ESPON

GROSEE
Growth Poles in South East Europe

Targeted Analysis 2013/2/19

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A Executive summary

1. The advent of a new emerging area at the peripehry of the European union?

This study is conducted at a time when EU trends in spatial development, affected by the financial crisis and economic growth, express the discrepancies between the European core and peripheral areas. Despite efforts in the diffusion of prosperity from the EU central area, periphery performances are delayed. EU 2020 Strategy and the Territorial Agenda 2020 emphasize the importance of geographic areas, such as the development of the Baltic Sea basin and of the Danube basin. Meanwhile, the emergence of new/potential areas in European peripheral space suggests ways to accelerate the development in these regions. The interest for the South-European Space (see) is growing, because despite the available resources, there is still an area with a high degree of isolation and it registers low development levels. The European experience shows that big cities are the main engines of development and in the case of SEE they overlap with the three capitals: Bucharest, Sofia and Athens.

a. Bucharest – Sofia - Athens triangle, a driver for the main economic growth in South-Eastern Europe.

The target to reduce the gap between the SEE and the European core should be reached through faster economic growth, where high concentration of population and economic activities play an essential role in this regard. The study shows that the economy of the three capitals, its associated activities, performance in research, innovation and attracting foreign investments stand as key elements in supporting their transformation into real enlargement engines for an area heavily affected not only by the contemporary crisis, but also by the low level of development from which it once started (remember that Romania and Bulgaria have been integrated into EU structures only in 2007, with the lowest GDP/capita). These cities can leverage to act as engines of economic growth through the cooperation of the three territorial divisions: metropolitan area, national urban system and European urban system. These structures provide different types of resources to the three cities (including best practices).At their turn, these metropolises offer services, goods, high qualified labour force, as well as good practices specific to metropolitan areas and to cities belonging to urban and regional urban systems. The accessibility, human capital, innovative capacity, creativity and institutional effectiveness are to be found at the foundation of growth potential. The interest for cooperation between the three capitals is very low, as the lack of regional policies to stimulate economic exchange both between the three countries and between the three cities is missing. At European level, there is the Danube Basin Development Strategy, which fosters cooperation between Romania and Bulgaria, but introduces a barrier between the two countries and Greece. Therefore, the question arises from defining new policies to facilitate the development of cooperation of Bucharest-Sofia-Athens axis.

b. Which is the added-value of GROSSE project to defining coherent policies for the South East Europe?

This study brings new information on:

- Detailed knowledge of the relationship between each capital city and their metropolitan region, and their role in SEE;
- Estimating the potential for cooperation between the three capitals of the EU SEE;
- Assessment of intra-regional gap, given the different levels of development of the three countries and capitals;
- Awareness of the role of the three EU SEE capitals for neighbouring countries for the future development of the region;

- Develop a set of policy recommendations so that the capital cities could transform their metropolitan regions from a highly fragmented peripheral economy into an emerging one;
- Comparative approaches of disjoint territorial entities, like the metropolitan regions of the three capitals, for the capitalisation of the potential for development through cooperation.
- ESPON database update for the three capitals and states;

c. The roots of current cooperation difficulties between the three cities

The sources of current difficulties in cooperation between the three cities, as specified in this study are: the independent evolution of the three states (hence the lack of regular contacts between the three capitals), relatively large distances, language barriers and differences in development. Even if Romania and Bulgaria were partners during totalitarian regimes, Bulgaria was more dependent on the former Soviet Union, while Romania had dominant relationships with countries in the "third world". During this period Greece was part of NATO and then of the EU.

The first two countries, in the past two decades and at present, have some relation, individually, with core European countries, but disregarding each other. A vital liaison is only tourism, but this does not have significance on the relations between the two capitals. Sofia is situated about 350 km from Bucharest and 800 km from Athens. In the absence of a direct highway between these cities, distances are discouraging cooperation. The third difficulty lies in the spoken languages, which are totally different: Romanian language is Latin, Bulgarian language belongs to the Slavic languages and the Greek language comes from a different family. Because none of the three languages is of large international use, the main dialogue is being realised mainly in English. The fourth premise that creates difficulty arises from low (Romania and Bulgaria) or medium (Greece) development level. This reality encourages cooperation with more developed states and capitals, at the expense of a direct cooperation between the three states and their capitals.

d. Three South-east European metropolises with three specific hinterlands

Physical and geographical diversity of the three capitals make their hinterlands totally different. Bucharest and Sofia are situated within the mainland, while Athens in an area with direct access to the Mediterranean. The differences in morphology of Bucharest and Sofia metropolitan regions are determined by the fact that the first is located in a wide plain, while the second in a mountain depression, which introduces several distinct features. As a result, the hinterland is fringed in Athens, due to the interpenetration between sea and land, hinterland in Sofia is dominantly extended on directions and bay basins, while the one in Bucharest is characterized by a relatively concentrated development around the city. Symbiotic relationship between Athens and Piraeus turns Athens hinterland into a complex of functions with a clear influence in terms of contact with the sea. Bucharest and Sofia are characterised by a hinterland that is structured according to the classical models imposed by the decreased influence capacity of the metropolises from the center to the periphery. Recently, there is a tendency for the development of new inter-metropolitan emergent areas that disturb these models, but valorise better the development potential of the metropolitan regions.

e. Trilateral cooperation potential, but few results.

Each of the three capitals is a millionaire city, detaching Athens, with nearly 4 million inhabitants (35% of the country's population). Bucharest and Sofia have 1.94 and 1.1 million inhabitants representing 9.05 and, respectively 15.2% of the population of the two countries (Romania and Bulgaria). Their contribution to the national GDP is much higher, exceeding the demographic weight by two or even three times (Bucharest contributes to the national GDP with 22.2%, and Sofia with 39.6%) The potential for cooperation is important as Bucharest and Sofia recorded a GDP structure in which services have room for growth, and Athens can provide examples of good practices in this regard. Foreign investments localized mainly in the capital, especially in the cities of Bucharest and Sofia is another element that could define a potential for cooperation in this regard through joint policies. For all three cities, terrestrial connections with other capitals of

European countries are much far beyond the ones between them. Despite this potential for cooperation emerged from economic and demographic strength of geographical proximity, the results of cooperation are less significant at regional and national.

f. Financial and economic crisis sets new policies for regional development?

Financial and economic crisis has strongly affected SEE, particularly Greece, and this is reflected in the study, especially by the increase in unemployment, both for country and metropolitan regions. All three countries have become more or less dependent on international resources coming from the IMF, World Bank and EU. Reduced investments allocated to the development, the shift to austerity budgets, rising social costs during this crisis, drove the states in the region to reflect more on endogenous development policies, by exploiting national strengths. At the same time, the crisis should encourage states to move towards the development of cooperation with the states in proximity, on one hand, and to define strategic objectives of regional cooperation, jointly with the European core states, on the other hand. A common strategy focused on the genesis of an emerging European growth area can mitigate the effects of the current crisis.

g. Low signs of genesis of an emerging development area in SEE

The study shows that, at least for now, the three capital cities are growth engines for their countries, but they do not have enough power to decisively contribute to the creation of an emerging area in this part of the EU. All the capitals outline metropolitan regions that could become emerging at national level, where legislation on cooperation in such areas will be regulated and encouraged.

2. The "territorial egoism" facets of the three national capitals

Inside the three countries, capitals have the tendency to increase their role in the development process through the concentration of economic activities related to the services sector. Analysed in terms of their behaviour inside their national urban systems, the continuation of this process without being countered by a real decentralization process makes us define it as similar to a "territorial egoism."

a. Hypertrophy trends and behaviour characteristics of a "predator" type in the national urban systems and metropolitan areas

The three capital cities stand out from the second tier cities, differently, from the number of inhabitants' point of view: Bucharest exceeds 6 times the next town, about 5 times Sofia and Athens over 3 times. Compared to the Greek urban system, where Thessaloniki is a major competitor to Athens, in the two other urban systems, the second tier cites represents a „prey" for capitals. If in the Bulgarian system there are just two cities on the next level, when it comes to Romania, we can refer to six cities. In the latter case, the 6 cities ranked in turn as second in the national urban hierarchy, change their place in the hierarchy from one year to another.

In relation to metropolitan regions, unlike Athens, Bucharest and Sofia stand for "predators", attracting surrounding resources and producing development deserts around them. In this case, the exception is the northern part of Bucharest metropolitan area, where the rest of it and especially the southern half is one of the poorest in the country.

b. Individual functional restructuring as first step

If Athens has developed without significant ruptures of the path through a continuous development of the tertiary sector, Bucharest and Sofia were characterized by a shift from extensive industrialization to a relatively sudden change to the service sector, dominated by common services. They were initially targeted to cover the deficit in trade services in the metropolis, and to banking and financial services, business services, education (especially private), the great trade (large companies locating commercial basis), medical services. Industrial enterprises inherited from the totalitarian regimes were closed or privatised, and their place was taken by activities mentioned above or new housing complexes.

c. High valorisation of the creative potential of the labour force

The significant increase in the number of students in the last 10 years, by multiplying academic activities, a much higher rate of employment in the capital, compared to other regions of the country (especially Romania and Bulgaria) have increased the share of highly educated people in the total population. The study shows that all three capitals hold more than 50% of the expenditure for research and development, with considerable human potential in the field. New investment in nuclear physics located in Bucharest can be a new element in developing a network of Balkan cooperation in the field of applied nuclear physics***.***

d. Urban sprawl and the destruction of the local identity of settlements

All three cities have encountered in the last two decades, urban sprawl processes, more moderate in the case of Athens, but very pronounced in the other two capitals. Urban sprawl of Athens has always been governed in accordance with the strategic plans developed across the region. In contrast to the controlled development of such a process, for Sofia, especially for Bucharest, the urban sprawl was chaotic, creating numerous problems related to the lack of urban facilities, easy access to local services, environmental quality, etc. Urban sprawl process has advanced more quickly than the regulatory process, especially in the absence of cooperation and connections to a master plan. The influence of the metropolises on the nearby urban and rural areas was so strong that in some cases led to a completely loss of the adjacent areas 'identity, while there would coexist two separate worlds: a traditional, rural one and another one where people have an urban life, deployed in the city and are using the village or the town just for accommodation.

e. Good practices in urban planning.

The urban development that Athens registers, the regulation of relations between the metropolis and other cities in the metropolitan region can be an example of best practices that could be followed by the other two cities. For a better knowledge in urban planning it is necessary to establish direct connections between the three municipalities and networking professionals that converge to substantiate actions targeting urban restructuring, trying to find ways to mitigate the impacts caused by urban sprawl, and project in the future the main targets of cooperation in this field.

3. Are the three capitals the main drivers for competitiveness in the region?

The importance of the three capitals for national economies and for the whole SEE area is evaluated in the study, which concludes that they are the main engines of development in this part of Europe. Their role in enhancing regional competitiveness, in the diffusion of best practices related to the proper management of resources and the use of opportunities offered by the respective states in the EU integration is crucial. Therefore, increasing the capacity of these cities to better valorise their space, material and human resources are the easiest ways to promote smart, sustainable and inclusive development in SEE.

a. The three capitals as islands of competitiveness at the national levels

The study reveals that for each of the three countries, capitals are true islands of competitiveness, because most foreign investments are concentrated in here, the financial sector is highly developed in relation to other urban centres, becoming a strategic one for competitiveness or other activities like research, higher education, information and communication technologies. All this ensure a rapid increase in GDP per capita, which exceeds by several times the amount recorded in the second tier cities, except the relationships between Athens and Thessaloniki.

b. An important human capital

Through analysis and quantitative data, it is being shown that the three capitals have sufficient human capital and we are witnessing an increase in its quantity and quality. Employment rate is relatively high and the age structure shows a growing demographic potential. Other demographic and social characteristics reveal that human potential is well educated and significant reserves are

given taking into account an under-utilization of women and young people of working age. With such a human capital, all three cities are likely to maintain and enhance their role as drivers of competitiveness in SEE.

c. Each capital is the most creative city in their country

There are large discrepancies between the three countries and capitals about harnessing creative ability. Thus, Romania and Bulgaria have demonstrated a level of creative performance much lower than Greece. For each country, the capital is required as the main promoter of innovation and new technologies, of the creative industries in general. In terms of people working in the research field the average is comparable to the european one. On the other side, the level of the expanditures on research and development as well as the long term investments in this sector are much lower in the three capitals in comparison to other large cities in western and northern Europe.

d. The three capitals as the core of sub-regional urban networks

SEE urban network does not work like a classic urban system, but like a multipolar urban system in which each capital is "core" of their national urban system. Having this quality, the three capitals possess functions which dominate more or less their national urban networks. If for the Bulgarian and Romanian urban systems, there are no clear signs of softening of the capital hypertrophy, by an accelerated development of one of the regional cities, for the Greek urban system the city of Thessaloniki is emerging as a strong urban centre for northern Greece and even the Central-Southern Balkans. Political administrative functions of the tertiary sector and those of highly specialized industry turn the cities into real engines for the functioning of national urban systems.

e. How the crisis affects the competitiveness of the three capitals?

The study shows that the current economic and financial crisis is felt on the competitiveness of the three capitals. Dynamics of competitiveness before the crisis was very high for Bucharest and Sofia, reflected directly on the two metropolitan regions. For Athens this dynamic had been registered earlier to the ones in the capital of Romania and Bulgaria, but it was much more affected by the crisis. In all three capital cities and their metropolitan regions, elements defining competitive forces have been quite low and registered negative values: GDP per capita, foreign investments per capita, expenditure on R & D productivity, increasing unemployment.

f. A limited influence of the three capitals on the region's competitiveness

If in the three capital cities the rates of labour productivity and of employment are the highest, the unemployment rate is lowest (all defining competitiveness), at a regional level, all these effects are felt very limited both spatially and from a sectoral point of view. Competitiveness influences are stronger in adjacent areas to these cities, in areas with high accessibility over large axes and development corridors or places that offer attractive recreational facilities. Although these capitals have become increasingly competitive, we can still talk about areas with populations within their metropolitan zones that are at the limits of poverty. GROSSE project presents such areas, as well as those who have suffered because of the decline in terms of construction investments.

g. Is there a relationship between the patterns of land use and regional competitiveness?

Population growth and the evident tendecies of abandoning the flats for the workers, built during the communist regime , on one side and on the other side, the industrial destructuring with effects on the land use in the capitals and outside them.
The existence of many abandoned or unused land due to the closure of former industrial enterprises, reducing the visible green spaces in urban areas, buildings and land restitution and property markets blockage lessens the potential for increasing the competitiveness of the capital cities and regions. Instead growth areas built outside the three capitals , in terms of enforcement of the urban planning regulations, forest and lake areas are elements that attract investors, increasing regional competitiveness. Despite the high fragmentation of land and intensive urbanization often chaotic and a reduced accessibility to urban utilities, the study concludes that the decline in

agriculture in favour of built space led to an increase in terms of the capitals and regional competitiveness.

4. Improving the role of the three metropolises in the European polycentric network - the interaction between them.

As an assembly of states, the European Union is based on the strength of national urban systems, the ability of large metropolitan areas and urban clusters to provide produce and disseminate development. The peripheral position of national urban systems of the three countries, the weak cooperation relations with other EU capitals and with the „European Pentagon" (excepting Athens) makes it possible for them to be functional only at national level (Map 1). On a map of the SEE, we may support the idea of extending this urban system from a national to a regional level, bringing together all three national systems to which other cities in the region might be added, cities that do not belong to the EU for the moment. Functioning as an emergent and efficient regional urban subsystem, a better integration in a polycentric continental structure would be much more easily achievable (Map 2).

a. Restructuring the relationships between the core city and surroundings of each capital

It is necessary to restructure the relationship between the city itself and its surroundings in order to increase the role of the three European capitals in the polycentric network. Inside the capital, the connection between the central, industrial and residential areas is outlined on satisfactory terms. Regarding relations with the FMA, there are differences, with a much better accessibility for Athens and lower for the other two capitals. Actual connections between Bucharest and Sofia with their metropolitan regions are realized through separate transport systems, depriving them from multimodal centers as connection points. As the administrative metropolitan region is very fragmented, there are conflicts between the capital and surrounding towns that lead to the temporary suspension of public transport.

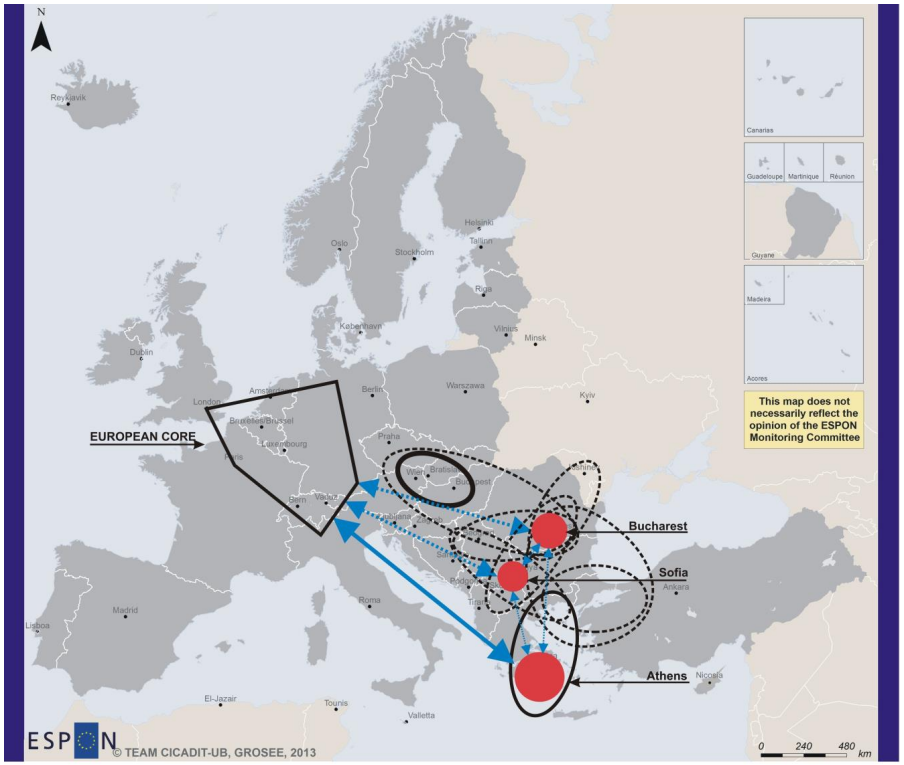
Restructuring relations must take into consideration the flows and their content, whereas capitals encourage investors to develop activities in metropolitan regions: location of new large shopping centres, the logistics firms, some sports complexes or new industries are becoming more common in peripheral areas, on the territory of the cities and towns within metropolitan regions. The new relationship between CC and surroundings is also based on commuting which newcomers make in areas of the metropolitan region and travelling to and from jobs.

The existence inside of metropolitan regions of new economic emerging areas is likely to emphasize the urban de-concentration and decentralization of activities. These local development poles especially in poor metropolitan areas (as in the southern part of the metropolitan area of Bucharest), improve local living standards and create prerequisites for future clusters focused on recreational activities or high-tech.

b. The role of the European corridors for a better connection between the three capitals

By analysing the main European TEN-T, we conclude that Bucharest-Sofia-Athens axis is not intersected by it. European corridors favour the individual connection of each of these capitals with Central and Western Europe. For example, corridor number 9 provides direct connection for Vienna with Istanbul, passing through Bucharest; the Danube corridor does not connect directly to any of the capitals; corridor number 4 and corridor number 10 may provide the link between Vienna and Athens. It is clear that from these corridors would benefit Bucharest and Sofia, in relation to Athens. Building the highways that will allow these fast connections is still far from being completed. To establish a connection between the three capitals it is required to build branches of these corridors, even if the connection time increases.

