni, Hârlău, Buhalnița (Ceplenița), Cotnari, Balș, Băiceni (Cucuteni), Dădești (Costești), Crivești (Strunga).

The transport infrastructure along which this axis looms, is represented by the European road DE 58 that passes towards north to Botoșani Municipality and towards Roman to the south (DE 583), intersecting at Săbăoani the road of European importance DE 85. Also, it crosses the main axis of the county near Târgu Frumos.

On a small part (between Cotnari and Hârlău), it is crossed by the railway axis which links the town of Podu Iloaiei with Hârlău. The proposals regarding the transport infrastructure aim at completing the railway Hârlău-Flămânzi (20 km), and in the future it is considered the section Flămânzi-Botoșani (25 km).

According to the National Spatial Plan (PATN) Section I – Transport networks, approved by the Law 363 from 21 September 2006 it is provided the achievement of an express road between Botoșani and Târgu Frumos, exclusively designed for the traffic of autovehicules, stopping and parking being prohibited.

### **Development perspectives of Deleni – Hârlău – Târgu Frumos – Răchiteni axis**

We consider that the southern sector of this axis (Târgu Frumos - Răchiteni) will develop quicker than the northern one, considering that it overlaps the route București - Târgu Frumos - Iași, most of the flows being spread in this direction, and that Botoșani Municipality tends to develop relations to the west with Suceava, a city that have witnessed a strong dynamic in the last years, and less to the south, with Iași Municipality. The completion of the extension of the railway Hârlău – Botoșani might stimulate to a certain extent the traffic on this route, but it will, most probably have a moderated impact on the development of the settlements on this axis.

This axis could develop through making the most of its remarkable touristic potential, through an appropriate signage and marketing. Thus, the

Thracian-Getic fortress “Cătălina Hill”, the castle ruins from Ceplenița, of the founder chronicler Gheorghe Ureche, Sturdza Castle from Miclăușeni (Butea Commune), the Court from Hârlău (included in the list of the monuments from Iași County) are some of the cultural-historical touristic objectives on this axis.

The cultural-historical tourism could be combined with the leisure tourism which has a notable potential both on the northern part of the axis in the area Deleni-Hârlău due to its lakes and to the forested areas on the Holm Hill and on the southern part where are the Three Ponds, near Strunga.

Cotnari Commune has a touristic potential related to the vineyard landscape of the well known vineyard Cotnari and to its specific wines (the renowned assortment „Grasa de Cotnari”).

Due to its remarkable balneary and climacteric potential, the health resort Strunga could become an important rest and treatment center.

To make the most of the existing touristic potential of this axis it is necessary to equip the localities with tourist stops, accommodation units, restaurants, services, shops for food products and crafts. Also, there are necessary the rehabilitation of the touristic objectives that are part of the local cultural, historical, ecumenical patrimony, the rehabilitation of the accommodations and of the treatment base (Strunga), and the creation, modernization and diversification of the leisure equipment (including fitting and cleaning of the lakes), the improvement of the signage systems for the touristic attractions (boards, touristic maps) and founding information and tourist promotion centers.

Other four axes are configured radially in relation to the main directions of the peri-urbanization of Iași Municipality. One is structured to the north and other three axes to the south.

We will further on analyze each one of these axes.

**Iași – Popricani - Țigănași – Vlădeni - Șipote axis**, is configured along the valleys of Cacaina, Jijia and of Miletin, affluent of Jijia, subscribing completely to Moldova Plain Subunit.

This axis is partially configured along the road of European importance E58 to the locality of Vulturi, it continues along the national road DN 24C to Țigănași and from here it follows the route of the county road DJ 282 Iași-Botoșani, currently under modernization.

#### **Development perspectives of Iași – Popricani – Țigănași – Vlădeni – Șipote axis**

This axis is located in the polarization area of Iași Municipality and crosses an area with a reduced urbanization level. The big distance between Iași Municipality and another urban center on this direction had a negative influence on its dynamics.

Other factors that acted as a drawback to the development of the area was the border with the Republic of Moldova on the east, which has been long characterized by a high degree of ‘impermeability’, as well as its eccentric position within the national and European space comparing to the areas characterized by an important development dynamic.

