

BEST METROPOLISES

Best development conditions in European metropolises: Paris, Berlin and Warsaw

Targeted Analysis 2013/2/14

Draft Final Report | Version 14/11/2012



This report presents the draft final results of a Targeted Analysis Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

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A. Executive summary

This report presents the main findings of the Best Metropolises project, the primary purpose of which was to identify metropolitan development trends and their consequences in different spheres while also assessing the policy measures and governance models that guide this development. The research undertaken also generated pertinent knowledge about the main driving forces in respect of metropolitan development and their consequences in different spheres; the relationships between the processes of socio-economic and spatial development in metropolitan areas; and the impact of institutional arrangements and governance on their development paths.

The studies conducted focused on several specific topics related to sustainable metropolisation which was considered the goal of policy makers, urban managers and planners. The idea of sustainable development is a fundamental principle shared by the European Union, member states and local authorities. Promoting sustainable urban development is a key element of the European Cohesion Policy and is a continuous process. This is especially important in the case of metropolises and other functionally integrated urban areas. These areas are the engines of the European economy and can be considered as catalysts for creativity and innovation throughout the EU. However, they are also the places where problems such as spatial conflicts, natural environment hazards, unemployment, social segregation and the lack of affordable housing are most likely to be present. The policies pursued in relation to urban areas therefore have a wider significance for the EU as a whole.

Three paths to development

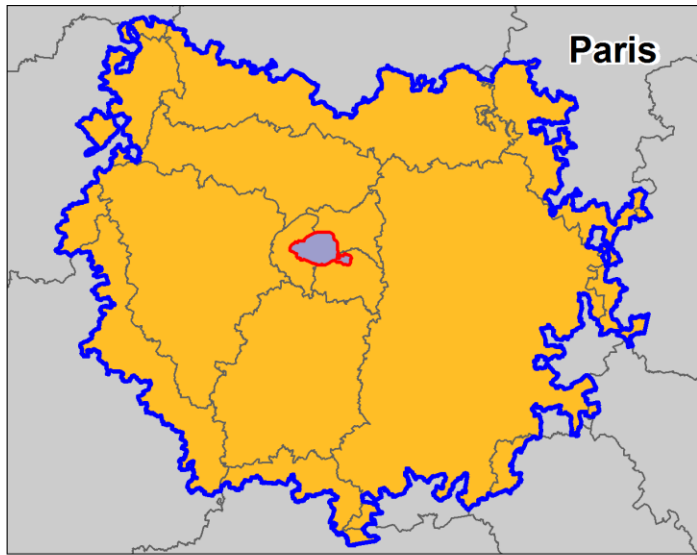
Research results confirm that the historical paths followed by Paris, Berlin and Warsaw have shaped their presence, unveiling both similarities and differences (Map 1). The cities share challenges and problems. The structural difficulties of growth concern, above all, the size and position of the respective city within the national and global settlement system, which itself results from the existence of different scales and stages of development and growth, different administrative and governance structures and differing historic roots in respect of housing or transportation issues.

The main historical challenges faced by Berlin initially concerned its establishment as the capital of a united Germany in the nineteenth century and then the consequences of the national-socialist regime. World War II resulted in the political division of the city with a new challenge appearing in the wake of German reunification in 1990 and the growing position thereafter of Berlin in the European and global hierarchy.

The main challenge for Paris is to maintain its political and economic position as a global city while, at the same time, maintaining its leading global rank in the cultural domain. Paris has enjoyed a long history as a powerful capital city while also being fortunate to avoid physical destruction or other major disasters in respect of its metropolitan area. The enclosure of the city of Paris is a unique feature among the world's largest capital cities, which perhaps explains the relatively recent emergence of a more cooperative attitude towards the suburbs, something which was only really established in the 2000s.