Map1 Position and current relations between the three capitals



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Regional level: NUTS 0
Source: CICADIT-UB, 2013
Origin of data: ESPON MAP Kit, 2013
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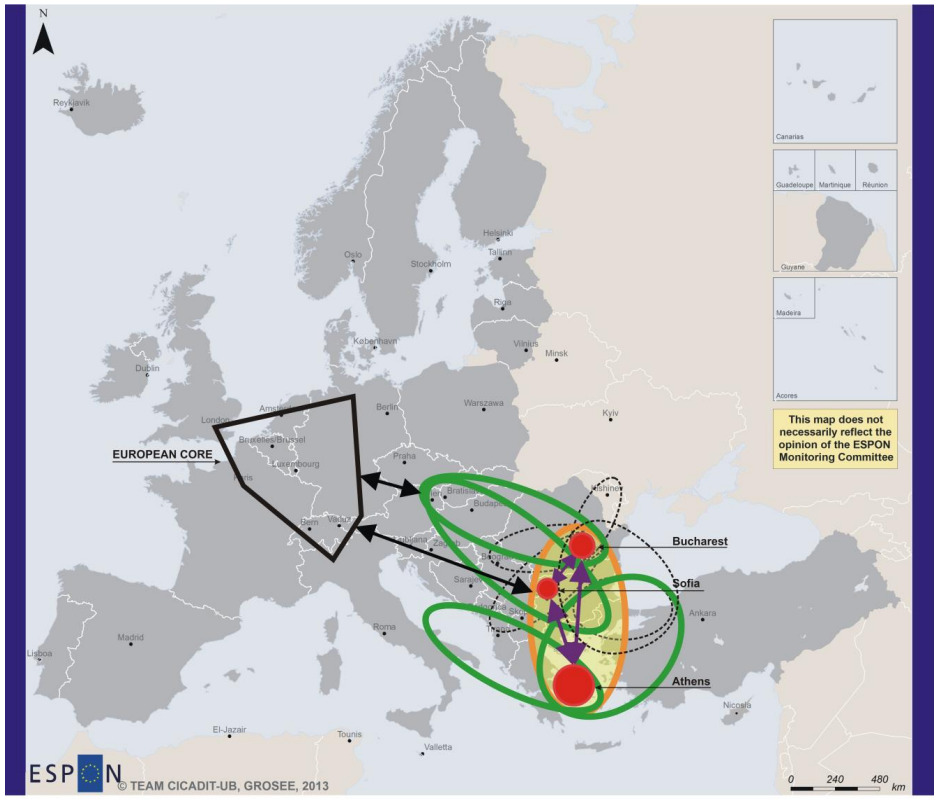
LEGEND

- Areas and directions of strong and very strong relationships
- Areas and directions of weak and very weak relationships
- Population size

Map 2 Position and consistency of the foreseen relations between the three capitals



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Origin of data: ESPON MAP Kit, 2013
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LEGEND

- Areas and directions of strong and very strong relationships
- Areas of weak relationships
- Area and directions of strong relationships in the SEE
- Population size

c. Could the TEN-T network be improved in order to facilitate the connection of the three capitals with the European Core?

The study shows that the major European transport network partially connects each city analysed with the European Core. This network could be improved by doubling highway corridors with high-speed trains, particularly for the transport of persons. At the same time, there is a lack of a north-south corridor, linking the three capitals with other cities in Eastern Europe, even connecting to Helsinki. This corridor would connect Athens to Bucharest, being useful for the whole SEE area in order to give it some consistency. It would be essential to improve relations across Europe.

The Danube corridor would be extremely highlighted if the project concerning the linkage of Bucharest through a navigation channel would become reality. Otherwise this corridor would have a secondary importance for Bucharest and a reduced one for the other two capitals.

d. Estimating the „hub" role of the three capitals inside of SEE urban network.

Given the functions of capital and economic metropolis that the three capitals have, they act as key nodes in urban networks, as national powers to extrapolate the whole SEE area. Therefore, the study shows that the operation of trans-European transport corridors, including the links with the three capitals, will emphasize the role of "hub" of these capitals, particularly of Sofia and Bucharest. Their ability to polarise may extend to an urban network that transcends national boundaries, on one hand, and functional diversity can create a web of relationships with other capitals of the new states in this space. Strengthening the EU's eastern periphery and its functionality as part of a whole implies a north-south trans-European corridor that will stand as a ‚backbone' including the SEE area. This could increase both the role of the three capitals and other urban centres such as Thessaloniki, Varna, Cluj-Napoca, Timisoara and Iasi.

5. Building a new development policy to support an emergence of a competitive area concentrated on Bucharest-Sofia-Athens.

The genesis of a SEE emerging growth pole based on the three capitals is a target that depends on how the premises are valorised and there is a support for competitiveness growth of these motors of regional development. Based on the interviews with various decision makers, experts and practitioners, we were able to retain some ideas to base policies to support the process of development of such areas.

a. How to restructure the relationships between CC and metropolitan areas in order to increase competitiveness

One of the frequently asked questions in the study, for which we tried to find an answer, is how relations between the city and metropolitan region can be restructured in order to increase competitiveness in both territorial entities. For the first case the most important path is to help diversify the economy through territorial cooperation, by the valorisation and processing of the local resources in order to give them a higher value and by the investment of the gains in some specific fields on the regional, continental and global market. The second is to provide an infrastructure capable of fluent exchanges between CC and metropolitan regions, to encourage population mobility and investors. Networking between universities, research institutes and companies is essential in the formation of dynamic clusters that promote results and attract investment capital to increase competitiveness and its metropolitan area.

b. What kind of policies could promote cooperation between the three capitals?

All the persons that were interviewed felt that there is not enough cooperation between the three capitals. To promote sustainable relations of cooperation is necessary to establish a regional strategy that contains different types of policies, focusing primarily on opening to a mutual understanding of the decision-makers at the national level and in capitals. The potential for cooperation of the three capital cities and their metropolitan regions is poorly known, as well as the

main economic, social and cultural potential of each one. For the moment in the three capitals, the decision makers 'vision is especially focused on community issues and cannot foresee the benefits of the mentioned cooperation. A specific development strategy promoted at the EU level could prove to be beneficial in raising the awareness for transforming this space in an emergent economic and cooperation area.

c. How might each of capital city use the national networks to promote cooperation between them and increase competitiveness?

Overall, it is difficult for a capital to use the national urban network as support for promoting cooperation with the other two capitals. In particular, capitals could support cooperation between cities from bordering regions, and later use them as a bridge for cooperation with neighbouring state capitals. Meanwhile, the encouragement of tourism activities by developing a complementary tourism, including cooperation between the resort towns/cities for an opening of relations between the three capitals and countries is still questionable. If Greece and Bulgaria represent a touristic attraction for Romania, Romanian mountain resorts, as well as Bulgarian ones, could be attractive for Greek tourists during winter time (winter sports). Economic specialization of certain cities, by complementarity, could be useful in the trans-Balkanic cooperation process.

d. Why aren't the TEN-T priorities in the national policies of the three countries?

The biggest problems with the operation of TEN-T are in Romania, which has not had a coherent program to attract and distribute European resources. Even though this program is now available, there are not enough financial resources. For Bulgaria, trans-European corridors were a priority and the results are more visible. Greece has a transportation network that meets the requirements of a good ground connection to the European Core. Fragmentation of these corridors along with the lack of financial resources restricts connections with Western Europe and also the possibility of connecting the capitals to some of these corridors. The study concludes that there wasn't an overall vision and awareness of the importance of these corridors to hasten the development of the SEE.

e. Is there a well-defined set of needs? The opportunities and strengths for a transnational and cross-border cooperation are known in the three EU SEE countries? Which is the role of the metropolitan regions in this regard?

Interviews conducted from June to September 2013, and the three workshops held in Sofia, Bucharest and Athens have highlighted the mutual (reduced interest) of policy-makers and practitioners for cooperation between the three capitals. The main underlined idea underlines the idea of the difficulty to link , for example, Bucharest needs with its strength in order to cooperate with Sofia and Athens and vice versa. Sofia and Bucharest cities have almost identical needs and do not foresee their fulfilment through cooperation between the two capitals. In addition, interviewees do not see very clear how metropolitan regions may participate in the initiation of cooperation between the capitals. The main difficulties result from the fact that Bucharest and Sofia don't have defined metropolitan regions, which in the present study are approximated to their development regions. This remains an area for future research.

f. The role of the new INTERREG in the future programming period.

Given the limited effects of previous INTERREG programs, interviewees considered that the existing results should be used to emphasize aspects of territorial actors' awareness, the importance of "cooperation proximity", which means lower cost, mutual benefits and increase of regional competitiveness. INTERREG could support projects of direct cooperation between the three capitals or coastal cooperation in the Black Sea region.

g. Key policies to enhance the accessibility to European core urban network

A large distortion in the accessibility to European urban core network is that Western Balkan is not part of the EU. Because of this, key policies to increase accessibility focus upon certain corridors, not always the most direct ones. Some of the key policies in this regard could concern:

- Finalising TEN-T 4 and 10 and connecting Romania and Bulgaria to the European network of motorways and high-speed railways, the completion of Calafat-Vidin Bridge is a first successful project in this direction;
- Increasing the functionality of the Danube corridor, resuming work on Bucharest-Danube Canal;
- Upgrading and expanding the airports of the three capitals, as well as of the second tier cities (Thessaloniki, Constanta, Varna);
- Long term policies must lead to the creation of a Balkan corridor, which should connect the Danube corridor to the Aegean and the Mediterranean Sea. Branching from the Danube-Mediterranean corridor connections can be made with Central and Southern Italy, the Adriatic and Western Balkans, Central and Western Europe, and the Near and Middle East (through connections with Istanbul) and other countries in North-Eastern and Eastern Europe.

6. Need for further research

This study is a challenge for further research by identifying appropriate methods of management of a disjunctive space into one that should foster development. Relatively large distance between the three capitals and poor infrastructure between them, plus a non-linear historical development and different cultures, make out of SEE a space that before becoming emergent, must have common goals. Mutual knowledge of the development potential and the ways in which it can be multiplied, as a result of joint projects, can increase the capacity of interaction with the European core. What are those projects that can be steps to achieve a territorial entity that functions as a whole based on European principles? They are the immediate objectives of future research.

a. Arguments for continuing territorial research in SEE

Despite achievements in the short time of EU accession of Romania and Bulgaria, SEE space remains highly fragmented and far from being a unitary space, targeting joint development. Briefly, the arguments for further research on this area are:

- SEE area is one of the most diverse in history, ethno-linguistic structure, level of economic development and living standards. EU enlargement, including other states, especially Western Balkans will further complicate this structure. Research on finding solutions to capitalise this diversity through sustainable development of the whole area are welcomed. Starting this research focused on three countries, highlighting the importance of urban systems, will be an important asset for expanding research on the extent of EU enlargement. Economic growth and improving living standards of EU member states are the best arguments for future members to put this before history;
- SEE space is one that ensures terrestrial transcontinental connection of European Union with Asia and Africa, and this function should be strengthened by strong and successful territorial cooperation framework. Further research on the SEE urban system could be much more useful for a proper assessment of regional disparities and to demonstrate how a polycentric development can be helpful in reducing them.
- Black Sea, Aegean and Ionian Sea and mountain areas can be investigated from the perspective of sustainable development and good practices in the management of such areas, in terms of global climate change;
- The major urban agglomerations of SEE deserve special attention for effective management and increase their interactions with European core;
- It is necessary to establish a complex research centre on this space to propose EU states and communities current research projects.

b. Further research

Research could be focused on three main levels:

- Awareness of the importance of territorial cooperation between partners in this area;

- Knowledge of the potential for cooperation between countries / capitals / cities in the region;

- Detecting items of common interest and of strategic interest for the EU.

An important role in defining research programs would be proposed by a possible foundation of a research center in the field. Similarly with the NORDIC Center, could be founded the Centre for Research on the Development of the SEE.

B REPORT

1. Introduction

This study is conducted at a time when EU trends in spatial development, affected by the financial crisis and economic growth, express the increases of discrepancies between the European core and peripheral areas. The main idea of the study derives from the fact that the three metropolitan regions (Bucharest, Sofia and Athens) might have in achieving the project goals: (1) to analyze the role of the Capital Regions in South-Eastern Europe (SEE) in the European urban network, (2) to identify what type of actions are needed in order to improve the relations between these Capital Regions and the European core economic development area, and (3) to make policy recommendations regarding the economic and territorial development of these metropolitan areas.

The new economic tendencies had an important role in diminishing the management role of the State through deregulations and privatizations (Mulaert et al., 2001), by sustaining entrepreneurial initiatives, by attracting domestic and foreign capital, and by sustaining public-private partnerships. In this framework, Bucharest and Sofia have to deal with the lack of institutions capable to amplify these processes of strengthening their urban national systems in the SEE. The construction of their metropolitan institutions becomes the key element to promote interconnectivity (by inter-locality cooperation) (Brenner, 2003).

Answering to the questions in the project proposal, the study provides elements which ensure the achievement of the main goals set. In that respect, the comparative analysis of the three metropolitan regions might be an answer to the question regarding the main drivers of competitiveness. It reveals that the three countries and capitals have a considerable human potential in R&D. Their share in the total employment is growing and does not differ so much from the EU average. The low expenditure in R&D despite its increase (a slow one) remains much lower than the actual EU average as well as the Europe 2020 target. Meanwhile Athens performs better than the two other capitals. The three metropolitan areas function as a type of “island of high technology and innovation” in their countries or, in other words, they do not redistribute enough innovation and technological readiness to their countries. However, they also have a good position in comparison with other EU metropolises and the potential to compete satisfactorily at EU level, if they succeed in increasing their expenditure in R&D.

In response to the question regarding the accessibility of these cities and the improvement methods, including the efficiency of the European transport corridors, the project offers a detailed analysis on the connectivity and accessibility within metropolitan regions, as well as at national and European level. The accessibility at intra-metropolitan level shows that for Athens the challenge is to develop the public transport, while Bucharest and Sofia should answer to the growing demand for urban transportation (this would suppose combining the improvement of public transport with that of the road network). The accessibility at a European and regional level has been analyzed by taking into account the traffic and the existent transport infrastructure. The importance of the three capitals in the air transport was also pointed out, in particular the connections between these and other cities in the region. TEN-T Networks have been drawn to insure the north-south or northwest-southeast connectivity (from central Europe - Vienna and Budapest towards Athens and Istanbul). They reinforce, once more, the centralist position of the capital cities (Bucharest, Sofia, Budapest, Vienna, Zagreb, Ljubljana) and insure the most important internal needs – Sofia to Black Sea, Bucharest to Black Sea and to west, Athens -Thessaloniki or Via Egnatia (east-west). The achievement of an efficient Trans-European Network plays a crucial role in the attainment of the Europe 2020 strategy in terms of building missing links and removing bottlenecks along the European infrastructure.

To reveal the role of Bucharest, Sofia and Athens in the European polycentric network, the project presents some elements, such as those related to the place occupied in various European and world hierarchies, the three metropolises, connectivity with relevant regional cities (Thessaloniki, Istanbul, Belgrade, Sofia, Varna) as well as the cities of Central Europe (Vienna and Budapest). In

order to assess the insertion potential of these metropolises in the European polycentric network, the analysis undertaken on competitiveness shows both their strengths and weaknesses.

The results obtained in the three workshops, as well as the synthesis of the interviews were used to improve the initial policy recommendations and to formulate new ones. These form a compact chapter in the final part of the study. In the next stage the TPG will continue taking interviews with other key persons in order to define some projects that would improve the competitiveness and the growth of cooperation between the three capitals and between the latter and the European Core

Besides the direct results, convergent with the project goals, GROSEE provides an interesting input for other European projects, such as FP8-Horizon 2020, with its domain Better Society, especially the axes "Health, demographic change and wellbeing" and "Inclusive, innovative and secure societies".

2. General methodological approach

Despite the location in the same geographic space, the physical, ideological, linguistic and historical barriers determined a poor cooperation between Romania, Bulgaria and Greece until 1990, which has been improved but has not reached yet a sufficient level. The main hypothesis on which this research was focused is as follows: the three capitals might become the engine of a systematic cooperation between the three countries and between them and the European core, having as a result a better integration in the European urban system.

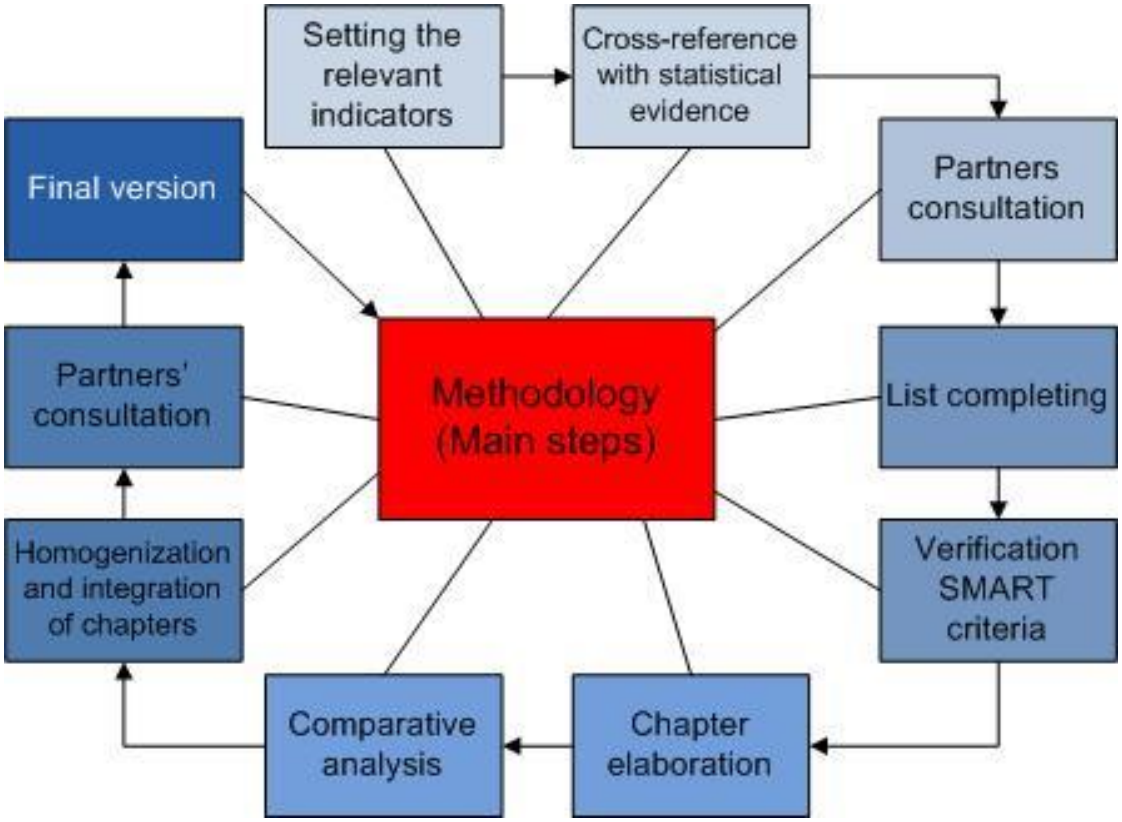
To test this hypothesis, a first set of analysis aimed at the relationship between the structure and dynamics of each capital and its metropolitan area, a second one aimed at identifying the key competitiveness elements that would facilitate cooperation between them and the third one assed the possible intense cooperation between the European core and the SEE through the network of regional urban poles. (see Annex II, Figure I).

One of the important sources to obtain statistical data was the Statistical Yearbooks of the three countries and in some cases regional statistics or data at the capital level. To obtain comparable analysis in many cases, we used data provided by EUROSTAT, by other ESPON projects or by other European documents. The interpretation of these data took into account the demographic, economic and connectivity potential, the environmental conditions in order to achieve a comparative analysis and to establish the regional role of each metropolis. (see Annex III)

The general methodology for the report followed several stages, applicable for the entire project (Figure 1): establishing the relevant indicators, confronting the list with the statistical evidences, exchanging indicators to complete them after consulting the partners, completion with other indicators (where it was the case), checking if the indicators respect the SMART (Doran, 1981; Meyer, 2003) criteria, developing each chapter, making comparative analysis by the activity and sub-activity responsible, finalising the material, consulting partners concerning the final form of the report.

In accordance with the general methodological scheme of the project, the indicators have been analysed at different territorial levels. The main methods to achieve the project's objectives and to test the working hypothesis are represented by: the desk-research, including the study of literature in the field and various projects developed in ESPON and INTERREG programmes, the analysis of statistical data and their cartographic representation through the use of software such as ARCGIS 9.3, SPSS, specific cartographic data basis for the ESPON programme, SWOT analyses, comparative analyses of the three metropolitan areas. For the elaboration of the Draft Final Report questionnaires and interviews with various categories of experts and decision-makers have been applied.

Figure 1 The general methodological chain



Taking into account a great number of aspects of the different issues studied in the project, the entire list of indicators is quite large (please see in detail Annex III). The TPG has also produced a list of headline indicators which is mainly composed by indicators included in the respective lists of Europe 2020 (2010), EC 5th Cohesion Report (2010) and ESPON INTERCO (2012). Thus, our list of headline indicators includes those indicators corresponding to the more important policy orientations of EU policy documents. Specifically, all the Europe 2020 indicators associated with quantitative "2020 targets" are included in the GROSEE list of headline indicators.

We have used in this and previous reports indicators for which there are Eurostat data or at least data at Large Urban Zone (LUZ) of Urban Audit. Data at LAU level have also been used at a limited extent. The main objective of the TPG for this and previous reports report was the data collection for the different levels / zones of the three Metropolitan Regions. Specifically on the basis of the approximations of the CC, FMA and MR for the three capitals with NUTS2 and NUTS3 units the TPG has collected data for the latter units for all indicators that were used. Evidently, data for other territorial levels have also been collected.