In the Spatial Plan of Iași County, Vlădeni commune has been proposed to make the shift to the urban status due to its polarizing capacity of the intercommunal areas and for its existent equipment.

Its proclamation as a city will lead to increasing the urban population in the county and will trigger changes related to the migratory flows, tending to mitigate the territorial disbalances and to stabilize the demographic situation in this area.

Also, the modernization of the county road DJ 282 will have direct effects in stimulating the traffic in these areas by reducing the travel time.

This axis crosses territories characterized by an important agriculture potential, and its development could be related to stimulating the emergence of the small and medium enterprises that could use the agricultural products and could distribute them in Iași Municipality.

On a long term perspective, the achievement of the highway Iași – Târgu Mureș planned to cross the communes in the northern part of Iași Municipality could also contribute to the development of this axis.

**Iași – Ciurea – Grajduri – Scânteia axis** is configured along the valleys of Nicolina and Rebricea, crossing the southern sector of Jijia Plain, Iași Slope and the northern sector of the Central Moldavian Plateau.

The accessibility provided by Nicolina Valley, the pitoresque of the area, the good prices of the real estates and last but not least, the proximity of Iași Municipality favored the concentration of a high percentage of urban population.

This axis is configured along the railway Iași-Vaslui and along the county road DJ 248 Iași –Vaslui, which will be modernized. Regarding the rail accessibility, the railway sector from Iași to Grajduri is double unelectrified, whereas the sector from Grajduri to Rebricea is simple unelectrified.

**The development perspectives of the Iași – Ciurea – Grajduri – Scânteia axis** are bound to the modernization of DJ 248 which accompanies the railway.

DJ 248 provides a quick connection between 3 cities (Iași, Vaslui, Negrești and over 20 rural localities, of which 7 are communal seats.

The modernization of this county road will facilitate the connection between the rural localities from the area and the regional urban poles Iași and Vaslui leading to the increase of the mobility of population, goods and services. Also, the connection with the national road network will be improved through DN 15D, a national modernized road that makes the connection with the European road E 85 in Roman City.

The modernization project will contribute to reducing the travel time on Iași – Vaslui route, considering the fact that this route is shorter than that on DN 24 with 9 kilometers, and will improve the traffic fluidity by the existence of two alternative routes (DN 24 and DJ 248).

The modernization of DJ 248 will stimulate also the touristic development of the local rural area, as it will be facilitated the access to the touristic objectives of local and national interest such as: Hlinea Church – foundation from the XVI century, the archeological reservation from Ciurea Commune, The church "Cuvioasa Paraschiva" – foundation of Vasile Lupu – 1636, from Scânteia Commune etc.

Also, it will be facilitated the access of the inhabitants from the rural settlements of this axis towards the cultural touristic objectives of national importance from Iași Municipality. On the railway, the proposals aim at doubling and electrifying the rail 600 Rebricea – Grajduri and electrifying the rail Iași – Grajduri.

**Iași – Bârnova – Schitu Duca – Ciortești axis** to Vaslui is configured along Vasluiet Valley, belonging to the Central Moldavian Plateau in terms of physical geography.

This axis is configured along the national road DN 24 Iași – Vaslui, which gets out of the country on the north of Iași through Sculeni, and which is in a good state. On the south of Vaslui Municipality this road overlaps the route of the European road E581 to Mărășești.

#### **Development perspectives of Iași – Bârnova – Schitu Duca – Ciortești axis**

This axis connects two urban centers of national importance, both county seats: Iasi and Vaslui, and configures on a road of national importance which makes the connection with the IX Pan-European corridor Albița - Mărășești - București - Giurgiu.

These could be excellent premises for the development of the area. The improvement of the relations between Iași and Vaslui could stimulate the flows on this route, provided that Vaslui Municipality would record a positive dynamic and would make the most of the advantage of being situated in the proximity of an important European corridor.

On the territory of Iași County, this axis crosses an area with an exceptional touristic potential, both for leisure tourism and for the religious-cultural tourism, for the scientific tourism and for agro-tourism.

The forest Bârnova, included in the Nature 2000 sites extends on the territory of the communes Schitu Duca, Grajduri, Bârnova, Dobrovăț, and constitutes an important attraction point for the week-end tourism practices by the inhabitants of Iași Municipality.