For Warsaw, the key challenges concern completion of its modernisation process and the establishment of its position, within the Central European context, as the "gateway to the East". The historical roots of these challenges lie in the reestablishment of Warsaw as the capital of a reunited Poland in 1918, the destruction wrought by World War II, the city's reconstruction under the communist regime and finally, its post-1989 transformation.

Map 1 Functional Urban Areas of Paris, Berlin and Warsaw



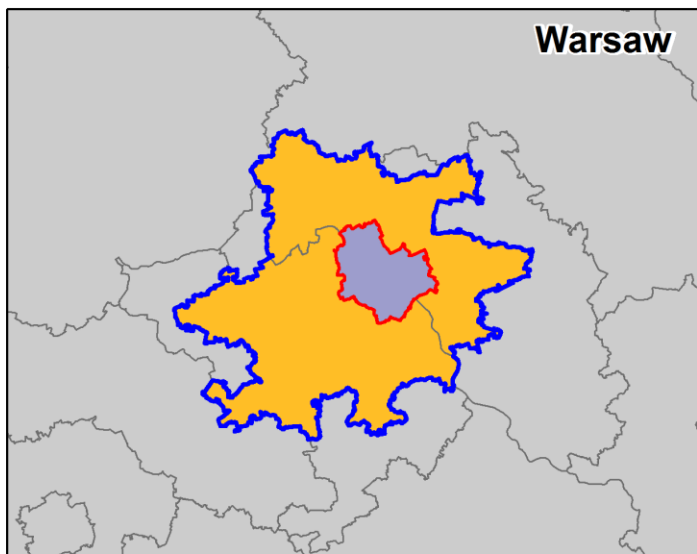
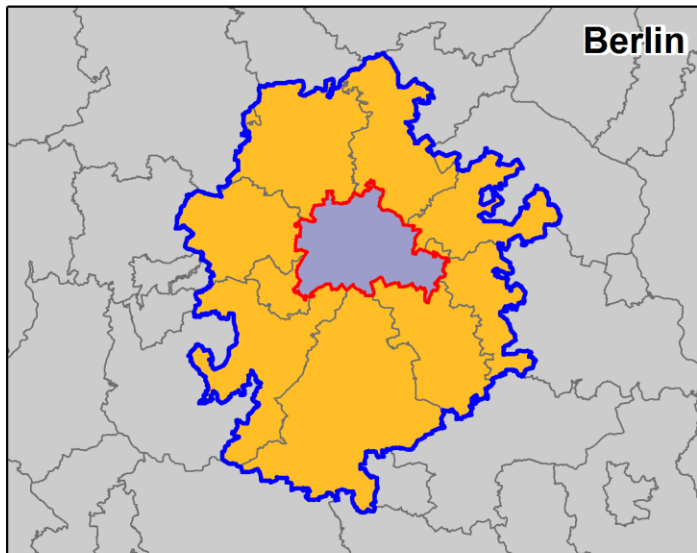
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Paris, Berlin and Warsaw Metropolitan areas. Overview map

- Core city
- FUA
- NUTS 3 region boundary



Basic indicators

Region	Population 2009	No. Housing units 2009	Area (sq. km)
Berlin city	3,442,675	1,894,600	892
FUA Berlin (without city)	1,769,546	875,065	7675
Paris city	2,211,297	1,143,000	105
FUA Paris (without city)	9,559,000	3,748,000	16205
Warsaw city	1,714,446	818,874	517
FUA Warsaw (without city)	1,515,227	547,400	4461

Data sources:
 Paris: Insee, RP2008 exploitation principale
 Berlin: Statistik Berlin-Brandenburg, 2011
 Warsaw: GUS, Local Data Bank, 2011

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In the cases of Warsaw and Berlin, the historical consequences of the totalitarian systems (National-Socialism and Communism for Berlin and Communism for Warsaw) are still visible; while Paris has experience continued democratic and free-market economic development, which was, however, marked by its internal evolution.

What does “*the best metropolis*” stand for?