The information obtained in the debates during the three workshops, which took place in Bucharest, Sofia and Athens, as well as from the 20 interviews made with policy makers, experts and practitioners were useful in improving the initial policy recommendations.

3. Main results

3.1 What is the role of Bucharest, Sofia and Athens in the European polycentric network?

In one definition regarding polycentric development, it is considered that polycentrism is "the tendency of the population and economic activities to be assembled in urban cores that have the ability to exercise influence over the whole urban structure and spaces around them" (Trullén and Boix 2003, quoted by Peptenatu et al., 2009). In the specialized literature, polycentrism is seen as a way of transmitting the territorial development in an effective and balanced way (Hallgeir, 2004; Haindl and Hirschler, 2008). Based on this idea at a European level, polycentrism is considered as a way of spreading territorial development, with the aim of bringing the EU's outlying areas to a level as close to the centre of development as possible. Polycentric development is thus one of the major objectives of the European Union that is based on creating highly competitive economic areas whose spatial distribution is balanced at the local level, with no difference between centre and periphery (Peptenatu et al. 2009). In fact the central objective of the Territorial Agenda of the European Union's territorial cohesion represents the model of economic development that would serve to make the European Union as to become among the most competitive economies globally. On the other hand, a polycentric Europe may be a response to economical hypertrophy and dominance trends of the European Pentagon.

In this strategy, the capital cities play an essential role, acting as real relays of development across the continent. These cities are territorial entities that nationally express the full political, economic, cultural power and administrative authority. Their national role is defined by the location of the highest public institutions of national importance mainly the governing bodies' headquarters located. In this context, in the SEE a new polycentric area focused on the three capitals may be created: Bucharest, Sofia and Athens. This area has a great handicap: large physical distances, less cooperation, cultural differences, and general preferences for an intense cooperation with the most developed countries of European Union.

3.1.1 Role of Bucharest, Sofia and Athens in the European polycentric network as reflected in other European Projects.

The role of the three European capitals within the polycentric network has been addressed in several ESPON and INTERREG projects, a greater importance having three of them: ESPON 1.1.1 project, RINA - NORTH-SOUTH INTERFACE and ESPON Ulysses project (for Bulgaria and Greece only). In the first project the role has been considered in terms of functional specialization according to the Typology of Functional Urban Areas (FUAs) as being part of the Metropolitan European Growth Areas (MEGAs) with the other 73 MEGAs identified by the ESPON 1.1.1 project. It should be noted that the 73 MEGAs were analysed based on four indicators, divided into five categories within the same program. The four indicators were:

- Critical mass measured by economic size and population
- Competitiveness measured by GDP / capita.
- Connectivity measured by the number of airports and hubs
- Basic knowledge measured by the percentage of population with higher education and the share of employees in research / development.

After the analysis of the four indicators, Athens managed to get within the third category, to be more precise number 2 category MEGAs with other 8 cities being checked and as having an important role in the formation of a polycentric network. This category usually recorded lower values in one or two of the analysed indicators (size and knowledge base). The other two capitals (Sofia and Bucharest) find themselves into the latter category 4 MEGAs with 23 other cities mostly located in the new EU member states. The two capitals have recorded low values for all four indicators. These are nodes of European urban system, their role is vital for the transfer at the local

level of a balanced development. This distinction between the three capitals is due to the peripheral position of the three states. These capitals provide to the national urban systems specific functionalities, coming from historical and socio-economic developments that took place over the centuries. Expanding the functions through cooperation from national to regional level, would give consistency to future polycentric structures in this part of the European continent. In such a polycentric structure, the three capitals could function as true "hubs" of first rank (at regional level), later joining other cities in this area, that are not part of the EU for the moment.

Within the same project, the Potential Urban Strategic Horizons (PUSH) were defined (matter that has been approached partially in the Ulysses project for Bulgaria and Greece), which formed the basis for defining the conceptual and methodological Polycentric Integration Areas (PIA). They were approximated on the basis of isochrones for 45 minutes (Table 1). The table below presents the three options proposed in ESPON 1.1.1 project.

Table 1 List of PUSHs According to Different Overlay Criteria

Name	Area (in km2)					No of municipalities			
	ISO	Full area (100%)	50 %	10 %	5 %	Full area (100%)	50 %	10 %	5 %
SOFIA	3027	0*	2710	6746	8838	0*	5	14	18
ATHINAI	1950	933	1653	3249	3517	79	94	114	116
BUCURESTI	1823	748	1619	3411	3744	18	35	61	67

Source: ESPON 1.1.1 project

**Note: All criteria haven't been achieved*

ISO = Area of the isochrones in km2

Full area = Area of / number of municipalities assigned to the PUSH using the 100 % criterion

50 % = Area of / number of municipalities assigned to the PUSH using the 50 % criterion

10 % = Area of / number of municipalities assigned to the PUSH using the 10 % criterion

5 % = Area of / number of municipalities assigned to the PUSH using the 5 % criterion

Based on overlapping the PUSH(es) for neighbouring towns, there were established Polycentric Integration Areas (PIA) (Table 2)

Table 2 List of PIAs, indicating the name of the main node, the total population and number of FUAs in each PIA, the names all secondary nodes, and the FUA population of all nodes.

Main node	PIA population	Number of FUAs in PIA	NAME	FUA POPULATION
ATHINAI	3905718	3	ATHINAI	3761810
			KHALKIS	53584
			THIVA	23820
BUCURESTI	2400257	2	BUCURESTI	1921751
			VOLUNTARI	29995
SOFIA	1604674	2	SOFIA	1173811
			PERNIK	104625

Source: ESPON 1.1.1 project

Thus, the three SEE capitals (Bucharest, Sofia and Athens) with metropolis function play an important role for each of the states they represent, but also for structuring future polycentric networks internationally. Their importance is strongly felt, individually (role of each capital in its national urban settlement system), rather than as structural axis at SEE level. Bucharest-Sofia-Athens metropolitan triangle would prove to be viable and functional, through the opportunity to conduct collaborative partnerships for balanced development in order to increase territorial cohesion at both European and southeast level. Meanwhile, the triangle formed by the three metropolitan areas of capital cities will try to compensate the imbalance introduced by the accelerated development of the European Pentagon. The growth of SEE economic competitiveness, through the contribution of the three capitals, is the only way to reduce the gap between Western and Central Europe on one hand, and South-east, on the other hand.

3.1.2 Analysis of the three capitals Bucharest-Sofia-Athens

Aspects of the evolution and structure of the three south-eastern European capitals (Bucharest, Sofia, Athens), seen as engines of major national urban systems, are little known in the international literature as having unitary actions in this space. Specialized studies refer to the fact that except some studies on Greece (Petrakos et al., 2005), information on urban systems of the three countries is limited to a few national papers (Pavleas and Petrakos, 2005; Ianoș, 2002). This, for the most part, is attributed not only to a lack of scientific cooperation between the researchers of the countries and those from the western states, but also on account of the inconsistency, relevance and access to statistical data. Practice has proved that statistical institutions of the analysed countries, do not try to work together to individualize indicators that reflect the particularities of socio-economic development of these countries and especially to make the information comparable.

In the South-East European urban system as a supra-system of settlements, the three European capitals could stand for a network of development poles, each with a key role in the national rankings. This characteristic is given by their political-administrative importance from an internal and external point of view. In the three European countries, Bucharest, Sofia and Athens, represent the heart of the most complex subsystems respective national urban systems. Their importance is justified in part by the context in which they evolved throughout history, as well as the role that each of them have had in the past, present and future as the most important urban poles situated at lower levels.

A more detailed analysis of the entire system of Romanian settlements highlights Bucharest city as the first in the national hierarchy. Through its positioning at a major crossroads in Europe and only 65 km far from the Danube River, it has emerged as a true metropolis, with a major role from the economic, political, educational and cultural point of view. Its evolution over time, especially during centralized political and economic system, the advantages of its politico-administrative power places the city of Bucharest on top of the Romanian settlement system pyramid (accounting for nearly a quarter of national GDP and focusing almost 10% of total population).

Socio-economic changes that occurred after 1990 have led to a pronounced urban dynamics, as a result of restructuring and modernization noticeable after 2000 that strongly influenced the suburbs. This process explains the rapid economic development of the first ring of settlements located along the ring road, as well as changes in social structure and their function. Today the ring road has turned into a structural axis fostering the location, on both sides of many activities (logistics parks, storage areas, manufacturing, commercial areas, residential areas) that have generated new functions. This dynamic of changing the statute resulted in some of the villages located along this axis, creating seven new cities. These can be considered true seeds of emerging intra-metropolitan areas (Voluntari, Popeşti Leordeni, Otopeni, Magurele, Bragadiru, Pantelimon and Chitila).

The lack of a metropolitan master plan encourages a chaotic development of these towns and villages, with a negative effect on the connectivity between the capital and the emerging new structures. However, the ambiguity of rules in managing de development processes generated

certain conflicts regarding land use (Ianoș et al., 2012), but also some conflicts between local authorities. Some of them concluded with the temporary suspension of public transport between the capital and surrounding towns through a very limited cooperation between them.

The connection with the other two capitals (Sofia and Athens) is not done directly, as the European corridors don't intersect all three capitals. Such connections reduced, at least between Bucharest and Sofia, between Romania and Bulgaria, are favoured by the low level of development of the network of roads and highways. Both Romania and Bulgaria have been interested in the connection between the capital and coastal areas and less on the infrastructure development to foster cooperation between Bucharest and Sofia.

An opportunity to affirm the role of Bucharest in the European polycentric network would be Corridor VII, the Danube River that could be a strategic axis of development at regional and continental level if the project connecting Bucharest with the Danube would be completed. For the other two capitals existence of this corridor has little and indirect significance (Sofia) or none at all (Athens).

From the point of view of its position to the second tier city in the national urban hierarchy, it is confirmed that Bucharest is a hypertrophied city. This feature is emphasized on one hand by the high concentration of population and economic activities, and on the other by the presence of all the national institutions of politic-administrative functions and different agencies of international institutions (European Commission, World Bank, UNESCO and others).The Romanian urban system is composed of 6 cities over 300,000 inhabitants, and the largest are Timisoara, Constanta, Iasi and Cluj-Napoca. Another 20 cities are located on the next lower level with over 100,000 inhabitants and they stand for the main development poles in the national hierarchy of settlements. By government decisions there has been declared the promotion of polycentric development policies. Thus, each development region has set a national growth pole (except Bucharest-Ilfov), respectively growth poles (13), which have been allocated resources for development of projects out of national and European funding.

The structure of the urban system in Bulgaria is the result of its historical and contemporary evolution. Regarding the spatio-temporal and functional evolution of Sofia, as the centre of a metropolitan area, a similar political context is to be remarked as in Bucharest. We can refer to the explosive development during the totalitarian political system and deep restructuring that took place after 1989, when transition towards a market economy based on competition and competitiveness has started.

The morphological structure is relatively concentric, similar to the one in Bucharest with a radial street network. Near the city a suburban towns ring especially along the ring road was shaped. An important issue is the one related to city traffic, especially in the central part of the monocentric structure. There is also a gap between the north and the south, the latter being more attractive for investment. The situation is reversed in the case of Bucharest where development is asymmetrical, but for the northern part (North - South Interface RINA, 2010). Sofia does have some definite advantages at national level (the most important administrative and economic centre of Bulgaria and concentrate the bulk of investment projects) and at the regional level in relation to Bucharest, the benefits arising from the position at the crossroads of three European corridors (4, 8, 10). For Sofia, the existence of three transport corridors is an opportunity for further development and its assertion as polycentric network at national and European level. This could be, in the future, a true development axes especially for the metropolitan area, their importance for the two capitals being much lower. As in Bucharest, Sofia needs to develop multimodal centres, providing a much easier connection between the Core city and the metropolitan region.

The National Regional Development Strategy of the Republic of Bulgaria for the period 2005-2015 emphasizes that Sofia plays a major role in the national economy and on the long-term in the policy making process concerning regional development policies at national level. Moreover, two of the major objectives are to reduce intra and inter-regional disparities and the development of European cooperation for the implementation of cohesion policy at the continental level.

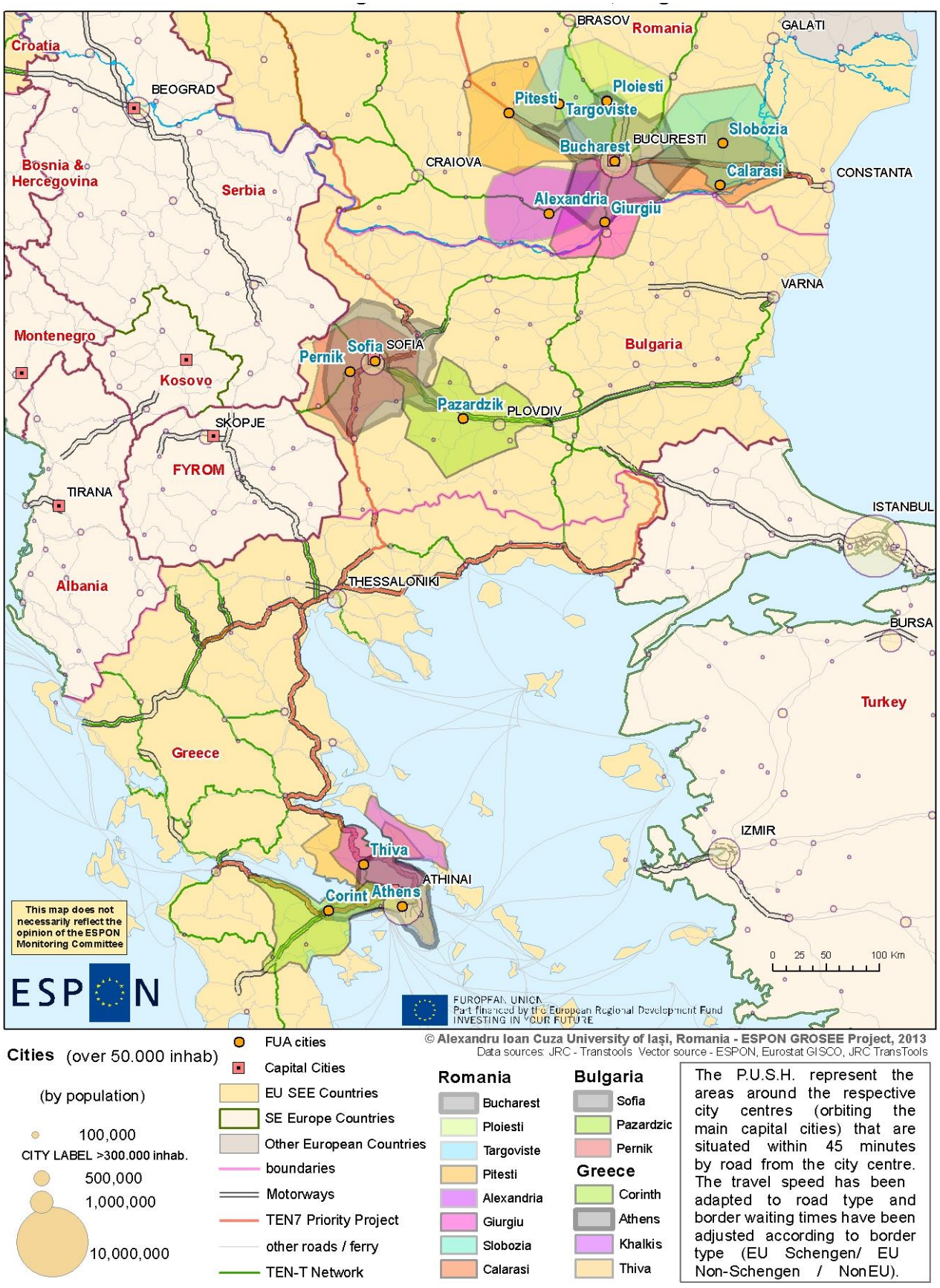
Specialized studies undertaken on the Bulgarian urban system show that in the coming years, Sofia will continue to dominate every other city of Bulgaria, in the fields of demographic growth and functional restructuring, diversification of economic, social and cultural activities.

Considering the population of Sofia as opposed to those in other close towns, one can see a clear gap between the capital (over one million) and cities on the next level of the hierarchy: two are more than 300,000 inhabitants (Plvodin and Varna), Burgas with less than 200,000 inhabitants and 15 cities between 50,000 and 100,000 inhabitants (Ilieva and Iliev, 2010). As a full member of the EU, Bulgaria will be able in the future to develop the entire urban system by promoting regional and trans-border cooperation by building partnerships on joint development projects in all areas.

Greek urban system analysis demonstrates that Athens, a capital with culture, history and tradition, as well as one of the largest European capitals, has always managed to stand in the hierarchy of settlements system. Thessaloniki is the second largest urban concentration in Greece. The Greek city gathered around it 15 other medium-sized urban centres and a number of 70 small towns (Christofakis and Papadaskalopoulos, 2011). Athens is today, due to its history and civilization, one of the most popular cities in Europe and worldwide. Being the capital of Greece, it is the largest city with the highest population and concentrating a large number of activities. The city is part of the Attica region, which is the most developed region in Greece. The city and its metropolitan area overlap the region that concentrates half of the population and contributes with nearly half of the national GDP (Rina - North - South Interface). It is the largest metropolitan area of Greece, context in which it is expected that its national role to be essential and due to its functions, to have a growing international role too. The modern city of Athens has developed with the main two urban vectors of Athens and Piraeus forming today a true extended conurbation along the coastal area.

However, with current economic developments, both at a global and domestic level, Athens as a big European metropolis, is experiencing some problems. The most important of these concern economic growth and quality of life, the latter referring to environmental conditions, high density construction and traffic. Some studies, focused strictly on the great Greek metropolis, pointing out that, in recent decades, it has failed to adopt a balanced metropolitan development plan (Prevelakis, 2002; cited by Petrakos et al., 2005). Like Bucharest and Sofia, it faces a demographic and human resources issue, related to population growth. This appears to show direct negative consequences on the cities' population, located on the lower hierarchy level and especially those located in the periurban areas.

Map 1 Potential Urban Strategic Horizons for Bucharest, Sofia and Athens



3.1.3 Conclusions

From the undertaken analysis on the three cities in Southeast Europe, it appears that they have many common features the evolution and development. They are considered as main centres in a continental polycentric network. Although the features of the three cities are different, they have some common components, starting with geographical position, history and economic complementarities. These would facilitate the development of transnational polycentric networks and establish cooperative relationship between them. Cooperation would be reflected both between the three cities, as well as between each of them and their cities national systems of settlements, as polycentric network components.

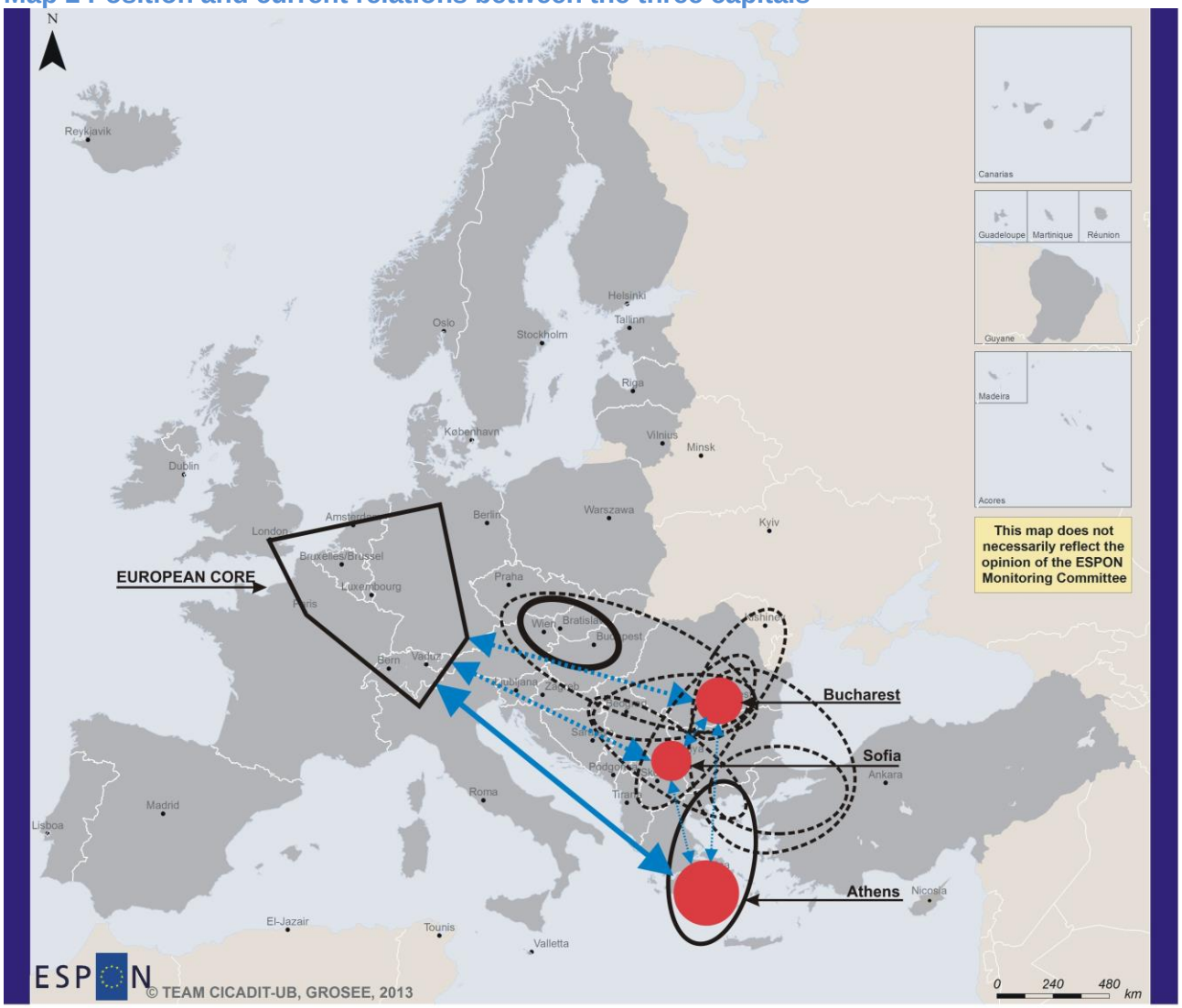
To increase the role of the three European capitals in the polycentric network, it is necessary to restructure the relationships between the city itself and its surroundings. Developing a strategy in the SEE, based on polycentrism (where the three capitals are to hold the most important role) and correlated with the process of decentralization will lead to a transfer of responsibilities from central to lower levels of the decision-making process. This development strategy based on polycentrism will enable from a spatial point of view, a projected direction pursued by decentralization to achieve optimal functional and territorial structures. The increased functionality of administrative mechanisms that disseminate information among localities' polycentric network is as efficient as it can be achieved by creating, at a territorial level, efficient ways of disseminating information and ensuring services, including highly specialized ones. Balanced development is the ultimate objective of regional development and territorial cohesion policy and its implementation requires an optimal decentralization by transferring responsibilities from central to lower levels.