Other touristic attractions are the cultural-religious objectives of local and national importance. Among these objectives Bârnova Monastery Complex (Bârnova village), and the Church of the ex-Monastery - the Descendance of the Holy Spirit (Dobrovăț village), are classified according to PATN - Section III-B (Law 5/2000) as cultural heritage of national importance with exceptional value.

In Bârnova Commune are cultural-historical objectives of national and local importance, such as: the Church Holy Apostles (Păun village)-historic monument and the complex of buildings which were part of Inculeț Domain, protected area according to the Decision 8/1994 and the Monastery Holy Rock (the hermitage of Tărăță), from the centuries XVIII - XIX (Pietrăria village).

Also, at two kilometers from Bârnova is the village Glade with Fortress, in a magnificent landscape.

At the outskirts of the village, in the glade that bears the same name, there are the ruins of a fortress dating back to Stephen the Great's time.

For making the most of this outstanding touristic potential it is necessary to modernize the existing accommodations, as well as to ensure new accommodations such as cottages, campings, motels, as well as food supply units in the localities located on this axis.

**Iași – Tomești – Osoi (Comarna) – Costuleni – Răducăneni – Gorban axis** towards Albița – is configured along the Valley of Prut River, subscribing in terms of physical geography to the Central Moldavian Plateau subunit. This axis is configured along a national road (DN 28) which intersects the European road DE 581 (IX Pan-European corridor) near Albița, an important custom point located in Vaslui County.

**The development perspectives of Iași - Tomești - Osoi (Comarna) – Costuleni – Răducăneni – Gorban axis** come from the advantage of being connected with one of the most important transport corridors in the Eastern Europe, in the proximity of the border with a country which aspires to the integration into the European Union, as well as from the existence of the cross-border cooperation programmes financed by the European Regional Development Fund (Joint Operational Programme România – Ukraine – Moldova).

Other strategic development guidelines could be related to promoting less familiar tourism forms such as wine tourism, considering the proposals for creating a national tour named “The wine itinerary in Romania”, which includes the route from the North-East part of Romania, Cotnari - Iași - Bohotin - Odobești, this axis crossing areas where are two of the most famous vineyards in the county – that from Comarna, and that from Bohotin (an important wine center known by the variety named “Busuioaca de Bohotin”).

In the local context, the achievement of the proposal concerning the shift of Răducăneni Commune to the urban status could lead to reversing the migratory flows and to stabilizing the local population.

### **THE MAIN CENTERS AND DEVELOPMENT AXES IN THE NORTH-EAST REGION**

In a larger territorial context (of the North-East Region), is noticeable the development of an urban system along “Siret axis”, which groups, between Siret and Bacău, on approximately 250 kilometers, a number of 10 cities from the counties Botoșani, Suceava, Neamț, Iași, Bacău and Vaslui amounting to almost 500.000 inhabitants.

This axis crosses Iași County in its western part through Pașcani Municipality. By its attraction and its polarization capacity, this system may influence the development of the urban system of Iași County, manifesting itself as a counterpoise to Iași Municipality.

The development of “Siret axis” is also favored by the cross-border relationship to the North, to Ukraine and Cernivtsi (Cernăuți) and by the existence of a main railway and of the two airports from Salcea and Bacău (Pascariu, 2010).

This axis ‘divides’ the territory of the North-East Region into two territorial subunits characterized by a different economic and urbanization development level, making thus evident an area on the western side of Siret which includes the counties of Suceava, Neamț and Bacău and an eastern area including the counties Botoșani, Iași and Vaslui.

At the level of the North-East Region three other important axes are configured, being displayed transversally on Siret axis, with a role of thwarting the development on the north-east direction.

One of these axes develops in the northern part of North-East Region, on the east-west direction, along the localities Câmpulung Moldovenesc – Gura Humorului – Suceava – Botoșani – Ștefănești, in a cross-border relation with Republic of Moldova (Bălți), but also to the west towards Transilvania through Tihuța, to Vatra Dornei – Bistrița.

In time, the bipolar system Suceava – Botoșani could evolve as a polycentric multi-relational system, having as balancing poles Dorohoi, Rădăuți, Fălticeni and Pașcani and lots of local poles (Pascariu, 2010).