The current European development strategy EU2020 (2010) sets three goals in respect of the Union’s performance: smart, sustainable and inclusive growth. According to these principles European cities should, as the engines of growth, be the carriers of education and innovation. They should also be characterised by a strong and sustainable industrial base, offering modern and flexible labour markets and a business environment which strengthens their attractiveness as working and residential locations. At the same time metropolisation processes should respect the natural environment, which includes the promotion of energy efficiency and the modernisation of the transport sector (compare: EU2020, p. 32). While the EU2020 refers to cities as those subjects which determine (and create) Europe’s attractiveness, the Territorial Agenda of the EU (2007) stresses the issue of territorial cohesion, locating its priorities in the development of balanced and polycentric urban systems, securing parity of access to infrastructure and knowledge, as well as sustainable development, prudent management and the protection of nature and cultural heritage (p.3). Although the latter document predominantly addresses a wider territorial dimension than metropolitan areas, the role of cities and city regions is sought in the development of innovative, European-wide networks, which determine their competitiveness, understood as individual success in the global scale.

Deriving from the above, the criteria of evaluation in respect of ‘the best metropolis’ address social, economic, infrastructural, political and environmental issues which concern the performance of European cities at various regional scales, as well as the state, the trends and the dynamics of the ongoing processes. The benchmarks identified allow us to estimate the position of each respective metropolis in various territorial dimensions, as well as in comparison with the two other metropolises. Five of the selected ‘yardsticks’ are basic components of the projects’ analyses:

1. Base strengths in terms of economic development;
2. Attractiveness in terms of working and living conditions;
3. Labour force potential & diversified socio-spatial structures;
4. Multi-dimension accessibility;
5. Multi-level governance.

The identified criteria allow for an evaluation of the metropolitan areas with respect to development goals often considered as opposed to each other, e.g. the strengthening of growth engines and polycentric development, while referring to the components of urban development and metropolisation processes in terms of their sustainability, which combines economic, social and environmental objectives in the shorter and longer perspective. Two additional criteria were also selected to complement the ‘requirements’ set in respect of ‘best metropolises’.

1. Environmentally sustainable;
2. Adequate availability of services of general interest due to long-term pragmatic spatial planning which complies with the location of residential areas and other functional areas within the metropolises’ boundaries.

The inclusion of the last two criteria is critical from a long-term development perspective. The quality of the natural environment and the absence of significant conflict over land-use issues are the necessary conditions for sustaining an adequate level of attractiveness and, hence,

the competitiveness of metropolises and metropolitan areas. It may be assumed that the role of environmental resources, such as accessibility to services of general interest, will be subject to steady growth in the foreseeable future. It is therefore strongly recommended that these issues be embraced in the benchmarking analysis in all future studies on this topic.

Base strengths in terms of economic development

The three metropolitan areas discussed here each belong to rather different types of metropolitan regions as elaborated in the ESPON FOCI project. Notwithstanding this, as regards Paris, we nevertheless need to re-emphasise, given its diverse functional-economic profile of the highest international significance, its position as one of Europe's few World Cities. Berlin's position is that of a partly specialised metropolitan area in the European context (here particularly in relation to politics and culture) but with a rather weakly developed set of international connections as regards Advanced Producer Service (APS) firms. Both cities show a rather stable level of overall economic and demographic development, whereas for Warsaw we can note a rather more dynamic one. Regarding its functional profile, Warsaw's global connectivity as regards APS firms (here in particular finance, law and advertising firms) is much higher than that of Berlin's, although both are far behind Paris in this respect. This underlines Warsaw's nodal function for Eastern Europe.

A highly qualified international tertiary economy emerged in the Paris metropolis in the 1980s while developing also in the city's enlarged surroundings and in certain eastern neighbouring cities concentrating more than one quarter of regional employment. The highly-skilled jobs are, however, particularly concentrated in the central area of the city and in the south west suburbs.