Regarding the relations with the metropolitan regions of the three capitals, there are obvious differences, the city of Athens having better accessibility as opposed to Bucharest and Sofia. For the last two cases, the lack of multimodal centres, which should provide a better connection between the city core and the immediate vicinity, causes more interference. In addition, strong fragmentation of the metropolitan area emphasizes bottlenecks between the city and its metropolitan area, especially on public transport. The decentralization process of economic activities will be increased by the new emerging local structures .They will act as local police development, influencing growth in the standard of living of those communities and creating premises for future developments based on R&D or tourism.

The two maps show the current position and relations that are established between the three capitals and the rest of the European Union (Map 2), but also the position and the foreseen relations between them (Map 3).The first one assumes that there are connections both at the level of each capital connected to the rest of Europe as well as between them, but stresses the idea that each one acts as a self-consistent entity. The second one considers the three capitals acting as a system and taking effects also at the level of the entire SEE, as well at the European level.

The analysis of the main European transport corridors that cross the region shows that there isn't a direct connection between them. By ramifications, some of the corridors could contribute to the development of the three capitals Bucharest - Sofia – Athens with a major role in regional polycentric network. An example is the Corridor VII, the Danube River, which neither through ramifications could connect the three cities. Concerning other corridors there would be a solution, represented by the construction of branches of existing corridors. Another solution would be doubling corridors by building high-speed railways, especially for the transport of persons. In addition, in order to increase the role of the three capitals in the European polycentric network, a corridor linking the three capitals in the North-South direction could be built, which would fit into a larger project in achieving a corridor between Helsinki and Athens on the EU's eastern extremity (North - South Interface RINA, 2010).

Map 2 Position and current relations between the three capitals



EUROPEAN UNION
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INVESTING IN YOUR FUTURE

Regional level: NUTS 0
Source: CICADIT-UB, 2013
Origin of data: ESPON MAP Kit, 2013
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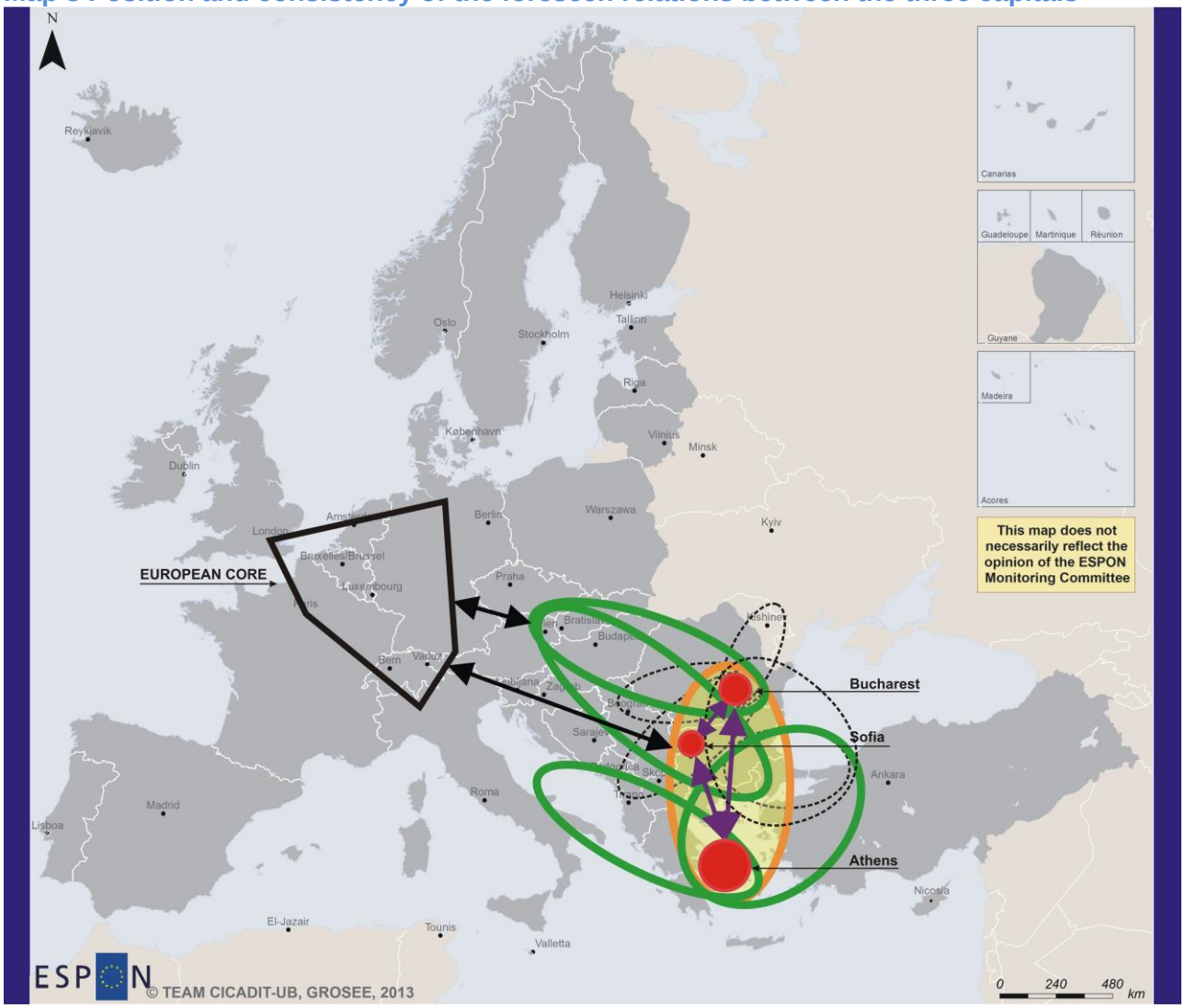
LEGEND

- Areas and directions of strong and very strong relationships
- Areas and directions of weak and very weak relationships
- Population size

Map 3 Position and consistency of the foreseen relations between the three capitals



EUROPEAN UNION
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Regional level: NUTS 0
Source: CICADIT-UB, 2013
Origin of data: ESPON MAP Kit, 2013
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LEGEND

- Areas and directions of strong and very strong relationships
- Areas of weak relationships
- Area and directions of strong relationships in the SEE
- Population size

Due to their administrative, economic and cultural feature, Bucharest, Sofia and Athens, are operating as functional nodes in the national urban networks and as integrating elements of space within South-eastern Europe. Trans-European corridors and the connections between the three capitals offer them the role of „relays" for the diffusion of development due to the direct relationship with the European Core. In such a context, the polarization capacity of these cities may exceed national borders and by functional diversification and increased competitiveness will ensure a multiplicity of relations with other important administrative and economic centres of the region. The increase of the role of the three local and regional capitals can be achieved by creating a trans-European corridor on the north-south direction that might practically be a territorial axis with

structures for both of the three states and the entire Southeast European region. Also, this corridor could increase the role of local urban centres (Thessaloniki, Varna, Cluj-Napoca, Timisoara, Craiova, Brasov and Iasi) that would meet the completion of polycentric network in this area. By establishing a functional inter-metropolitan triangle in south-eastern Europe connections might be facilitated and developed with other European cities (especially those in the West), and with those outside the European Union, especially with the rest of the Balkan cities and Istanbul.

3.2 What is the accessibility of these cities and can it be improved? What is the efficiency of European transport corridors?

3.2.1 Evaluation of accessibility of the three capitals

Accessibility has become a key term in development policies and strategies at local, regional, national or EU scale. Its overuse or sometimes improper use deprives it from significance or from its instrumental purpose. The level of accessibility is often a push or a pull factor in the development of geographic places. The process of increasing accessibility of places should be constantly seen as a mean to achieve competitiveness and growth and not as an end in itself.

As noted Rodrigue et al. (2006) accessibility is the measure of the capacity of a place to reach other places or to be reached. This individualizes two visions of accessibility. The accessibility “of” a place shows the capacity of a place (destination) to receive impulses (flows) from outside and to control its surrounding territory (hinterland); its measurement requires the analysis of the position of the place within the territory (especially within transport networks) as well as of the architecture of networks that drain flows towards that place (morphology, density, connectivity, connexity etc). The connectivity reflects the potential efficiency of the network draining to a certain place whereas connexity represents the minimal measure of the coherence of a transport network, both relying on the number of nodes and links. There is also an accessibility “to” a place which shows the measure of the possibilities to reach that place (destination) from other places (origins) which requires the analysis of the geographic cost of access (distance, time and other derived indicators).

Evaluation of urban cores and areas accessibility - which includes analysis of their geographic position as well as of the architecture of transport networks draining flows towards them - has been widely targeted in previous ESPON projects, some of them also including the SEE area in the analysis. Among them, there is “ESPON 1.2.1.Transport Trends”, which provides a very solid methodological base that can be used for the analysis of accessibility and connectivity at different spatial levels, but also an overview of the situation of accessibility in Europe (including the SEE area). In the same time, ESPON Project “TRACC - Transport accessibility at regional/local scale and patterns in Europe” includes analysis at European level but does not focus on case studies from the SEE. Greece is the only SEE country with more detailed background information in previous accessibility approaches. The Project “ESPON 2.4.2 Integrated analysis of transnational and national territories” has provided a solid analysis of the situation (at that moment) of the three countries that GROSEE focuses on, as well as on the connections within the entire European space.

This study’s approach on current accessibility and the way it can be improved relies first on the analysis of the three capitals position within national, SEE and European networks, as well as on the measurement of connectivity and connexity of transport networks, three different modes – air, rail and road-ferry.

Our methodology includes qualitative approach supported by a rich quantitative analysis. Quantitative results along with their geographic representations have the objective to reflect the properties of networks draining flows towards the three capitals and the actual pressure on them (where data on actual flows is available). Our study does not succeed to reflect the properties of the whole transportation system as the means of transportation or the operating technologies are not considered. Vector data from previous ESPON Projects, Eurostat Gisco or JRC Trans Tools has offered us the possibility, through GIS spatial join procedures, to represent statistical data

previously collected (from Eurostat, National Statistical Institutes or Traffic Reports) and processed by arranging and geocoding them.

Air Transport

The morphology of the urban system of Romania, Bulgaria and Greece plays a crucial role on the importance of their capitals within the national air transport networks. Romania and Bulgaria have similarities regarding the relationship between the peripheral geographical position of the capital and two other opposite large cities (Cluj and Timișoara in Romania and Varna and Burgas in Bulgaria situated at 400-500 km from the capital). Also situated at the top of the urban hierarchy, Iași (RO) and Plovdiv (BG), struggle to increase their traffic (due to the large circulatory migration) but they are either in a very competitive airport system (Iași is at less than 150km from 3 other airports) or too close to the strongest airport (Plovdiv is at less than 150km from Sofia). The bigger gap in the Romanian urban hierarchy (comparing to the other two) is also reflected in the big difference between the air traffic of capital Bucharest (the BBU – Baneasa has lately merged into the OTP – Otopeni airport) and the next large cities (less obvious in the case of the other two countries) which often determines the latter the draw international transport strategies that bypass the capital city. Whilst the case of the small hubs of Timișoara and Thessaloniki is similar, the position of Athens in the national air transport system is clearly central (as we notice from the maps of air traffic numbers and flows). This emphasizes the crucial interface role of Athens, linking by air continental and insular Greece and well correlating it to a good road network. Insular tourist destinations bypass Athens by air (usually low-cost companies) only during high-season, responding to some punctual needs of the tourism industry.

The aircraft movements in 2009 in SEE as well as the number of passengers in the same year (strongly correlated between them) highlight the dominance of the capitals in all countries (except for Turkey), but also of tourist destinations that manage to add balance to the territory. This is especially the case of Greece, through its Aegean islands, but also of the Adriatic and the Bulgarian Black Sea coastlines.

Map 4 Air traffic flows and routes in SEE by number of passengers in 2010

As for freight and passenger air transport, the statistical data on Eurostat is available for NUTS 2 level. Unfortunately, they do not cover all the existent regions, or the same years. However, the available data for 2009 allow us to observe that for every country the highest quantity of freight is exchanged in the NUTS 2 region where the capital city is situated, confirming once again the capitals' dominance and the territory's imbalance. The situation for passenger air transport is slightly different mainly due to the tourist regions that are attracting a large number of travellers.

The analysis of the air traffic flows reiterates the dominance of the capitals as main actors in the territory, not just for international and national flights. They are the main receiver for the international flights and then the connector to the rest of their territory. In the case of Greece and Romania, the cities of Thessaloniki and Timisoara try to emerge into a position of second-degree-hub whilst Bulgaria does not have such a territorial player. The flows show a very intense traffic between Athens and Istanbul, followed by Athens-Sofia, Bucharest-Istanbul and Bucharest-Athens. The air traffic between Bucharest and Sofia is much lower, due to the shorter distance (ca. 400km instead of 800 km from Athens to Sofia) which makes the first more suitable for land transport.

The number of weekly regular flights between capitals shows the very strong influence of Istanbul in the area, as the only city connected to all the capitals, although with differences in terms of flights frequency. A strong connection can be observed between Bucharest – Istanbul, Bucharest – Athens, Athens-Istanbul. Sofia is better connected to Athens than Bucharest and Istanbul. At the same time, it is noticeable that Ljubljana, Belgrade, Sarajevo and Zagreb are much better connected with each other than to the other three capitals (see also in Annex IV Maps 1 to 4)

In order to identify the cooperation potential based on distance and time of travelling, which is indispensable to polycentric development, we used the one day trip indicator to establish the degree of contactability among the three capitals and Istanbul and Belgrade, two of the main poles in South East Europe. As used in previous projects, the indicator should take into account the train and air connections, but in this case, since there are no train connections between all capitals and the existent ones do not fit in the time frame set (6.00-22.00, with 6 hours spent at the destination), we could only consider the air connections. As per the 2012-2013 winter schedules of airports, the only pair of capitals that does not allow a day trip is Sofia-Belgrade because there are no direct flights between them and the stopovers would not fit into the set time frame. The rest of the city pairs confirm the existence of favourable connections for one day business or study trips, in some cases with more frequent daily flights (e.g. Athens-Istanbul, Athens-Sofia) providing even more than one possibility to return within the established time frame.

Rail transport

By analysing the railway networks of the three countries and of the whole SEE, northern Balkans seems to have a better coverage due to the vicinity within the inner continent, to morphological aspects that permitted lower cost investments and to their initial start as part of the industrial machine of the Austrian-Hungarian Empire at the second part of the 19th century.

Large territories in south-western Balkans (from Bosnia to West Greece) are poorly connected and large areas of the Adriatic coasts are effectively out of the rail network coverage or disconnected from the neighbouring countries.

Romania has the best coverage and density of the railway network but in the same time it has very poor connectivity index as the Carpathian ring represents a real breach. There is also a high sinuosity (railways have always followed the minimum-investment policy – very few tunnels or viaducts that bring travel time cuts). In Bulgaria, Balkan and Pirin Mountains also constitute important fractures. The situation is a lot worse in Western Greece which is deprived of this transportation mean.

Considering the rail connections between the three EU countries (Romania Bulgaria and Greece) as well as their connections with the neighbouring countries, we have noticed a low transnational

connectivity and high level of vulnerability and variability. Thus, the border between these countries is characterized by natural barriers – the Rhodopes mountains between Greece and Bulgaria (1500-2000 m) and the Danube River between Romania and Bulgaria, as well as by few connections: only 2 important connections, out of which only one for each country is used for passenger transportation: Giurgiu - Ruse (RO-BG) and Kulata - Promachon (BG-GR). The railway Bucharest – Giurgiu, leading south, is disconnected since the flooding of 2005 on the river Argeș that has damaged the rail bridge. The variability of the rail network means a lack of regular availability of the trains over the past 23 years. In most cases it is derived from the high vulnerability above mentioned, but also from the economic or political decisions taken. For example, the train Sofia – Bucharest (– Kiev – Moscow) has had some gaps over the years and starting from February 2011, the Greek National Railways have suspended their international direct trains from Thessaloniki to Sofia and to Bucharest. All this creates great breaches into the international rail transport as this affects the connection between the city pairs Bucharest – Sofia and Sofia – Thessaloniki. The distance between them (300-400km) is not big enough to be supported by cost-efficient intensive regular flights and neither short enough to be connected by personal transportation. Improving the axis Bucharest – Sofia – Thessaloniki – Athens with new medium to high-speed railway system, seems to be the minimum strategy in order to ensure good passenger transportation and to increase exchanges. Actual trains linking Sofia to Bucharest perform around 400 km in 10 hours which makes this line uncompetitive comparing to the other transportation means. Alternative network will also lead to diminishing of the network vulnerability to natural risks which would be usable by both regular and high-speed trains. The new Calafat–Vidin bridge (rail and road - fully operational from June 14th 2013) is a great opportunity to better connect Bulgaria and Greece to Central Europe although the rail sinuosity of this link (HU – RO – Nădlac – Arad – Timișoara – Drobeta – Craiova – Calafat RO-BG Vidin – Sofia – Kulata BG-GR) has very high values which will determine high operating costs. A reconfiguration of this corridor is needed, terms of increasing speed or constructing shortcuts. Meanwhile, as for September 2013, no rail carrier is interested in passing this bridge as the conditions are not symmetric (the Romanian link Calafat (Craiova is not electrified in contrast with Sofia) Vidin and has speed restrictions down to 30 km/h at certain segments). Romanian authorities need to understand the importance of this corridor for the entire European railway system and to decrease the hegemony of Bucharest.

Road networks

Road networks (as well as rail networks) in the three countries follow mostly an internal logic, which represent the heritage of an era where each one of them was included in a different political block and where natural borders functioned as delimitations, not as interfaces. The logic of Greek road system is different from the other two countries. The Aegean north-south motorway system Athens – Thessaloniki connects almost half of the urban population of Greece, almost 6 million people being concentrated on this apparently marginal but actually central axis (if we consider the ferry connections towards the Aegean islands. Bulgaria has similar west-east double axis Sofia – Veliko Târnovo – Shumen – Varna and Sofia – Plovdiv – Stara Zagora – Sliven – Burgas which also concentrate, together, almost two thirds of the Bulgarian urban population. Romania instead has a larger territory and the road system follows multiple logics, related to the hydrological architecture internal political needs of the medieval states that compose it: north-south axis in Moldavia, west-east in Wallachia and northwest-southeast in Transylvania. Bucharest is the main road hub but did not create a major exchange axis as the politics during Ceausescu's era was to create a harmonious crystallerian urban system of 7 cities of exact same size (around 300.000 inhab.) that obey the capital city. Lately, Romanian government insist on the consolidation of two road axis – Bucharest – Brasov – Cluj – Oradea (Transylvania Highway) and Bucharest – Pitesti – Sibiu – Timisoara – Arad (actually the TEN-T 7 corridor), both oriented northwest-southeast that respond less to an internal urban cohesion (less than 1 third of the urban population is situated along these axis) but more to European integration needs.