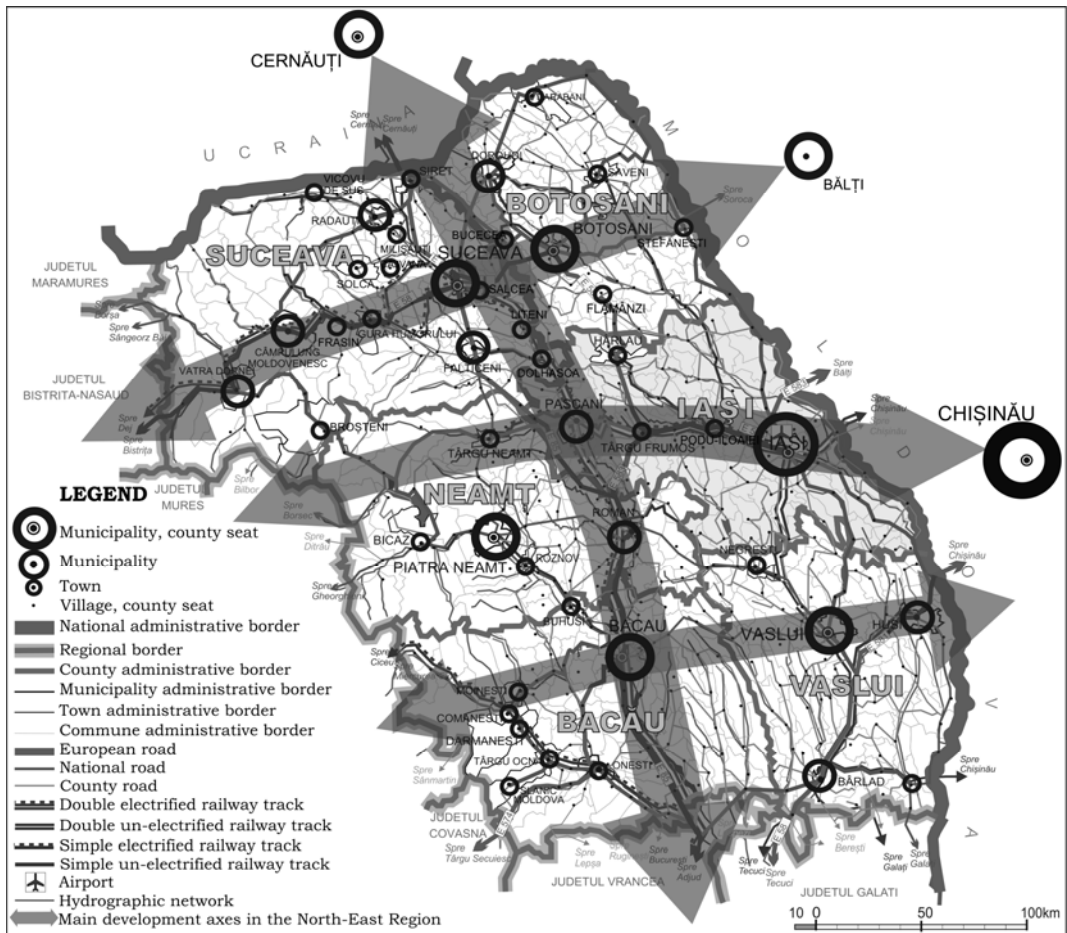
According to the National Spatial Plan, on this route it will be built the highway Cluj Napoca – Dej – Bistrița – Suceava – Botoșani – Ștefănești –

Republic of Moldova. This will ensure a quick connection between the Western and Eastern Europe. The building of the junction legs of county roads between the highway and cross-border points will enable a fluid and safe traffic between the three countries: România – Republica Moldova – Ukraine.

A second axis is developed on the same direction, east-west, in a cross-border relation towards Chişinău, along the localities Iaşi – Podu-Iloaiei – Târgu Frumos – Paşcani – Târgu Neamţ to Târgu Mureş.

The third important regional axis, parallel to the other two, is developed on the direction Huşi - Vaslui – Bacău to Miercurea Ciuc, along important national roads which intersects both the European road DE 85 near Bacău, as well as DE 581 near the cross-border point Albiţa. The last one represents one of the three European corridors which cross the Romanian territory, namely the IX Pan-European Helsinki - St. Petersburg – Moscow – Pskov – Kiev – Liubashevskia - Chişinău - Bucureşti – Dimitrovgrad – Alexandropolis.