Despite the growing role of the healthcare industry, R&D activities as well as cultural and media industries Berlin has not regained the economic importance it had prior to World War II. On the other hand, it should be noted that the recent development of R&D activities reflects the increasing integration of the metropolitan region by means of the joint innovation strategy Berlin-Brandenburg (innoBB). At the city level, the network of public and private R&D 'hubs' localised in different parts of the city, also plays a crucial role.

In the metropolis of Warsaw, international firms and foreign investors have significantly increased the role of the tertiary service sector within a few years; nevertheless, the level of innovation is still quite low. A creative sector (with approximately 6,000 creative enterprises) has also appeared in the Warsaw metropolis but remains highly concentrated in the core city with some expansion to the south (Grochowski 2009, 2010).

Attractiveness in terms of working and living conditions

Today's metropolises must consider several issues simultaneously if they want to become (or respectively remain) attractive places for living, working and doing business etc. One such concern is to ensure the affordability of housing. Other major concerns are linked to territorial integration and connectivity – both, physically and technically as well as economically. More generally, the task at hand is to offer attractive spaces for living and working which thus positively affecting the overall life quality of the city's inhabitants.

Although economic growth is concentrated in large cities the three metropolises reviewed here do not have the same economic strengths, profile and influence on their hinterlands. Each metropolitan area has its specific economic structure combining traditional sectors with new ones. Paris has hosted a powerful and diversified tertiary sector for 40 years and stands as a major worldwide business and travel node. Warsaw has benefited from recent developments and has become a major investment destination with a booming tertiary sector. The economy in Berlin was significantly weakened during the years of German

division and has thus become more focused on the development of a few specialised service industries, including the creative and media industries, thereby renewing traditions. This specialisation also contributes to the instigation of broader cooperation across the wider metropolitan area.

Considering spatial development, two common features might be distinguished in the three metropolitan regions:

- faster growth of suburban areas than in the whole metropolitan region (i.e. lower growth or sometimes a decline of population in the metropolis);
- the predominance of the centrifugal directions of displacement, fitting the classic processes of residential suburbanisation and resulting in the de-concentration of settlement systems.

The Paris metropolis thus clearly struggles with its inability to control suburbanisation while the process is further reinforced by the acute housing crisis and a search for affordable housing opportunities beyond the city limits. Private investments (especially with regard to residential housing) are the main driver of suburbanisation in the case of the Warsaw metropolitan region. Notwithstanding this, two rather different housing strategies of individuals may be observed: high income households moving towards the suburbs (lifestyle motivations, access to vast empty plots, natural amenities, etc.) and middle-class movements oriented towards less expensive multi-family buildings in neighbouring municipalities. Contrary to this, in Berlin the process is less severe and is guided by municipal development plans, which define the localisation of retail centres and/or new real estate areas. As the migration pressure in Berlin was lower and there are still empty or undeveloped areas within the city's borders the suburbanisation process was less dynamic. In the Paris metropolitan region, and a wide range of trade centres accessible by road and highway, are spread all across the region and thus do not contribute to suburban structuration.