The analysis of the road networks encounters difficulties in the sense of providing comparable data between countries as each country has its own system of standardizing national roads. In order to understand the road networks morphology at intra-national level, data on road links and nodes has been appended to NUTS2 regional level. Our analysis on connexity and connectivity through the three indices shows high discrepancies between regions. South Romania and West Bulgaria show high values because of excessive investments in the capital city regions and Northern Greece because of an interface role of Thessaloniki area with the rest of Europe. Although Bulgarian national road network (hierarchy of 3 levels) does not always reflect high-quality roads, it has a very good overall connectivity comparing to Romania. Some lower values in the Greece regions are due to a very fragmented territory and to the fact that ferry connections to the islands have not been taken into account. However, we may notice very low levels of connection in the Adriatic regions and in Northern half of Romania. The higher values in Bulgaria, Greece, Hungary, Slovenia or Austria are also due to a development of the city-outer-rings that diminishes the bottleneck effect and leads to a better connectivity. Romania and the western Balkans need to do improvements in this matter.

3.2.2 Main answers on the accessibility

The analysis on accessibility has provided a series of key findings that may be structured on national, internal SEE and European level.

The air accessibility in the three countries is dominated by Athens, where bigger population, stronger economy also supported by great travel demand and central position in the territorial system play crucial role for high values airport traffic. In a strongly centralised urban system (and a bigger country), Bucharest play its card of dominant air hub (no other important airport in a ray of 250 km) but faces stronger competition from the cities of the next hierarchical level. Sofia has lower traffic, due to the geographical position (it is a little similar to Thessaloniki in this matter) but the other two coastal airports ensure a territorial complementarity. This hierarchy is also reflected in the traffic flows from Istanbul intercontinental air hub to the three capitals (the same distance from the three capitals). Instead, the air traffic flow with central Europe (Vienna and Budapest) does not reveal such differences. Romania should invest in the development of three sub-hubs (considering its population) in Cluj-Napoca and Iași along with the existing hub of Timisoara. Bulgaria should support the development of its central part of the country by investing either in the hub of Gorna Oryahovitsa (in the vicinity of Veliko Tarnovo,) or in Plovdiv (which has already low-cost weekly flights and a significant number of charter flights for tourism demand).

Although strongly fragmented, rail networks have stronger tradition in Romania and Bulgaria, closer to the inner Europe. Natural barriers play an exaggerated role in disconnecting large inner territories in all three countries and thus determining a very low connectivity. Future projects in medium to high-speed trains must make use of tunnels and viaducts in order to cut travel time between both sides of the Carpathians, Balkans, Pirin or Pindus Mountains. Natural barriers between the three countries must not be seen anymore as separation between political blocks as it was 24 years ago but as new communication interfaces. Thus, supporting the viability of the new rail-road bridge Calafat RO to Vidin BG is crucial for the creation of a real alternative corridor between Central and Southeast Europe. Linking Bulgaria to FYROM (Gjueshevo BG to Beljakovce MK) or to northern Greece through Rhodopes (Kardzali BG to Komotini GR) would increase the connectivity and further exchanges. But, until then, Greece needs to revise its policy of suspending trains to Bulgaria since 2011 through the customs of Promachon – Kulata and Orestiada – Svilengrad. Greece also needs to draw a medium-term strategy of linking by train Athens and north Ionian, by building a railway between Kalambaka and Igoumenitsa. This, along with the existing highway works to Igoumenitsa, would set the foundations for a real multimodal Ionian harbour and create the future premises for a continuous Ionian - Adriatic railway and highway through Albania.

Map 5 Transeuropean Transport Network Projects in Southeast Europe

Main national axes in the three countries connect the high urban nodes in different geographic pattern. These axes do not totally respond yet to global European exchanges and future needs. All three countries need to adjust national road construction policy with European policies but in the same time, European strategies must take into account that the three countries need to become larger players and market interfaces in Southeast Europe and Ex-soviet space and not permanent EU borders. Thus, Romanian government should understand the enormous necessity of the western part of the TEN-T7 corridor (Arad – Timisoara – Drobeta – Calafat) and Bulgaria needs to make stronger investments in the central (north-south) axis Ruse – Stara Zagora. The first will create an alternative route European core to Athens and the second will facilitate the connection from Central Europe, Baltic, Ukraine to Istanbul via Bucharest (the Black Sea ring strategy). Comparing to the other two countries, Greece's actual advanced works and planned works on Ionian highways as well as future connections with Albania, FYROM or the Croation highway are designed to better respond to national and transnational needs.

3.2.3 Analysis of the efficiency of European transport corridors. Overview of existing corridors and TEN-T Networks

In southeast Europe, TEN-T Networks have been drawn to insure the north-south or northwest-southeast connectivity (from Central Europe - Vienna and Budapest towards Athens and Istanbul) so they respond to the major European needs. They reinforce, once more, the important position of the EU capital cities of this region (Bucharest, Sofia, Budapest, Vienna, Bratislava, Ljubljana) partially cover the most important internal needs – Bucharest connection to the Black Sea and to Transylvania or Athens-Thessaloniki-Promachon highway. Instead Via Egnatia segment (east-west) in Greece represents a good example on how important it is to reduce territorial disparities, by linking poorly connected regions. The Bulgarian segment of TEN-T 7 (Vidin – Sofia – Kulata) does not match with the national highway strategy (the two axes from Sofia to Black Sea) but was immediately perceived as a means to collect European flows through Sofia.

The Western Balkans also lack coherence in building a strong inter-national road network because of a strong fragmentation and instability during the past 15 years. The EU should plan a future integration of this territory which could ease synergies and solutions for a coherent road network.

The Danube became a priority project as water transport is seen by the EU as an efficient alternative to land transport. The Danube's Strategy initiated by Romania and Austria in June 2011 shows great interest in this sector and will give both parties a key role in managing the projects. The Priority axis no 18 - Rhine/Meuse–Main–Danube inland waterways - is supposed to increase navigability and the transfer of freight traffic through multimodal nodes. It will favour the transport of goods mainly West-East, but also East-West if we consider the growing importance of the harbour of Constanta (RO) regarding the import of goods from China. The axis 18 is a cleaner and a more sustainable alternative to corridor IV as well as to Priority Axis TENT7. The 3 billion Euros estimated overall costs represent great investments that will also favour passenger transport and leisure traffic on the Danube. On the long-term it must be accompanied by national policies that support cargo traffic on waterways (subsidies, increasing tax for lorry cargo traffic, simplified water-border procedures, a bigger involvement of the Republic of Serbia in the process etc.) Otherwise, the great risk EU is taking is to invest in infrastructures that will serve punctual or much variable traffic needs.

One of the major EU preoccupations in road transportation is to create a fluent traffic from NW to SE between Central Europe (with Wien and Budapest as major nodes) on one side and Greece as one of the older EU member States and Turkey as an important commercial partner of EU (and future candidate), along the European corridor no. IV. Other preoccupations envisage a better connection between West and East Balkans. TEN-T Priority Project no. 7 covers these major objectives by trying to link the ports of Patras, Igoumenitsa, Athens, Thessaloniki and Constanta to the heart of the enlarged EU by a continuous motorway. The Greek and Hungarian sectors of this

Project are more than 90% completed whilst it is the case of less than 20% of the rest of the project (covering Romania and Bulgaria).

3.2.4 Impact of completion of TEN-T7 project on accessibility

In order to understand the reduction of the travel time of the TEN-T 7 corridor, we have used the JRC Transtools vector network for simulation inquiries. Travel restrictions have been set in terms of cross-border sections or of ferry-boat passages. There are also restrictions in terms of sinuosity or altitude gain, but the extent of the network and the big amount of data forced us to build or model only in terms of travel speed.

The next comparative table shows travel cost gains between the main city pairs that the TEN-T no 7 Project is likely to influence, in terms of time. The methodology includes setting up travel speeds to each road segment according to TransTools data (revised according to up-to-date modifications) as well as estimative cross-border waiting times (set to 90' non-Schengen to Schengen/EU countries, 60' on non- EU to non-EU countries, 20' for EU to EU countries, 0' for Schengen to Schengen) or ferryboat across Danube (40') or across the Aegean Sea (35 km/h).

According to our simulations, the completion of the TEN-T no 7 as motorway (130 km/h) will bring significant improvements along the European corridor no 4. At this time, although considering difficult passing of the Serbian customs, Pan-European corridor no 10 (via Belgrade) is the shortest passage from the north to the south of the Balkans in terms of distance as well as in terms of travel time although it is subject to high impediments due to non-EU cross-border sections. The completion of the TEN-T no 7 Project at a Motorway level will create a time advantage of over 150 minutes (2,5 h) at a regular crossing from Vienna-Budapest towards Istanbul and the rest of Turkey. In the event of Romania and Bulgaria entering the Schengen area, travel time may be reduced by another approx. 60 minutes. The crossing through the other branch of TENT-7 (Arad-Bucharest) and then through a section of the Pan-European corridor no 9 (via Ruse – Stara Zagora) will constitute a good alternative after the improvements of the Romanian branch Timisoara-Constanta.

When considering the passage from Central Europe to the Aegean harbours of Greece, the corridor no 10 is still the shortest option (either via Zagreb or Budapest). The TEN-T no 7 Project (corridor no 4) will become the first option after the completion of all sectors. Finally, the completion of the corridor no 4 linking Budapest and the Black Sea at Constanta will bring significant improvements of one hour via Timisoara - Craiova and over two hours via a completed highway through Arad - Sibiu.

Table 3 Travel time gains after the completion of TEN-T no 7 Project

Itinerary	**Via**	**Distance (km)**	**Travel time** (min) **2013**	**Time (min) 2020** (completion of TEN-T no7)	**Time gain** (compared to the shortest)
Vienna – Istanbul	(RS) Subotica - Belgrade – Kalotina (BG) - Plovdiv corridor no 10.	1556	**1010'**		
	Arad – Bucharest (RO) partial TEN-T 7– Stara Zagora (BG) (corridor no 9)	1677	1074'	990'	20 min
	(RO) Timisoara – Calafat – Botevgrad – Kulata (BG) TEN-T7 (corridor no 4)	1620	1080'	**867'**	143 min
Vienna – Athens	Budapest (HU) -Subotica - Belgrade (RS) – Bogorodica (MK) corridor no 10	1705	**1045'**		

	Zagreb (HR) – Belgrade (RS) – Bogorodica (MK) corridor no 10	1846	1054’		
	(RO) Timisoara – Calafat – Botevgrad – Kulata (BG) TEN-T7 corridor no 4	1874	1117’	**905’**	140 min.
Budapest - Constanta	Debrecen (HU) – Brasov – Ploiesti – Harsova E60 corridor (RO)	1074	674’		
	Szeged (HU) – Craiova (RO) partial TEN-T7 corridor no 4	1057	**624’**	561’	63 min.
	Szeged (HU) – Sibiu – Bucharest (RO) TEN-T7 corridor no 4.	1008	590’	**507’**	117 min.

The completion of the motorway will actually bring more time travel gains as sinuosity and slopes constitute fewer impediments on motorway sectors but will increase the toll costs which will favour road freight transport over personal transport. There is also a great improvement that via Ignatia brings in term of linking West Balkans (Epirus, Albania and FYROM) to Istanbul and East Balkans in general, but this sector is already completed.

3.2.5 Conclusions on efficiency of transport corridors

The horizon 2020 for the completion of the TEN-T-7 Project may be not reachable if Romania and Bulgaria do not adjust their national strategies with EU-interest. The recent inclusion (April 2012) of the Romanian planned highway Târgu-Mureș – Iași in TEN-T corridors shows that European interests able to adjust to national strategies in order to tackle major internal disparities (which should represent the national primary interest). In the same time, there has to be greater collaboration between Romanian and Bulgarian governments to meet European interests in the region. As we have shown, TEN-T 7 Axis will provide major travel time improvements and will (at least for the sector Timișoara – Calafat – Vidin – Sofia) constitute a great opportunity to create a more connected road network, in order to tackle traffic jams, network vulnerability to major force, or even to political or social shifts.

Along with the transport networks, another priority of the European policy is to optimise the energy networks (TEN-E), aiming to achieve the targets of the Europe 2020 Agenda (20% reduction of greenhouse gas emissions, 20% increase in energy efficiency and 20% of renewable energy in final energy consumption), ensuring at the same time security of supply and increasing solidarity among states. In order to reach the said targets, in the frame of the Energy Infrastructure Package 12 priority corridors and areas regarding the electricity, gas and oil supplies have been identified and need to be implemented. Among them, the north-south electricity interconnections in central eastern and south eastern Europe, the north-south gas interconnections in central eastern and south eastern Europe, and the southern Gas Corridor, as well as the Smart Grids for Electricity involve all the 3 countries, enforcing their role in the area, as well as the connection with the western countries.

Our analysis shows that in terms of numbers and spatial distribution, the airports are relatively evenly distributed in the SEE territory. It is also obvious that the influence they exert is different. The three capitals and Istanbul are clearly the dominant poles in the area in respect to air transport and they are well connected with each other, but the connectivity inside the SEE area needs to be improved in order to facilitate a better cooperation among all the cities and a more balanced access to the services they provide. The rail infrastructure and connections do not currently support a proper level of accessibility or connectivity neither inside the SEE area, nor with the rest of the European territory. The road network also shows discrepancies and dysfunctions in terms of connectivity. The main impact of the TEN-T corridors crossing the area will be therefore to provide major travel time improvements and better connections within the area under analysis, as well as

with Central Europe and Turkey, supporting and emphasizing the role of the three capitals as growth poles. The general low absorption of EU 2006-2013 funds - 26% in Romania and 40% in Bulgaria - is critical for the Transport sector (less than 10% payments of EC to transport projects in Romania) which will delay the realization of a continuous transport corridor through the three SEE countries.

3.3 What are the main drivers for competitiveness in the three capitals? Do metropolitan areas play an important role as drivers for competitiveness in the region?

This section provides an in depth evaluation of drivers of competitiveness for the three capitals in relation to their role and the existing and potential synergies and complementarities inside the emerging axis Athens - Sofia - Bucharest and the potential role of the latter in the entire SEE and the EU core. Starting from the factors of competitiveness of the three capitals and SEE: the historical and physic-geographical context, their economic structure, human potential and technological readiness, we enlarge the scope of the analysis to incorporate the impact of a consolidated urban network in this area. In addition, there are other very important factors such as social structure, internal connectivity, environment, territorial and urban structures, as well as governance structures, that have a main role in increasing competitiveness. We then identify the comparative strong and weak factors of competitiveness in each case.

We further highlight the three capitals' competitiveness through a comparison with those of the more developed metropolitan regions in Europe, focusing on the "competitiveness distance" of the first from the latter.

Finally, we examine the drivers of competitiveness of the three capitals in the metropolitan context (their impact on the "Outer Metropolitan Ring"), and the contexts of their countries, SEE and the wider Balkan area, Europe and the world.

From the local factors to the impact of the firms and research networking and clustering on the competitiveness of cities

Competitiveness of cities is a very complex concept. The related literature as well as specific ESPON projects identifies primarily the following local factors of cities' competitiveness in a knowledge-based economy: innovation, economic structures (intra-sectoral and inter-sectoral relations), human potential and labour market conditions, social structure, internal connectivity, governance and institutional structures. The role of the FMAs in the growth of their surrounding regions (OMR and beyond) is explained by the same factors plus accessibility to the FMA (see in ESPON FOCI, 2011).

Further on, in today's globalised economy, networking and clustering become more important for the understanding of the cities' position in European and in global markets. The capacity of some cities to be competitive at different territorial levels defines to a great extent their success in capturing the opportunities for economic development. However, while ESPON 2006 projects (see, for instance in ESPON 1.1.1, ESPON 1.1.3 and ESPON 1.4.3) emphasized the need to implement the approach of networking, they primarily took into account the proximity networking and less the distance networking. The latter had been approached in depth, among others, by the pivotal researches of the GAWC working group on the links among the multinational companies subsidiaries located at international importance city nodes (Taylor, 2003ș PwC Big Cities Network, 2005; see also in Castells, 1996; 1999, and 2003, Moulaert et al., 2003; Sassen, 2002). Other researches had proposed different typologies of the distance networking (Rozenblat and Pumain, 2004 and 2007) or assessed the international competitiveness of cities using indicators on cities networking through cooperation of research centres or firms (ESPON FOCI, 2011) or the intensity of transport/ communication flows between European cities (Amiel et al., 2005). Specific analyses of the firms, research and transport links among the SEE cities implemented in ESPON FOCI, 2011 (results included in Angelidis et al., 2011) have been enriched in GROSEE through deeper analyses and comments.

As the basic orientation of GROSEE is to promote polycentric integration among SEE capitals in the frame of their respective urban networks, research experience in other polycentric integration areas is useful (Hall and Pain, 2006; Otgaar et al., 2008; Gabi et al., 2005 and especially for the synergies in polycentric urban networks Meijers, 2006 and 2009).

Finally, primary importance has been given to the analyses of the deep change of the development model of the three capitals and SEE during the recent crisis (see for this issue among others, in ESPON ECR2, 2013 and ESPON SGPTD, 2013).

3.3.1 Drivers of competitiveness of the three capitals and SEE

The “closed” communist economy of Bulgaria and Romania made difficult the improvement of their competitiveness under the conditions of an open economy.

Historical factors impact considerably on different aspects of competitiveness. Looking at the historical past of Romania and Bulgaria, it is clear that the over 40 years of communist regime strongly influenced the economic development of the two countries. The focus is set in this period of planned economy on the industrial speed up, forcing large urban and rural areas to develop an extensive industrialisation, which has minimized the abilities of the two countries for competitiveness. A second issue in reaching a high competitiveness at local, regional or national level lies in the slow transition process to the market economy.

The early accession of Greece to the EU increased the competitiveness of the selected branches, but also the excessive growth of “introvert” branches. The economic development of Greece has been closely related since 1981 to the EU economic unification process. This has led both to the agriculture and industry restructuring and to the increase of their competitiveness at European and world level although it has also been associated with important losses in production and jobs. The entry of the country in 1999 to the Eurozone (which offered monetary stability) has contributed to the competitiveness increase of the financial sector as well as of a number of service branches, but has also accelerated the development of sectors related to consumption patterns, such as construction, health and education activities.

Even if there is a negative impact of the peripheral position of the capitals in the EU, it can be transformed into an opportunity to exploit their position as crossroads of the Danube and Mediterranean. In terms of geographical factors, it is clear that the peripheral position of the three countries and capitals within the EU has a considerable impact on their competitiveness at the EU level. An asset for the Romanian and Bulgarian regional competitiveness is given by the presence of the Danube, facilitating the transition of goods at European and global level. The advantageous position of Greece and Attiki at the crossroads of the Mediterranean, the Middle East and Northern Africa constitutes a considerable potential for raising their competitiveness. Bulgaria has a coastline along the Black Sea, and Sofia has a key location in the Balkan Peninsula.

The SEE countries had an impressive increase in economic performance, with the capitals at top, followed by a fast decrease during the crisis which affected the capitals in the same way or even more than the countries themselves. During the pre-crisis years 2000-2008 GDP in PPS per capita in Attiki approached the EU27 average, but thereafter, it recorded a significant decrease. Bucharest and Sofia showed a remarkable increase in GDP per capita before crisis, while the decrease in the crisis period was lower than in Attiki.

In this context, not only a slowdown of economic activity during the crisis is behind, but also an important decrease of investment which is highly important for competitiveness. Economic activity and investment have slow down during the crisis in the three countries and capitals after a previous fast growth. Changes as for these aspects of competitiveness of the three capitals have several similarities and dissimilarities that were analysed below.

Regarding GVA (reflecting the volume of economic activity) as for the EU27 average, Attiki presented higher scores during the last decade in comparison with Bucharest and Sofia, which approached the EU average faster than other EU countries and regions.

As for the FDI that constitute a very important component of competitiveness as well as GFC formation per capita, which is also important, Sofia (and Bulgaria) at first and Attiki (and Greece) at second present a deficiency compared to other more developed countries and regions. While there is a shortage of investments in all of Romania, Bucharest sees a higher rate of investments per capita.

Consequently, the crisis resulted a general decrease of the disposable household income, being much higher in Attiki. The disposable household income during 2000-2008 presented a significant increase in Bucharest and Sofia, while the respective change was less intense in Attiki. Hence, the growth rates of the previous economic indicators in the three capitals had an almost similar impact in household incomes. According to data which are not fully comparable and grey literature, the disposable household income during the recent years has impressively decreased in Athens, aggravating the crisis, while the decrease was clearly lower in Bucharest and Sofia.