In the figure 2 are illustrated the four important development axes in the North-East Region as well as their cross-border relations.



**Figure 2.** Main development axes in the North-East Region

(Source: Adaptation after the Fig. A.1.5. – The inter-county urban system along the Siret Valley, from the doctoral thesis: "The structure and dynamic of the human settlement system in the territorial planning process" – (Pascariu, 2010) and PATZR North-East Region, INCD URBANPROIECT)

It is interesting to notice that the axis which crosses Iași County in its western side and which is a segment of the main development axis of the North-East Region, structured on the north-south direction, does not prevail yet, at the county level by a superior structuring capacity. This fact demonstrates that at different geographical scales development axes manifest and can be perceived differently.

### **CONCLUSIONS**

In Iași County have been identified seven axes with different structuring capacities and different development potentials. These axes have an uneven distribution in the territory, with a main axis on the east-west direction, connecting four out of the five urban centers of the county, and concentrating the majority of the population and activities.

Other two axes are configured in the western part of the county and intersect the main axis.

One of these axes represents a segment of the main structuring axes from the North-East Region, namely 'Siret axis', but which, at the county level (along the localities Lespezi – Pașcani – Mircești) does not manage to evidentiate by a superior structuring capacity. Its rapid development perspectives are also limited taking into account that the modernization proposals of the infrastructure of this axis will most probably be achieved in a long period of time.

The second development axis that intersects the main axis of the county, connects two urban centers, Târgu Frumos and Botoșani and it is structured along the localities Deleni – Hârlău – Târgu Frumos – Răchiteni to Roman, Bacău towards south and Flamânzi, Botoșani to the north.

We consider that the southern sector of this axis (Târgu Frumos-Răchiteni) will develop quicker than the northern sector due to the more increased flows on this route, considering that the traffic plays an important role in reducing the development disparities by stimulating the local economies. Both segments of this axis have a remarkable tourism potential which could be far better exploited through the improvement of the touristic infrastructure and an appropriate signage and marketing.

Other four axes that we consider to be "potential" have begun to configure in relation to the main development directions of Iași Municipality. One of them is structured to the north: Iași – Popricani - Țigănași – Vlădeni - Șipote axis and the other three axes are structured to the south: Iași – Ciurea – Grajduri – Scânteia axis, Iași – Bârnova – Schitu Duca – Ciortești axis and Iași - Tomești - Osoi (Comarna) – Costuleni – Răducăneni - Gorban axis to Albița.

The development perspectives of all the seven axes of county are related primarily to strengthening the urban poles situated along the axes (including those situated outside the administrative boundaries of the county) for a more effective polarization of the adjacent areas. This could be achieved through solving current disfunctionalities, as well as through several new investment projects to reach a development vision according to their potentials.

Also, the development of these axes could be stimulated by improving the relationships between poles with increasing the accessibility to ensure quicker and safer connections both with the county territory and with the regional and transnational territory.

We appreciate that boosting the development of all these axes of the county by firstly exploiting the existing potentials along them could lead to reducing the development disparities between settlements.

Thus, in a first phase, the settlements situated along these axes would evidentiate by a superior density level of population, activities, infrastructure etc., so that subsequently the development is spread, by a more efficient polarization of the nearby areas.

It is necessary, in this regard, a strategic, rigorous and integrated planning including accessibility, land-use and environmental management (Jordaan, 2003), achieved with institutional cooperation. Such a planning seeks to solve the generic conflict between development axes as “spaces of places” and “spaces of flows” (Albrechts & Coppens, 2003; Castells, 1996). Depending on their prioritized development potentials some of these axes could specialize, carrying out various functions: industrial, touristic, technological, commercial, etc. The thorough and consistent planning must be closely followed by an efficient coordination and monitoring so that this development does not happen chaotically, and to avoid the waste of land, the real estate speculation, the urban sprawl along the strategic transport routes, the cutting off the agricultural circuit of the high potential lands, the landscape fragmentation and the absorption of the resources from contiguous territories (the so-called “pomp effect”).

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