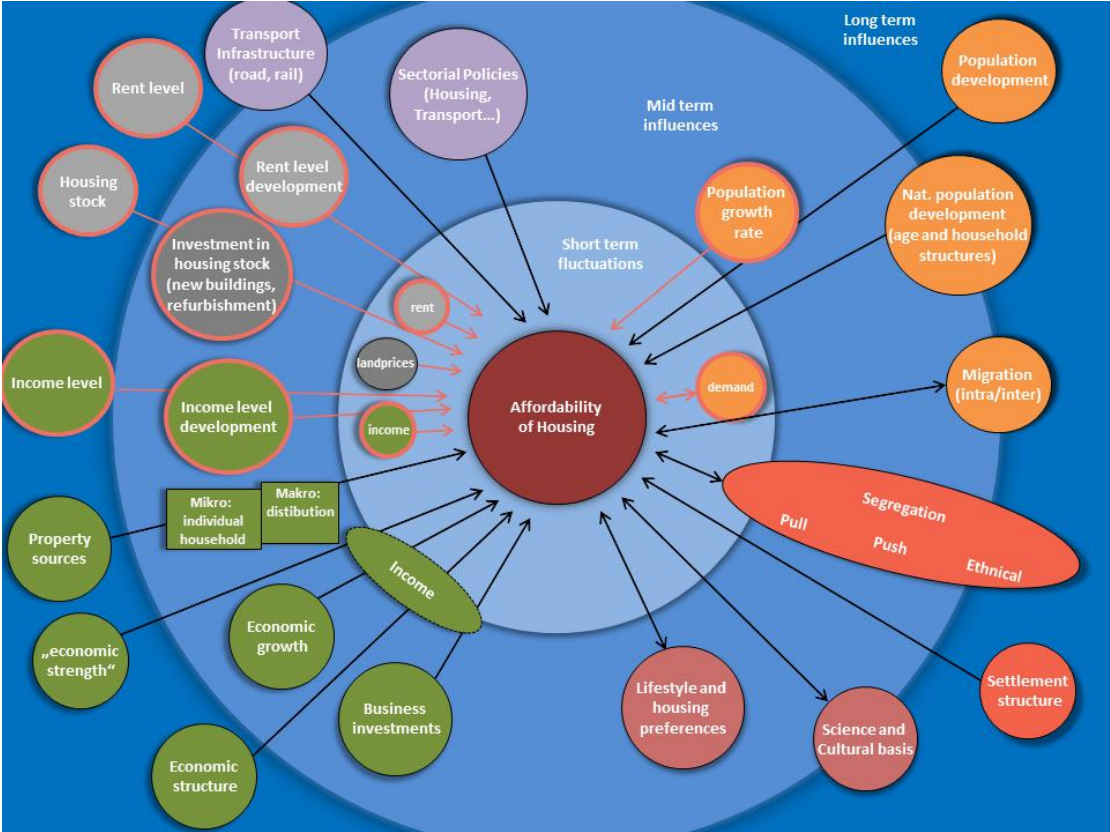
Finally, the affordability of housing should be viewed as a third factor in the gauging of the attractiveness of metropolitan areas. In order to assess the affordability of housing the ratio between economic indicators such as housing costs and income levels per household are usually considered. Nevertheless, the concept of affordability is context sensitive. A wide variety of potential factors may, moreover, influence the affordability of housing. Figure 1 summarises the different fields of influence, different time periods, directions, intensities and values of influence. In turn, many of these fields of influence are subject to one or another sector policy. Among other things this diagram helps to highlight the necessary transport policies required to ensure job accessibility through the provision of a sophisticated public transport system as well as the kind of urban development policies described above that will help facilitate a reduction in spatial disparities and improving living conditions in the metropolitan area.

Despite the existence of common trends between the three metropolitan areas, the comparison of the magnitude and structure of population growth reveals that Paris and Warsaw require a more complex provision of housing affordable for all population groups, while the needs of Berlin are more focused on low income inhabitants.

While modernisation of dwellings is usually favourable for metropolitan attractiveness as well as implying improved housing standards it often also affects the affordability of housing negatively, e.g. where rents increase as a result of the modernisation process and cannot be compensated by corresponding savings in heating or other costs. Thus, there is a trade-off to be made between housing standards and the affordability of housing, which in turn affects the local population's housing choices and contributes to segregation.

In the cases of Paris and Warsaw the need for improved affordability in respect of housing is also apparent in the number of households waiting for a flat under a social housing scheme¹. For instance, in the city of Paris this share accounts for about 10% of households and has been increasing in recent years. This is accompanied by a high level of unsatisfied demand for social housing in the suburbs of Paris. Furthermore, rough calculations for the metropolis of Warsaw indicate a need for roughly 100,000 to 150,000 additional affordable housing units for those who are neither able to qualify for social housing nor to negotiate their own mortgage loans.