From another point of view, the models of sectoral breakdown in all capitals and countries of SEE do not strengthen their competitiveness and important differences among them can be perceived. In the capitals the service sector shows higher shares than in the rest of the respective country. Especially, the capitals have an even higher share than the countries regarding financial services, which have strategic importance for competitiveness (see Annex IV, Table 1 and Figure 1). The financial sector of Attiki is the most important of the three cities in total capital as well as the most competitive (despite the fact that its share in the overall breakdown of sectors does not differ much from that of the two other capitals). Attiki has also a much more powerful information/communication sector together with higher technological level than Bucharest and Sofia. The most important conclusion is that strategic industrial and financial branches are week in the three capitals. Because this issue is highly important we review it in the comparison of the SEE capitals with metros of the EU core (section 3.4.2 of this report).

Another aspect that can be stated is that the three capital regions suffice in both quantity and high skilled human potential, but experience low labour productivity rates. The three capitals have a sufficient volume of human capital because their employment rate is comparatively high. The population composition per age groups as well as other demographic and social characteristics of the three capitals does not cause any major problem regarding the sufficiency in quantity as well as the skills of the human potential. However, women and young people do not participate enough in production as it results from the high unemployment rates, which are even higher in Attiki. What is more important, the human potential of the three capitals is comparatively well educated. Finally, the labour productivity index regarding the entire economy or only industry and services is low in Romania and Bulgaria while it is relatively higher in Greece and Attiki as well as in Bucharest.

Moreover, they have considerable utilisable human potential, but low investments in the R&D sector. Regarding the technological and innovation readiness as well as the specialization in strategic importance services as the Advanced Producer Services, which constitute very important drivers of competitiveness, the three countries show a low performance, especially Bulgaria and Romania; the three capitals perform much better than the countries, but lower than the regions of the European “west” and “north”. The three countries and even more the three capitals have a considerable human potential in R&D, the share of which in the total employment is growing and does not differ so much from the EU27 average. The weakness of the three countries and capitals in this respect lies in the low level of expenditure as well as long-term investment in R&D. We should stress that Attiki performs better than the two other capitals.

There is also a high share of cooperating research. These groups are located in the three capitals with prevalence of Attiki as coordinator. A weak networking and clustering and a low redistribution of effects on innovation inside the SEE can be observed. Research links among cities have been studied by several research projects. ESPON FOCI (2011) has analysed data for research projects funded by the EU included in the CORDIS database focusing on the linkages among the research groups located in FUAs of the SEE for two branches of high technology: “Information processing, information systems” and “Biotechnology”. GROSEE has updated this analysis (for 2012) for the projects the coordinator of which is located in SEE and at least one participant is located in SEE.

We have started studying the total of research cooperation branches inside SEE as well as among SEE and the rest of the EU27. This analysis will be finalised towards the final report.

From the first analysis, we have concluded that most of the coordinators (more than 90% of the total) are located in Greece. Only 8,5% of the total number of projects concern cooperation among Greek / Romanian, Greek / Bulgarian or Romanian / Bulgarian cities. Mostly the three capitals and Thessaloniki participate in the collaborations inside SEE, while Attiki has a much higher share than the other. Regarding the national / regional level linkages, the shares of the three capitals are impressively high, much higher than their share in other type of economic activities. Most links originate from Athens and are directed, in their large majority, to Bucharest and Sofia. The number of links between Bulgarian and Romanian FUAs is very low.

On the other hand, a much higher presence of firms' subsidiaries in EU "western" and "northern" cities means a much higher internationalization of their economy compared to the "southern" and "eastern" cities. Regarding the firms links among cities, ESPON FOCI has examined the links among subsidiaries (of ORBIS database firms) located in FUAs in SEE or between subsidiaries located in SEE with others located in FUAs in the rest of the EU (see Angelidis et. al., 2011). In the following, we recall FOCI's main conclusions of this analysis which explain for the most the actual situation according to our own study of a wide range of relevant grey literature (mostly for the bigger firms).

The cities (FUAs) of EU "west" (including the extended Pentagon area) prevail by far regarding the number of the firms' subsidiaries weighted by the city population; northern Europe follows at a considerable distance while southern and eastern European cities follow with much smaller numbers. Secondly, the "flows" starting from cities of the more developed parts of west, central and north Europe (mainly the "Pentagon") and oriented towards cities of the SEE are much more intensive than the other way around. The links of SEE cities with the rest of southern and eastern Europe are clearly less intensive. Athens and a few other Greek cities (much less) have much more intensive links with the rest of Europe than the Bulgarian and Romanian cities, of which Sofia and Bucharest rank highest. In the case of Greece, the higher dependence links are from Paris and London while for Bulgaria and Romania they originate from Vienna, Paris and Amsterdam, with Athens being in the 4th and 6th position in the last rankings. The firms located in Bucharest and Sofia have the most numerous links with Austria and mainly with Vienna.

If we are looking inside SEE, the headquarters located in Athens control the most subsidiaries which are located in Athens (85% of the total subsidiaries located in Greece) and very few subsidiaries located in other Greek cities (
Map **6**)**.** The respective shares for Bucharest and Sofia are slightly smaller. Thessaloniki, Varna and Cluj-Napoca follow. Links originated from Attiki are directed to Bulgaria and Romania, especially to Bucharest and Sofia.
As far as we can observe, there is an unequal interdependence of the SEE capitals from the EU western and northern metros compared to the influence of the SEE countries' cities from the respective capitals. The examined linkages among firms or research centres are very meaningful because both research centres and the subsidiaries included in the ORBIS database constitute (even at different degrees) comparatively more competitive, internationalised and modernized parts of the economy of the three capitals and countries (the enterprises not included in the ORBIS database are medium sized, small or very small). Although our research covers only a part of those linkages, we can conclude that in cases the three capitals and SEE are involved in dynamic clusters of research or economic branches, the leading role is assumed by cities outside the SEE. Such networking and clustering inside the SEE is undoubtedly weak. Also, the units of the most competitive branches in the national territories are also strongly dominated by the three capitals. Therefore, cities situated outside the capitals do not profit enough from the potential positive effects of clustering at national and regional level. In other words, the three capitals do not reinforce enough innovation and, thus, competitiveness to the rest of their countries. This refers more to Athens and less to Bucharest and Sofia.

Map 6 Intensity of links between the firms' subsidiaries (of ORBIS database) in 2008 inside SEE

Accessibility and connectivity inside the three capitals as well as at different territorial levels (countries, SEE, Europe) have different aspects. Regarding the attractiveness of the capitals (as well as SEE) for investments, the level of accessibility from inside the city to its transport gates (airports, ports, major external highways) as well as accessibility to basic services and to industrial and business zones of the city counts. The degree of accessibility for each specific type is moderate.

Social cohesion and quality of the environment

The degrees of social cohesion and the state of the environment are important indicators of the quality of life in the three MRs therefore for their attractiveness for investments. From this point of view, they have also a moderate performance in comparison with other EU regions.

According to our analysis, there is an improving, but still not enough support of competitiveness by the governance structures of the three metropolitan regions. The FMA of Attiki includes three basic levels of governance structures, one designated by the central government ("Decentralized administration") and two elected ("Region" and municipalities), while the MR of Bucharest includes two levels of governance structures (the county (judeţ) and the local level of towns and communes), both elected. Sofia capital is organized in city regions, subjected to the decisions of the city council of Sofia municipality. In all three capitals, the higher level authorities are involved in spatial development planning while the lower level authorities have competencies on the provision of public services, environment and quality of life and are involved in spatial development and local / urban planning close to their level.

In general terms, in all three cases, despite successive reforms of the administrative structures, spatial and urban development competencies are not divided clearly enough according to the respective administrative level, horizontal and vertical partnerships are not enough developed and implementation of territorial development strategies is weak. Therefore, the overall governance structure of each capital does not contribute significantly to the improvement of its competitiveness.

To conclude this sub-chapter, we should emphasize the impact of the recent crisis on the three capitals and SEE. This is undoubtedly a crisis of the entire EU that had a more intense impact on "South" countries such as Greece but also to some of the "East" countries such as Romania and Bulgaria and the capitals of the latter.

Apart from other considerations, the crisis demonstrated that the development solutions adopted by the three countries and capitals (independently from the declarations of intentions of the development plans) were not sufficiently resilient to the recent economic crisis.

Nowadays, the models of development of the SEE capitals and countries have been considerably modified due to the crisis. We should therefore consider in GROSEE very seriously the trends or the crisis period in order to examine the perspective of the three capitals and SEE. We should also take thoroughly into account (for policy options) the declared intentions of the interested governments to associate the crisis exit with reforms improving the countries' competitiveness.

Weaknesses for the competitiveness of the three capitals and SEE

- The actual breakdown of different sectors in the three capitals presents specific weaknesses due to the high share of sectors which are not relevant to export, such as constructions, several service branches as well as a high share of industrial enterprises that are not competitive at the world level.

- A second weakness, which is closely interrelated with the first, regards the comparatively low level of R&D due to low investment in R&D in the three capitals. On the contrary, the existence of a sufficient quantity of human capital with high level skills concerning both, the entire economy and the specific sector of R&D, constitutes undoubtedly an important strength.

- A third weakness concerns the low level of territorial cooperation through the networking and clustering of firms and research groups.

- Concerning internal connectivity to public services as well as business and industry zones, some weaknesses still remain because the recent improvements have not been completed and territorial planning is inefficiently implemented to some extent. Here again there is a challenge for the respective national, metropolitan and local authorities to transform these weaknesses to opportunities by completing the relevant interventions and improving the implementation of the territorial planning using EU as well as national and local funding.

- Therefore, the three capitals have considerable opportunities to develop more industry and dynamic services as well as tourism and culture activities. The main challenge for them is to develop R&D activities (with more expenditure and long term investments) in order to spread innovation throughout the entire economy as well as to develop specific branches of Advanced Producer Services (APS). Here again, further exploitation of the transport/ communication infrastructures that have been at a first level improved using the EU CSF funding is a considerable opportunity for the three capitals and SEE.

3.3.2 Comparison of the SEE capitals with other European metros

Comparison with EU capitals and second tier metros with emphasis on case studies

In order to better approach the strengths and weaknesses of the SEE capitals' development models it is useful to compare their competitiveness feature with the respective features of EU metropolitan regions (metros) which have similar population and European, national or regional role. Thus the results of the comparison would be more useful for the preparation of policy options.

In ESPON the majority of metropolitan regions are characterised as MEGAs. Because there are not recent data for the ESPON MEGAs, we have used the definition and respective data provided by Eurostat in cooperation with DG Regio under the heading "Metropolitan Regions" (Eurostat 2013). 253 cities of EU27, Croatia, Norway and Switzerland were characterised as Metropolitan Regions (MR, metros) according to the population criteria. Starting from the respective Urban Audit LUZs, Eurostat has approximated the area of the MR with NUTS3 units (see Annex IV, Map 5). Attiki corresponds to NUTS GR300 (FMA for GROSEE), Sofia to BG411 (CC for GROSEE) and Bucharest to RO321 (CC for GROSEE)

Eurostat (2013) has divided EU metros in (a) capital city regions, (b) "second tier metro regions" which are in fact "regional capitals of large areas" or "regional capitals with an important national role" and (c) "smaller metro regions" (see Annex IV, Map 5). It is obviously more appropriate to compare the SEE capitals with capital city regions and second tier metros. Unfortunately, data for the Eurostat metros are available only for a few indicators. So, the comparison of the SEE capitals with all the European MRs can't include a number of important aspects of competitiveness. Therefore it is worthwhile to also compare the SEE capitals with a number of cases of capitals and second tier metros. We have used as an additional criterion for the selection the inclusion of the case studies in the EU "north", "south" and "east". We have selected:

- Stockholm and Amsterdam, capitals of EU "north" countries, Rome and Lisbon, capitals of EU "south" countries and Prague, capital of an EU "east" country; the population of Amsterdam and Rome is comparable to that of Attiki and the one of Stockholm, Lisbon and Prague to those of Bucharest and Sofia.

- Munich, Lyon and Manchester which are second tier metros of EU "north" with population comparable to those of Bucharest and Sofia.

Indicators and data used

Eurostat data for metros refer only to some of the competitiveness' indicators used in GROSEE. For the indicators not included in the Eurostat metros' database, there are Eurostat data for the NUTS3 units which constitute each metro. For some of these indicators we have aggregated the respective data for each metro. So, we could use more indicators than those included in the

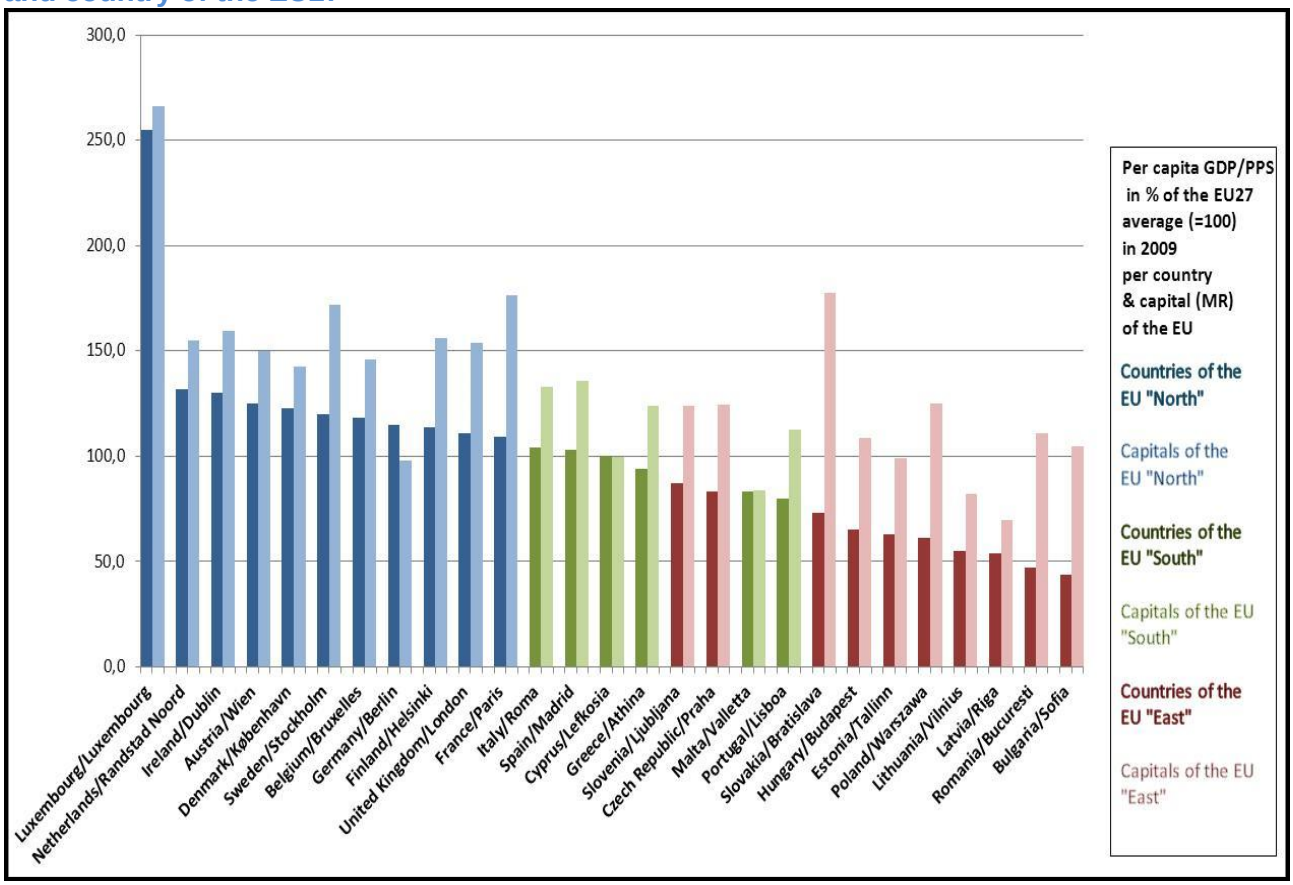
Eurostat metros' database. Using the same aggregation method we have calculated data for the case study metros more recent than those included in the Eurostat metros' database.

Also, for some of the GROSEE competitiveness' indicators, there is data only for NUTS2 level. Therefore, we have used obligatorily approximations of the Eurostat metros with NUTS2 units. In some cases, these approximations comply fully with the approximations at NUTS3 level used by Eurostat. In some other cases (as for example this one of Munich) NUTS2 approximation is quite wider from the Eurostat metro area (Table 2 in Annex IV show the indicators used for the case study metro per NUTS level of approximation.)

The results of the comparison

Before the crisis SEE capitals experienced a fast growth much greater than their countries and approached GDP per capita of the "north" metros.The three SEE capitals had in 2009 (year close to the start of the crisis) GDP PPS per capita higher than the EU27 average (Figure 2 and Annex IV, Map 6).

Figure 2 Per capita GDP PPS in % of the EU27 average (=100) in 2009 per capital city metro and country of the EU27



Own elaboration, based on Eurostat data

The highest values of EU capital city metros correspond to those of the "Pentagon", the core of the EU "north". Amsterdam (belonging to the "Pentagon") but also Stockholm, case studies of the EU "north", have clearly higher values than the SEE capitals, while Rome, "south" capital city metro, has a higher value than Attiki. However, the value for Lisbon ("south") is closer to Bucharest and Sofia and lower than Attiki, while Prague ("east") is on a par with Attiki and higher than the two other SEE capitals.

Before the crisis, the EU metros performed better than the respective countries but the difference of the three SEE capitals from their countries was even more considerable. Sofia and Bucharest performed impressively higher than their countries, like the other "east" capitals. This is the case for Sofia and Bucharest (Figure 2). During 2001-2008, the EU metros economy grew faster than their countries. the SEE capitals have progressed much better than the majority of the other EU metros. The EU "East" capitals grew even faster than their countries; their gains as for the GDP in PPS measured in percentage of the EU27 average (=100) were very high (Annex IV, Map 7). Bucharest gained the most among all metros. Sofia and Athens follow. Gains are also observed, although lower than the SEE capitals, in the case of Prague ("east") and very limited in Stockholm ("north").

During the crisis years 2008-2010 Attiki and Bucharest "lost" impressively, while "north" metros remained roughly "stable", except for Munich which "gained" a lot. Attiki and Bucharest recorded high loss in % of the EU27 average (Table 4 and Annex IV, Figure 2) while Sofia "gained". From the "north" metros, Munich "gained", Amsterdam and Lyon remained "stable", and Stockholm and Manchester lost slightly. The "south" capitals, Rome and Lisbon, "lost" and "gained", respectively, while the "east" Prague lost 4 points.

The sector breakdown models make the development of the SEE capitals much less competitive and resilient to actual crisis in comparison to the metros of the EU core.We broaden here the respective analysis in section1 for the SEE capitals, as the comparison with the EU core metros makes much more evident the weaknesses of the first regarding competitiveness and resilience in the recent crisis.

Table 4 SEE capitals and case studies metros: GDP PPS per capita as % of EU27 average (=100) 2008, 2010, 2008-2010 change in percentage points

Types of metros	Metros	2008	2010	2008-2010 change in percent. points
SEE capitals	Sofia	100	105	5
	Attiki	121	115	-6
	Bucharest	117	110	-7
Capitals of the EU north	Amsterdam	154	154	0
	Stockholm	169	168	-1
Second tier metros of the EU north	Munich	180	184	5
	Lyon	140	140	0
	Manchester	97	96	-1
Capitals of the EU south	Rome	120	117	-3
	Lisbon	109	112	3
Capitals of the EU East	Prague	125	121	-4

* Approximation NUTS3 of the metros (Eurostat), Rome: approximation NUTS2.Own elaboration, based on Eurostat data

As we have already stressed in the analysis of the sector breakdown on the base of Gross Value Added (GVA) in 2009 (Figure 3 in Annex IV[1]), regarding financial activities (banks) and insurance, as well as information and communication branches, which are of strategic importance for competitiveness, Attiki presents a more important volume of GVA in comparison with the two other capitals.

[1] We have also taken into account the GVA in millions of euro per economic sector at basic prices in 2009

In addition, all three capitals present higher shares in trade, hotels and restaurants [transport] as well as in homes building and real estate, which all are introvert activities for the most. Bucharest and Sofia record also high shares in industry and construction, while Attiki has higher presence of public administration, defence, education and health.

In contrast, the sectors which are more crucial for competitiveness, such as financial activities, information and scientific and technological services have the highest total share in capital and second tier metros of the EU North; this share is lower in "south" capitals and Prague ("east" capitals) (Table 5 and Annex IV, Figure 3) but also the specific analysis of APS and HT branches. In this respect, Attiki is closer to the "South" model while Bucharest and Sofia have clearly lower specialisation in these sectors.