Figure 1 Factors influencing the affordability of housing



Source: own elaboration

Labour force potential and diversity of socio-economic structures

According to the results of the ESPON DEMIFER project, the three metropolitan areas each struggle with a quite different set of demographic issues. The metropolitan area of Paris belongs to the young and growing regions described as having “family potentials”, The Berlin metropolitan area represented the “challenge of decline” demographic type while Warsaw was classified as representing the “challenge of labour force” demographic type (ESPON DEMIFER Project).

The research conducted within the ESPON BEST METROPOLISES project however revealed that these trends are internally diversified in each metropolitan area (Map. 2). In the Paris metropolitan area, the core city represents a slightly different model of demographic evolution, with an overrepresentation of older population groups in the south-west and western parts of the city, where the ageing process continues (stable structure between 1999

¹ Between 2006 and 2011, only 29% of demands for municipal dwellings in Warsaw were fulfilled.

and 2008). The northern and eastern parts of the city have however undergone significant rejuvenation and thus are overrepresented by population in working age group.

In the case of the Berlin metropolitan area, two opposite demographic processes are observable in the south-eastern (overrepresentation of older population groups) and western areas (overrepresentation of youngsters and working age population). The core city possesses a demographic potential, as pre-working and working age population is overrepresented and this structure was stable.

The recent changes in the demographic structure of the Warsaw metropolitan area are two-fold in nature. Important discrepancies exist between the demographic types within the core city and the rest of Warsaw FUA. The ageing process primarily concerns the city centre, however, similar changes have begun to occur in the neighbouring districts as the share of the population of post-working age rises there. The remaining part of Warsaw FUA is mostly characterised by a labour force potential defined as an overrepresentation of population of pre-working and/or working age.