Table 5 SEE capitals and case studies metros: Gross value added per economic sector in % of total GVA at basic prices in 2009

Types of metros	SEE capitals			Capitals of EU North		Second tier metros of EU north		Capitals of EU South		Cap. of EU East
	Sofia	Attiki	Bucharest	Amsterdam	Stockholm	Munich	Manchester	Rome	Lisbon	Prague
Agriculture etc	1	0	0	1	0	1	2	1	0	1
Industry (exc. construction)	17	9	20	10	13	21	16	9	10	20
Construction	9	4	13	5	4	4	7	6	6	6
Trade, transport	21	22	23	20	19	21	23	20	23	21
Information and communication	10	8	12	7	9		11	8	7	9
Finance & insurance	11	6	6	12	9	35	13	7	12	9
Real estate activities	7	17	4	7	11		7	14	6	8
Prof., tech. & support serv.	8	8	9	14	12		8	10	10	10
Public administration, education, health	11	19	10	20	18	19	11	19	22	13
Arts, activities of households	3	5	4	3	4		3	5	3	3

* Approximation NUTS2 of the metros (Eurostat). Own elaboration, based on Eurostat data

On the contrary, as we have already stressed, all SEE capitals have higher shares in construction (of buildings and infrastructures) and real estate as well as in trade and restaurants, -(sectors comparatively less important for competitiveness) in comparison with the "north" metros.

A kind of «bubble» in construction, real estate and other introvert branches have contributed to the emergence of the crisis in the SEE capitals. In this context, the more than expected slowdown in these branches during the crisis makes more difficult the exit from the crisis. Before the crisis, the construction / real estate sector was developing fast in the SEE capitals, as it was the case in the south capital city metros, resulting in a kind of «bubble» in construction with negative impact in the overall economy.

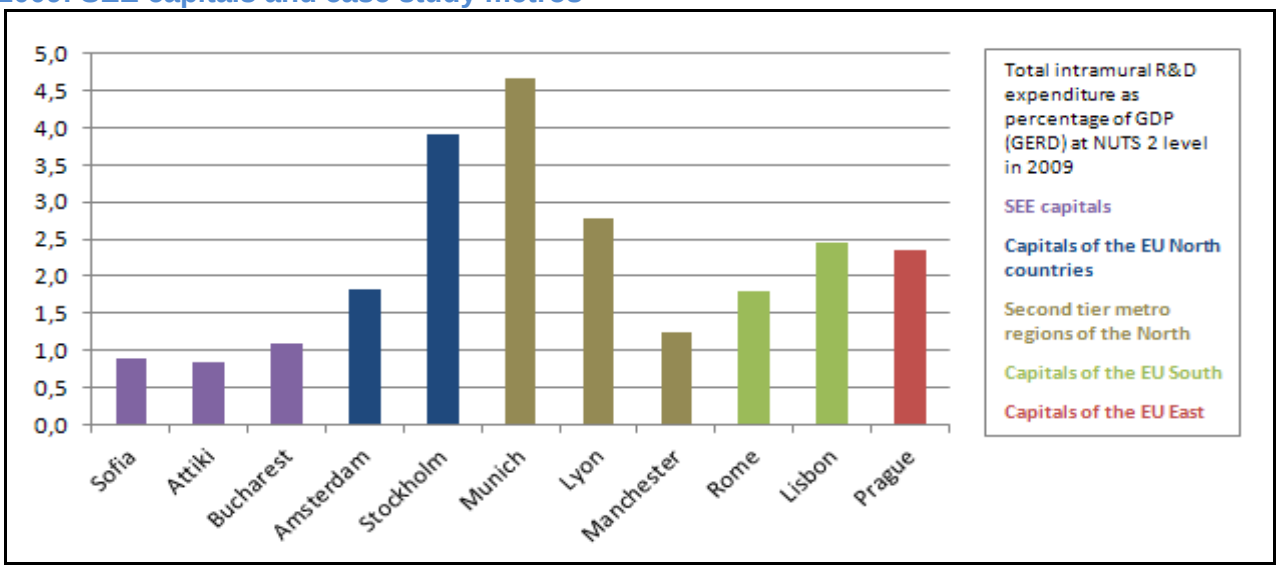
During the crisis, this sector has decreased to almost 50% since 2008 in Attiki and Bucharest (although it still has an important share regarding GVA). Significant decrease has also been observed in trade, restaurants and personal services as well as in public administration, education and health, introvert branches related to internal consumption for the three capitals.

The economic crisis is to a great extent responsible for the decrease of the GVA in the above sectors (especially in construction) and for the actual reorientation of the development models

inside SEE. The former -before crisis- sector breakdown of the SEE capitals constitutes a major factor for the low resilience of their development models, especially in the case of Attiki.

The highest "competitiveness distance" of the SEE capitals from the EU core metros regards technological and innovation readiness. The percentage of the R&D expenditures as for the GDP (Figure 3) in the SEE capitals remains exceptionally lower than the EU27 average. It is even lower compared to capital city metros (Stockholm) and to second tier metros (Munich) of the "north". Their performance remains considerably lower even compared to capitals of "south" (Lisbon) and "east" (Prague).

Figure 3 Total intramural R&D expenditure as % of the GDP (GERD) at NUTS2 regions in 2009: SEE capitals and case study metros



Own elaboration, based on Eurostat data

As for patent applications to the EPO per million of inhabitants, in 2008, the differences of the SEE capitals (i.e. Sofia 8) from "north" capitals and second tier metros (i.e. Stockholm 478 and Munich 637) are extremely large, with Attiki scoring better than the other two. The South case study, Lisbon, also presents a very low value close to the respective of SEE. During 2008-2009, the values of the above patent index have been reduced similarly for all case studies, closing a bit the gap from the SEE capitals.

In the case of households with broadband access in 2011, all SEE capitals are far behind the "north" case studies (Table 6). They are closer to the equivalent rates of capitals of "south" and "east". During 2008-2011, the rates of the SEE capitals increased significantly in percentage points (Bucharest gained 50 points).

Table 6 SEE capitals and case studies metros: Broadband penetration as % of households 2008, 2011, 2008-2011 change in percentage points

Types of metros	Metros	2008	2011	2008-2011 change in
SEE capitals	Sofia	31	54	23
	Attiki	34	53	19
	Bucharest	21	54	33
Capitals of the EU North	Amsterdam	77	86	9
	Stockholm	84*	91	7
Second tier metros of the EU north	Manchester	52	68*	16

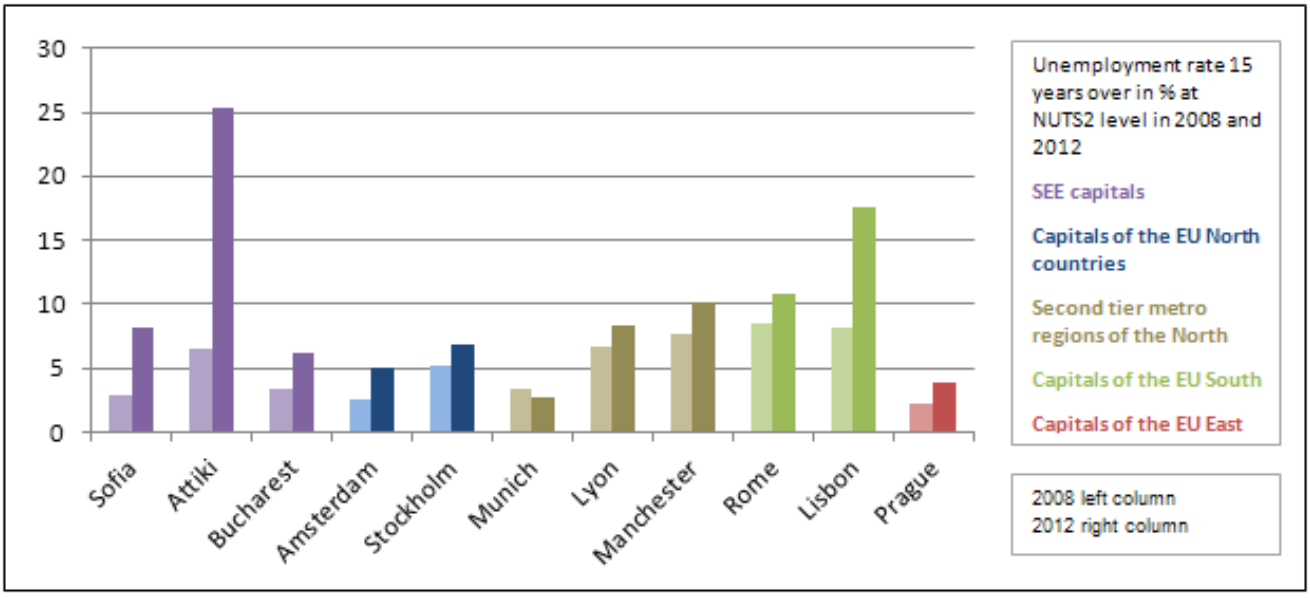
Capitals of the EU South	Rome	38	55	17
	Lisbon	50	67	17
Capitals of the EU East	Prague	45	67	22
Approximation NUTS2 of the metros (Eurostat), *last available data from 2009,Own elaboration, based on Eurostat data				

Labour force and human potential: lower competitiveness distance of the SEE capitals from the EU core metros in comparison with innovation

Specifically for labour productivity[2] in 2010 (see Annex IV, Table 3), major differences were found inside the SEE, with Attiki exceeding the other two and being closer to "north" capital city and second tier metros. Sofia and Bucharest are closer as for this index to capitals of "south" and "east".

During the crisis, the employment rates for all SEE capitals decreased substantially except for Bucharest (Attiki: -12 percentage points). These rates are considerably behind those of the "north" case studies of capital city metros and second tier metros and are closer to the case studies of "south". Unemployment rates (aged 15 over) for the SEE capitals increased excessively in 2012 with Attiki (+19 perc. points) exceeding all case studies and being closer to Lisbon, case study of "south" (Figure 4). The rates of Sofia and Bucharest are similar to those of the "north" capital metro of Stockholm and to the average rate of the "north" second tier metros

Figure 4 Unemployment rates (15 years over) in % at NUTS2 regions in 2008 and 2012: SEE capitals and case study metros



Own elaboration, based on Eurostat data

Moreover, the share of tertiary educated people (30–34 years) to the total population for 2012 in the SEE countries exceeded the EU27 average (36%). It is still lagging far behind the rates for Stockholm (56%) case of "north" capital whereas it is significantly above the rates of "south" and "east" capitals. The rates of Bucharest and Attiki increased fast during 2008-2012, surpassing the rates most of the other case studies.

[2]Labour productivity was calculated as the ratio of the regional GDP in millions of PPS per 1000 employees

Conclusions: big differences of the development models of the SEE capitals from the EU core metros explain their disparities in competitiveness and resilience

The model of economic, social and territorial development for Bucharest and Sofia differ significantly from that for Attiki. However, similarities among the three allow using a common competitiveness pattern for some aspects of the comparison with other EU metros. This SEE capitals model is comparatively more based on introverted sectors (construction of infrastructures, real estate, health, education) than on extroverted ones (products of high technology, innovation) in comparison with the EU northern metros. This explains for the most the lag of the SEE capitals in overall competitiveness in comparison with the "north" metros, which lead to the fact that the first are less resilient to the crisis than the latter.

The more detailed analysis of the performance and the competitiveness factors of these two models as well as of the other models of EU metros, explained previously, further highlights the competitiveness weaknesses and opportunities of Bucharest, Sofia and Attiki.

If we compare Bucharest, Sofia and Attiki, there are differences in some strategic branches and in terms of unemployment, a common prevalence of introverted and less resilient model can be observed.

"North" capital city metros are the more performing, competitive and resilient to crisis because of the power of highly innovative extrovert sectors and a highly skilled workforce.

"North" second tier metros follow for the most the development model of the "north" capital city regions. They perform highly. Despite their high unemployment rates, they retain a high level labour force. Despite the fact that Manchester is considerably less developed than Lyon and Munich, all three have proven to be resilient enough to the current economic crisis.

On the other side, "south" capital city metros perform moderately, they are moderately competitive and less resilient to crisis because of the high share of introvert sectors. They are quite close to the SEE capitals regarding the economic performance and the sector breakdown model. They present moderate indices of innovation. Labour force seems one of the weakest points of the "south" capital city metros, with considerably low rates of labour productivity, employment and tertiary education along with high unemployment rates. In general lines, their development model is less resilient to the current economic crisis. Prague, "east" capital city metro has an intermediate position between the "south" metros and the less developed "east" metros, but it has proven to be resilient to crisis.

3.3.3 Drivers of competitiveness of the three capitals in the metropolitan and national contexts, the SEE and the wider Balkan area, Europe and the world

The Core city (CC) areas have transmitted the dynamism, but also the disadvantages of their development model to the rest FMA. The CC has grown fast before the crisis, but had highly slowed down during the crisis. In all three cases the CCs, which had earlier higher competitiveness, have gradually integrated the other areas of the FMAs and transmitted to a large part of them the development dynamics and the competitiveness of the City Cores. In other words, the CC functioned as a strong territorial driver of competitiveness for the large part of their FMAs; this is particularly evident for the eastern area of Attiki and for Ilfov in the case of Bucharest.

Overall, the three capitals do not redistribute enough innovation and technological readiness and, more generally, they do not function as territorial drivers of competitiveness for the rest of the countries.

Direct Investment from Attiki represents a key factor for raising interdependency in SEE, and is, by priority, directed to Bucharest and Sofia. During the decade of the pre-crisis period, the three capitals functioned as major engines of the development of their countries and SEE while the economic cooperation and interdependency among them have increased considerably. The most important driver of such economic cooperation was the Direct Investment (DI) from Attiki to Bucharest and Sofia regarding specific branches such as the financial sector (mainly the banks),

telecommunications, retail trade (hyper markets) and specific branches of services and, at a lower level, infrastructures construction, housing as well as real estate. Territorial cooperation in research was also more centred on the three capitals and much less to the rest of the three countries. In contrast, DI in industry has been directed less to Sofia and Bucharest and more to the regional capitals and to the smaller cities in the two countries.

Economic cooperation among the SEE capitals has gradually been extended to Western Balkans capitals and countries, but it has slowed down during the crisis. This kind of cooperation has not been limited only to the three capitals and countries, but has also been extended to their neighbouring areas of Western Balkans and Turkey (as well as Moldavia). This cooperation, initiated mainly from Attiki and Greece, has been enlarged including gradually Belgrade, Skopje, Tirana and Istanbul. This interdependency that decelerated during the crisis period constitutes an important driver of competitiveness for the three capitals and SEE because it considerably increased investments in SEE and enabled the turnover increase in a large number of enterprises in relation to their improvement in R&D.

The reinforcement of FDI and transport links, originated from Western Europe, has contributed to a moderate raise of the competitiveness of the three capitals and SEE, but has aggravated the deficit of their external trade. Economic exchanges among the three capitals and SEE with Europe and the world concern mainly Western Europe and are focused on some specific branches of industry and services. FDI originated from Western Europe has contributed to a moderate raise of the competitiveness of the three capitals and SEE but at the expense of a growing deficit of the SEE economies regarding the balance of their external trade.

Finally, an important territorial driver of competitiveness regarding these multi-level interdependencies is the continuous increase of the accessibility in the three capitals and SEE to the rest of the EU space through the improvement of the transport axes at European level, mainly those included in the TEN-T.

3.4 Options for policy developments

The chapter represents a synthesis of the main ideas resulted from the interviews with some of the most important stakeholders from the three metropolitan regions of the three capitals and the discussions undertaken in the frame of the workshops held in Bucharest, Sofia and Athens.

The people interviewed cover different sectors of the economic, environment, transport and territorial issues in the studied areas, such as: central and local administrations, NGO's, other public bodies, academic institutions, companies.

3.4.1 Initial policy recommendations

At the first stages of the project, GROSSE researchers, based on the territorial analyses, came up with a draft proposal for policy recommendations aiming at the development of the three EU-SEE capitals. During the development of the project, feedbacks were received from the CU, beneficiary institutions, and participants at GROSSE workshops. During this second stage of the project, the project team come into direct contact with the local actors in the three study areas, getting to know their perceptions, desires and needs.

The initial policy recommendations which are listed below, could be verified and revised on the basis of the received inputs form various stakeholders.

In the next sub-chapter we will see the main results and key findings of the interviews made so far, and how close these draft policy recommendations came to the perceptions and needs of the interviewed stakeholders and the participants to the workshops held in the frame of the project.

3.4.2 Key messages from the interviews with the Stakeholders

Bucharest and its metropolitan region

Interviews were carried on with representatives of the two regional development agencies in the study area (South Muntenia Regional Development Agency and Bucharest-Ilfov Regional Development Agency), of local authorities (Giurgiu County Council and Otopeni Town Council), of academic institutions (Geography Institute and National Economics Institute of the Romanian Academy) and of other public bodies (Bucharest Environment Agency, Romania-Bulgarian Chamber of Commerce and Industry).

Economics

The stakeholders consider that the services sector is the most important economic activity for Bucharest. Other strategic economic activities for Bucharest are IT, automobile construction, constructions, food industry, construction materials and machinery and equipment industry. At the same time, the stakeholders consider that for the metropolitan region the strategic economic activities are agriculture together with food industry and manufacturing in general.

Almost every stakeholder expressed a different vision about the structure and functioning of Bucharest and its metropolitan region in relation to Sofia and Athens and their metropolitan regions. Even though they admitted the fact that Bucharest's critical mass offers many job opportunities and a market for their products and services, so far, authorities and institutions outside Bucharest (Giurgiu County Council, South-Muntenia Regional Development Agency and Otopeni City Hall) consider that **the capital city drains out the surrounding region** of its resources (financial and human) instead of fostering development.

Still, almost all the stakeholders identified the need of **an integrated development master plan** for Bucharest and its metropolitan region. In this regard, the main policy concerns should focus on **creating a competitive environment** for services, encourage innovation in the IT industry sector, creating the conditions to develop the automotive industry and/or bringing in car manufacturing.

Environment

The stakeholders from the environment field consider that Bucharest has no major environmental problems. Cooperation with Bulgarian partners is significant, but there was no mention about the collaboration with Greek partners, or about projects run by all three of them. However, stakeholders from other fields consider that **Bucharest has a fragile and vulnerable environment** (due to poor used water treatment facilities, waste management, and unauthorized landfill).

The stakeholders consider that the **main policy concerns should be focused on creating an integrated management system of the environment**, with a central body that has the overall view and coordinates all the efforts in this respect.

Transport

Every questioned stakeholder considers **transport as the main priority**, as well for the inside of the metropolitan region of Bucharest but also between the three EU SEE capitals.

The first priority for Bucharest metropolitan region is considered to be the **completion and modernising of the surrounding ring road**. Secondly, **making efficient the railroad system**, both for long and short distances is seen as important. One stakeholder considers that public metropolitan transport system can be developed only in relation to the jobs supplied by industry in the metropolitan region. Stakeholders sustained that especially Călăraşi and Giurgiu need **to develop their river** ports and thus enhance their role as intermodal nodes on the Danube. In general it is considered that there are policies for every kind of transport and plans (the Master Plan for Transport), so in this field the only issue remains **the availability of financing.**

South East Europe cooperation

At metropolitan level there were opinions that the administrative relations between Bucharest and the administrative units from the metropolitan region are lacking efficiency. There is also a strong concern that institutions from Bucharest will take all the funding for different cooperation. More than this, some stakeholders questioned the logic that stood behind the financing of projects in the regional growth pole (such as Ploieşti) of which the rest of the region had no benefit (city tram lines, creating parks). They argued that **projects implemented by the regional growth pole should create benefits for the whole region**, not only for the growth pole.

At macro-level, it could be noticed a general agreement on the lack of any kind of collaboration or cooperation of institutions or companies, between Bucharest, Sofia and Athens. More than that, no stakeholder could foresee what kind of collaborations could be further developed, especially in economical field. The stakeholders couldn't point out existing complementarities or synergies.

One stakeholder sees the current situation as follows: there are three major capital cities that don't cooperate economically. The question is if there are economic markets in Sofia, Athens and Bucharest for such cooperation? If there has been a market an economic cooperation between the three capitals had been developed by now.

Although the stakeholders couldn't point out relevant collaborations with partners from Athens and Sofia, many of them mentioned projects in various domains financed by the Romanian-Bulgarian Cross-Border Operational Programme. Roughly, the stakeholders highlighted some important dysfunctions of the legal and administrative framework (significant differences between the Bulgarian and Romanian ones with a quite centralised and bureaucratic Bulgarian system).

Stakeholders sustain that collaboration between Athens, Sofia and Bucharest is so difficult to be established because there are **no functional relations between them.** As already mentioned, none of the interviewed stakeholders could identify common economic grounds on which to collaborate.

Public policies in this domain should focus on **maintaining the balance between the politic, administrative, public and economic interests**.

Sofia and its metropolitan region

Bulgarian stakeholders underlined the growing necessity **to utilize the potential for growth of the three capital cities for a balanced development** at both national and regional level as a major challenge for decision makers.

Better accessibility and connectivity, investments in technical and social infrastructures and sound planning are of crucial importance for the transfer of activities from the core cities to the periphery of the metropolitan area.

Economics

In the view of the stakeholders, the economic crisis has played a twofold effect on the development of Sofia in recent years. The crisis has increased the migration flows to the capital as being the biggest labour market, which affected all sectors of the public life. At the same time the crisis has put on hold investment projects for extensive development of the city. According to stakeholders, industry and agriculture have been underestimated as potential drivers of economic growth of the capital at the expense of credit given to the sector of trade and services. As priority economic sectors with highest potential for the compatibility of the capital stakeholders point out Information technologies, pharmaceutics, health services. The potential for development of agriculture in the territories around the core is evaluated as a very important one. The capital used to benefit forma a well-developed sector of **agriculture** in the surrounding villages, and this is considered as a potential and an opportunity for future economic growth of these territories.

Demographic structure and well being

In the opinion of stakeholders the dynamics of population change in Sofia capital will slow down, one of the reasons being the uncertain perspective for economic recovery. A potential for redirection of investments to attractive areas in South-East Bulgaria is envisaged with the

subsequent effects on demographic trends and migration patterns. As a major challenge in terms of structure of the labour force stakeholders point out the retention of high skilled specialists in the R and D sector and the attraction of Bulgarian emigrants from abroad.

According to stakeholders the quality of education is the factor with highest importance for the state of well-being in the capital. The state of environment is rated as the second factor of highest importance. Access to health services and the level of income hold the 3rd and 4th position.

Environment

In terms of efficient utilization of environmental resources the stakeholders pointed out as a major problem the high consumption of water and major losses in the water supply network. Furthermore Sofia has large reserves of mineral water, which are not efficiently utilized. According to stakeholders the strategy for tourism development in Sofia is inconsistent and needs to be revised with a better focus on few and clear priorities. In this regard the protected natural park – "Vitosha Mountain", has an important potential, as pointed out by stakeholders. Since Vitosha is a protected site in the network "Nature 2000", **there is a need for a careful balance between nature preservation and tourism development.** The conservation of green areas inside the city, especially in residential areas and the development of planned parks should be a major priority in the **management of the green system**, according to stakeholders. This requires **sound and coherent planning** since separate parts of the city parks have change ownership in the process of land restitution and are currently in private hands. The municipality has to consider the idea **to set up a municipal land bank** for compensating such owners with public lands in exchange for preserving and renewing the city parks.

Transport

Investments in transport infrastructure for better internal connectivity should be a matter of long term planning, say stakeholders. In their view, rail infrastructure was not taken properly into account according to its major regional importance. **Inner city road infrastructure should be improved** for avoiding congestions, whereas for public transport **renewal of vehicles stock** is a major issue. The development of pedestrian zones in the core city area and Bus Rapid Transit systems is advised as well as the completion of the planned metro lines. The metro network and the underground buffer parking lots at the entrance and exit road arteries are considered crucial for the regulation of traffic flow. Concerning the technical infrastructure a serious problem is **the underground infrastructure network that needs to be mapped.**

The completion of major transport infrastructure projects, which are part of the TEN-T network, is of crucial importance for the competitiveness of the region, the stakeholders say. As major projects, the completion of the highways and roads, connecting Sofia to Bucharest and Sofia to Thessaloniki and the section Sofia-Kalotina as part of the pan-European corridor 10 were pointed out. The Sofia-Skopje rail connection is also of high importance.

Territorial development and urban planning

With coordinated efforts on national, regional and local level stakeholders consider as realistic the overcoming in the next 15 years of the existing territorial barriers for the development of the capital in the North and Northeast direction. As potential territories for this development stakeholders point out the metallurgical complex Kremikovtzi, the territories in proximity of the planned North speed tangent, the territories near Sofia airport. The existing elements of the green system in the northeast direction as uninterrupted green zones, river beds, connected park system create a potential for directing the development of the capital to mountain Stara planina and the river Iskur, point out stakeholders.

The old industrial plots and former agricultural areas are considered major development actives, which should be utilized. Urban renewal is considered crucial for the development of the capital. Stakeholders point out as difficult to judge the rate of cooperation and transfer of activities between the municipalities, falling within the scope of the functional metropolitan area since information on such activities is insufficient.

South East European cooperation

All interviewed stakeholders have pointed out the underestimated potential of cooperation between countries, regions and cities in South-East Europe. As a main driver of such cooperation t**he realization of major infrastructural projects for improving accessibility and connectivity** was emphasised.

For the time being stakeholders consider as marginal the investments in the economy of the capital, coming from Bucharest. Investments from Athens are mainly directed to banking services, franchising and other low-capital activities. The participation in common projects for the construction of transport and energy infrastructure is pointed out as a major factor for increasing the impact of the development axes Athens-Sofia-Bucharest. Stakeholders point out as major barriers for cooperation the language barrier, low connectivity between the three capitals and the misunderstood idea for direct competition between them. Lack of easy to get information on the possibilities for investments and cooperation is also pointed out as a problem.

According to stakeholders the three capitals should increase the level of cooperation in INTERREG IVC and take advantage of all opportunities for trans-border and trans-national cooperation. The experience in current projects is evaluated as a good base for future cooperation, especially in the fields of waste treatment, innovations, transport. According to stakeholders there is unused potential for cooperation with Skopje and other big cities on the Balkans. Cooperation with Istanbul and Belgrade is hindered since it does not fall in the scope of trans-border cooperation programs, point out stakeholders. Cooperation between cities along the Danube should further be developed. In regard to this stakeholders point out that more support is needed for the small and mid-size companies in the settlements along the Danube. The development of communications, the transfer of technologies and the cooperation between universities are pointed out as major factors for improving the connections with the EU core.

Conclusions

Most of the initial recommendations were confirmed by the stakeholders interviewed in the three MAs. Some recommendations, mainly on environmental, economic or major infrastructure issues were confirmed in all three areas. Some others got confirmation in only two or one of the areas.

The table below shows that more than 2/3 of the 23 recommendations got a confirmation during the interviews carried on. Some common elements should be pointed out, such as:

- in all three areas there was a concern about the relationship between the core city and the surrounding regions and the important role of latter ones, the need for an integrated planning and balanced development at metropolitan level were emphasized
- economic competitiveness was also an issue that has been underlined by most of the stakeholders; however solutions were seen in different ways but a common ground seems to be the need for an improved major infrastructure insuring a better accessibility in the three areas
- environment was another matter of common interest, although due to different conditions and circumstances; the need for a better, integrated environmental management, improving the microclimate and protection of green areas were some of the solutions repeatedly mentioned
- transport infrastructure and the achieving of the pan-European corridors and the TEN-T projects was seen as essential elements for the development of the region and improvement of inner-regional connectivity as well as increasing its connectivity and accessibility to and from other regions

Besides the above mentioned aspects, the interviewed stakeholders expressed their concerns on social issues, on governance, education and research, urban mobility and ICT.

Important inputs were given in relation to planning and programming. In both metropolitan areas of Bucharest and Sofia it has been pointed out the unsustainable relationships of the core city with its

surrounding territories and the increasing regional disparities. Recommendations for a more sound and integrated metropolitan planning and for a better use of EU funds for the next programming period, were done. It was pointed out that the growth poles policy should be better implemented in order to generate a more clear leverage effect at regional levels.

Athens insisted on the need of a more polycentric development of its metropolitan area to counteract the current tendencies of urban sprawl. This of course should apply to the other two MAs too.

The importance that should be paid to sectors and areas that have been less considered as priorities by now, such as agriculture or railways has been emphasized in several cases. There could be also mentioned as important remarks: improvement of urban mobility, culture and tourism as fields that should be developed in order to make a better use of local potential and values, support given to higher education, R&D and ICT sectors.

As a final conclusion, the remarks of the interviewed stakeholders in the three areas are confirming the initial findings and are stressing some important points which could help to set up priorities and to better ordering the policy recommendations. Special interest given to environment, agriculture, transports (including the Danubian corridor and its harbours), competitiveness, research, culture, tourism, planning and governance is a good support for drawing a more sustainable strategy for the SEE region.

Table 7 Policy recommendations confirmed by the interviews taken in the 3 MAs

Policy recommendations proposed	confirmed by the interviews
Strengthening the Bucharest-Sofia-Athens development axis as well as the development of the three capitals metropolitan regions:	
• Diversifying local regional economies with emphasis on manufacturing industries and agriculture	✓
• Developing policies to support the R&D sector and especially the creative and innovative sectors.	✓
• Increasing the attractiveness for specialised services in Bucharest and Sofia.	
• Valorising the high cultural and touristic potential by improving infrastructure, services and promotion of the area within common programmes	✓
• Improving social services, especially for disadvantaged groups	✓
• Expanding general infrastructure to improve communication and access to information	✓
• Improving labour and human resources development policies in parallel with social ones in order to avoid social exclusion and improving access to labour market by encouraging development of new technologies	✓
Improving environment and quality of life inside the three capitals:	
• Implementing measures and active policies in the field of environmental protection and resilience to climate change and natural hazards	✓
• Improving systems of survey and disaster management	

• Reducing traffic problems and improving communication in the metropolitan areas to better control and reduce the sprawl tendencies, supporting the idea of a „compact city”	✓
• Promoting urban agriculture towards the improvement of urban environment	
• Improving microclimatic conditions and reducing urban heat islands	✓
Improving internal connectivity of the three metropolitan areas:	
• Improving public transport in Attiki and developing transport infrastructure in both Bucharest and Sofia	✓
• Developing mobility plans	✓
Improving integration inside the three capitals through better governance at metro level based on common strategies for the CC, FMA and OMR, implementing priority measures promoting integration at FMA level:	
• Establishing a special legal and institutional framework for metropolitan regions	
• Developing common spatial and socio-economic strategies with the adjacent towns and communes	✓
• Implementing strategic and action planning especially for enhancing the role of the metropolitan areas and surrounding regions as a leverage factor at territorial level	✓
Improving cooperation among the three capitals and inside the South-East Europe:	
• Enhancing the cooperation in all sectors by setting up cooperation networks in R&D, among entrepreneurial associations and professional organizations.	
• Developing active cooperation networks among universities and faculties in both educational and research programs	
• Setting up a regional research centre similar to the NORDREGIO in the Baltic Area	✓
• Improving territorial cooperation by the networking companies and of research centres	
Improving transport infrastructure with focus on TENs of Transport to promote the development of Bucharest-Sofia-Attiki axis and territorial integration of SEE:	
• Expanding the pan-European corridors to Athens and improving the direct road and rail connections of the three capitals envisaging a Balkan Corridor to better connect the Danube corridor to the Aegean and Mediterranean seas	✓
• Upgrading port facilities to enhance intermodal transport through cooperation of rail and maritime transport (both passengers and freight).	✓

3.4.3 INTERREG Projects

The GROSSE project doesn't aim at analysing the impact of the INTERREG programme; this has already been done in "The Intermediate evaluation of the Interregional Cooperation Programme INTERREG IVC". Repeating the conclusions highlighted in the respective study does not bring

added value and therefore the conclusions that resulted from the ex-ante and ex-post evaluations of INTERREG Programme were completed with the evaluation of INTERREG IVC projects and South-East Europe Programme that were unfolded in Romania, Bulgaria and Greece.

Needs

The two main priorities of the INTERREG IVC operational programme are well constructed, covering all the key aspects regarding "growth, jobs and sustainable development" (Interregional Cooperation Programme INTERREG IVC, 2007), but the future programming period should take into close consideration the Europe 2020 Strategy. High-ranking project objectives („To improve, by means of interregional cooperation, the effectiveness of regional development policies in the areas of innovation, the knowledge economy, the environment and risk prevention as well as to contribute to economic modernisation and increased competitiveness of Europe") and specific objectives need to be strongly correlated to the EU2020 Strategy.

The 10 sub-themes of the INTERREG IVC programme are all included under the three pillars of the strategy and the seven flagship initiatives: "the thematic focus of the current INTERREG IVC programme is already sufficiently broad for ensuring that inter-regional co-operation is able to contribute to the "EU headline targets" and the seven "flagship initiatives" as promoted by the Europe 2020 Strategy" (The Intermediate evaluation of the Interregional Cooperation Programme INTERREG IVC, p. 125), but nevertheless the future sub-themes have to be correlated and referenced to the Europe 2020 Strategy targets. The Europe 2020 Strategy is not without its shortcomings and the careful suggestions made by the ESPON SIESTA project also should be taken into consideration (some regions cannot reach the Europe 2020 targets which are guidelines and not compulsory).

Future INTERREG projects, and especially Strand C projects, should pay more attention to bottom-up project proposals. In this sense, the managing authority should consult with the potential beneficiaries of the programme in order to take into account their views and needs.

Past INTERREG ex-post evaluations (INTERREG III Community Initiative (2000-2006) Ex-Post Evaluation, 2010) highlighted the fact that national level auditing need to be "more efficient and harmonized", but also a simplification of application forms, provisions, procedures, regulations, reporting and a greater budget flexibility needs to be implemented. This reduction of bureaucracy is still of actuality for the next programming period.

Opportunities

INTERRREG programme offers the opportunity and fosters a considerable potential to establish complementarities and synergies through co-operation and co-ordination with other EU and national programmes that should have territorial impact in the same territory.

Other opportunities are given by the fact that:

- Cooperation that already existed in some countries between citizens and institutions;
- The maturity of cross-border cooperation in some cases;
- The existing strategies for cross-border cooperation outside the INTERREG Program; Other associated programs such as ESPON, South East Europe Transnational Cooperation Program etc;
- Policies provided by the EC

Threats

We consider as threats the following issues:

- The low level of previous direct cross border cooperation for other countries;
- Natural phenomena that can be, partially, predicted (floods, earthquakes, storms etc);
- Changes in the EC policies;

- Changes in the national legislative framework and policies;
- Other main challenges could be given by implementing broad and vague strategies, adopt fuzzy project results, or themes that are not relevant for the territorial integration of the programme.

Challenges

The challenges that the capital cities and their metropolitan regions have to face are severe. The basic infrastructure lacks in most of the rural area from the metropolitan regions of Bucharest and Sofia. The capital cities struggle with infrastructure designed for needs from more than 20 years ago. Rural areas suffer of strong depopulation, lack of working places and lack of basic utilities. Meanwhile in Sofia and Bucharest, the economic development from the last years lead to overcrowding of the road transport system, decrease of environmental conditions and the social housing couldn't keep up with the increasing number of young people coming to work in the capital city. These are only a few of the most severe challenges that have to be dealt with. Although INTERRREG IV C offers "soft" solutions, local and regional authorities need solutions more to their hard problems. At least Sofia and Bucharest are in a phase were they can learn from the mistakes made by the more developed countries, but still soft solutions are sometimes useless in cases of hard issues. For example the B3Regions project aims to develop broadband services in remote rural areas, but remote rural areas in Romania barely have electricity, not to say a personal computer. There are other financial instruments for the "hard" issues, but these severe challenges have to be taken into account in order to have a proper background for the first ones.

The authors of "INTERREG III Community Initiative (2000-2006) Ex-Post Evaluation" found out that the main challenges in efficiently implementing the projects were given by the low level of resources given to technical assistance. This is still a challenge for future INTERREG projects.

Strengths

Cooperation, as cross-border, trans-national and inter-regional, brings considerable community added value, in accordance to ex-post INTERREG evaluations. All this will lead to a joint elaboration of programme and/or project strategies, joint decision-making and joint management between the managing authorities and project partners.

A strictly quantifiable, and not taking into account the non-quantifiable effects, INTERREG III programme states the following impact: „ […] projects directly or indirectly creating or safeguarding 115,000 jobs/employment opportunities and nearly 5,800 start-ups and businesses. In addition, the projects supported more than 3,900 businesses to use new strategies or technology" (INTERREG III Community Initiative (2000-2006) Ex-Post Evaluation, pg. 6). These numbers show the consistent impact but also the potential for improvement. It is not hard to see the importance of this programme in achieving the EU goals.

Lessons learned

Cooperation between local and regional authorities and economical and social actors (the universities perceived as trainers for the human capital and enterprises in general) in exchanging their experiences and good practices is primordial and this should continue. The EU acknowledges this fact, but more should be done in order to capitalize the results of INTERREG projects. In this respect, future policies elaborated at EU, national, regional or local level should be substantiated INTERREG results as well as other operational programmes' results. Even though the main focus of the INTERREG programme is to support cooperation between local and regional authorities, we cannot overlook the scarce participation of the universities. In this respect universities should be encouraged to involve more actively in project partnerships.

Greek partners from Athens are more present in INTERREG IV C projects in comparison to partners from Bucharest or Sofia and their metropolitan regions. Also, there is a low level of contracting projects as lead partners (in the case of Romania and Bulgaria, especially Bucuresti-

Ilfov and Yugozapaden Regions) in the case of the SEE Transnational Cooperation Programme, especially on the priority “Development of transnational synergies for sustainable growth area”. The last two capital cities have to surpass their short term as EU members and focus harder on catching up with Athens. Nevertheless, it should be stated that all the three countries and regions are involved in many projects having as priority the “Protection and the Improvement of the Environment”.

In conclusion, besides the excellent suggestions made in “The Intermediate evaluation of the Interregional Cooperation Programme INTERREG IVC” especially for the SEE, we would emphasize the need:

- For European, national, regional and local policies to be substantiated upon results from INTERREG projects as well as other operational programmes (SEE Transnational Cooperation Programme);
- To involve more strongly the universities and the research centres, by promoting the complex and sectoral territorial clusters;
- To better link the future programming period with the Europe 2020 Strategy;
- To prioritize and implement the most tangible measures and effects that networking, know-how transfer and good practices exchange have to offer in these strongly challenged territories.

4. Further analytical work and research

The SEE peripheral space requires special attention, on one hand because there is a historic, cultural and linguistic diversity and on the other hand because it records a strong gap in terms of economic and social issues in comparison to the European core. Moreover, a weak cooperation might be added, even an accidental one, between Bucharest, Sofia and Athens in all fields: economic, cultural, transports, environment.

Based on the analysis conducted in this study, several priorities can be tracked for further research concerning the transformation of the SEE space into an emergent peripheral growth pole. These would include projects for a stronger cooperation between Romania, Bulgaria and Greece, respectively between their three capitals.

One of the main research directions has to be focused on the manner in which decision-makers, practitioners and businessmen might know each other better, by revealing their complementarities and their common interest points. Individualizing the strengths and the development opportunities, in a global analysis context, with the proper diffusion of the results might represent one of the priorities for future research.

At the same time, future research may deepen the study concerning the 3 metropolises’ capacity to establish complex relationships with the adjacent space and to determine the occurrence and the development of growth centres in the intra-metropolitan areas. It is about encouraging the decentralisation processes and the relocation of the activities in the metropolises in the rural and small urban centers in the metropolitan regions. Basically, the levers should be identified; levers through which the high development level of the 3 metropolises (compared to the national territories) can turn up also over the adjacent spaces, by creating development and intensifying cooperation with their own settlements systems.

The identification of joint projects of great interest for the SEE can be one of the main targets for future research. At present, there is no project to determine the focus of the energies of the three countries or capitals which explains the poor mutual knowledge in terms of economic potential, of having joint research programs, of intensifying the efforts to connect to transport networks and to reduce the transport time spent by road or rail etc.

Future research could be targeted towards the idea of a regional joint response to the current economic-financial crisis through the development of common sectoral and global strategies. By

proposing new forms of cooperation on the basis of such strategies, the SEE would be able to find some solutions to specific aspects of the current crisis and could turn into an economic growth area.

Current research have identified the existence of some barriers in the way of cooperation between the three capitals: big distance, expressed in real time, between them, clear differentiation of needs, capitals' individualism, the lack of direct contacts between the three municipalities, dealing with similar social and economic issues (hence the tendency to find individual solutions and not common ones) etc. Further research should focus on diminishing or removing some of those barriers, without weakening the interest in strengthening relations between capitals and their metropolitan areas, between the capitals and the national and regional urban networks.

An important aspect for further research is how to respond to the industrial decline through the creation of industrial clusters networks, focused on leading-edge industries. The main aspect would be to ensure competitiveness at least in three key areas through a regional cooperation between them at the SEE level. Creative industries, from the localization, structure and impact point of view represent a facet of the re-industrialization process in the three municipalities and especially, in the metropolises of Bucharest and Sofia.

Global climate changes pose similar problems for the three capitals. This means that they should have common concerns for an adequate urban and metropolitan restructuring, for a limitation of urban-sprawl and for creating green-blue belts around major metropolitan areas. Therefore, (re)urbanization and environmental issues might be considered interesting for the communities and States in conducting joint research.

In terms of geographical position in relation to the European corridors, all the three metropolises encounter issues in connecting to each other. These corridors have been established in the intention of rapid and direct connections with the European Core. Through further research, proposals and solutions have to individualized and formulated in order to have a North-South trans-Balkan connection.

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