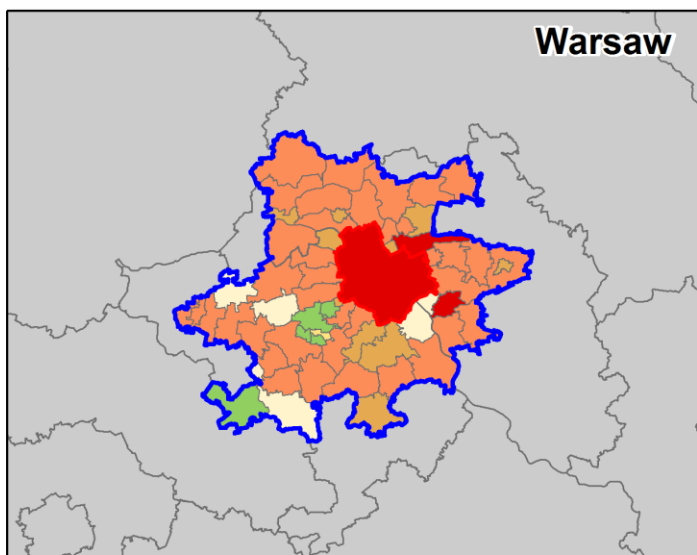
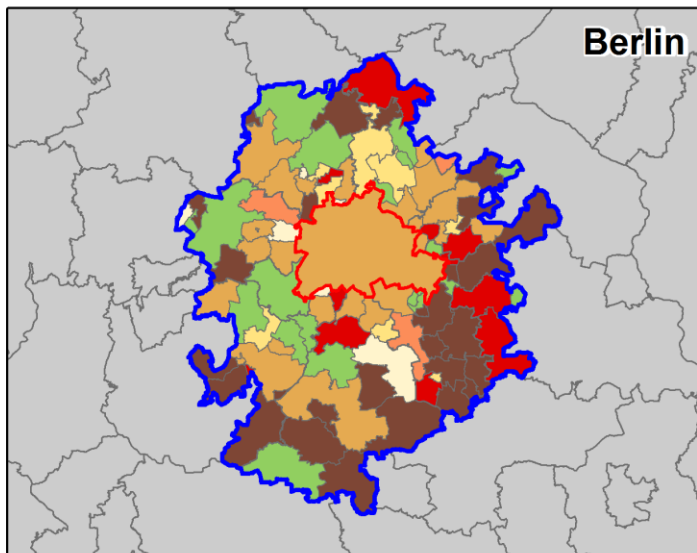
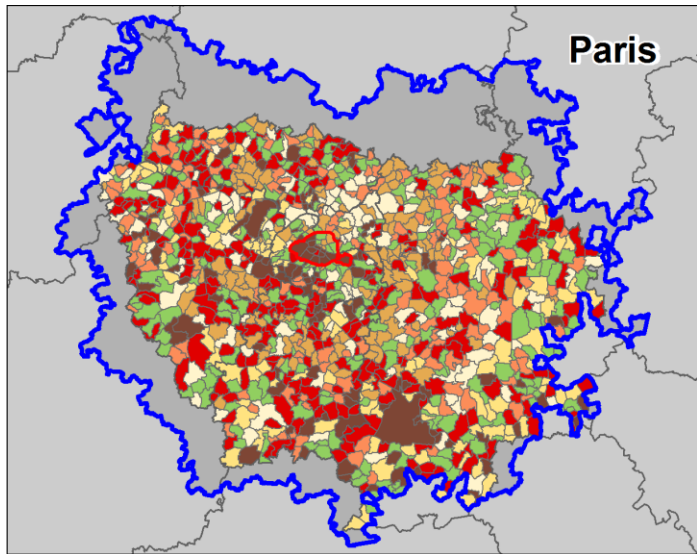
Generally speaking, the socio-spatial structures of the three metropolitan areas have been shaped by several geographic, functional and historical factors. Socio-spatial structures are evolving at different paces as a consequence of migrations, new lifestyles, changing local urban attractiveness and housing affordability. Given recent historical developments these changes have tended to occur at a faster pace in Berlin and Warsaw than in Paris. They comprise among other things: different migration patterns, e.g. the migration of well-off households from the core cities to the suburbs and hinterland; in some metropolitan areas there is clearly a decreasing diversity in terms of the population structure which results in the homogenisation and growing concentration of particular social groups with the segregation of low income and/or foreign inhabitants' households into only a few areas.

Gentrification also contributes to the creation of new socio-spatial structures. Depending on the specific population structure it tends to mitigate or widen disparities. This phenomenon, visible in all three central city areas, is due to a large share of highly educated inhabitants with middle levels of income, working in innovative and creative jobs who contributed to the displacement of the former population.

Recent migration patterns have contributed to the deepening of internal disparities in all three metropolitan areas. In Paris it is generally young people looking for study and/or working opportunities that move to the metropolitan area. These population groups are complemented by relatively poor households from abroad. At the same time, families and pensioners in particular move away from Paris in the search for better and more affordable living conditions. As a consequence, the spatial specialisation of residential mobility - socio-spatial disparities - increase in a twofold manner: firstly, as residential mobility is limited to few groups and secondly, because of the continuing geographical isolation of low income households.

In Berlin, residential mobility is particularly high with two principal directions of migration – a process of concentration in the central districts is accompanied by one of suburbanisation. The share of foreign migrants and population is particularly high in some central areas of the city, which contributes to social differentiation, spatial segregation and the emergence of social disparities. Simultaneously, other central areas develop into particularly attractive neighbourhoods to young and creative inhabitants.

Map 2 Change of demographic structures in the Paris, Berlin and Warsaw metropolitan areas



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Change of demographic structure

Paris: 1999 - 2008
 Berlin: 2005 - 2010
 Warsaw: 2000 - 2010

- Stable: Pre-working age
- Stable: Mixed
- Stable: Working age
- Stable: Post-working age
- Rejuvenation
- Labour force potential
- Ageing

- Core city
- FUA
- NUTS 3 region boundary

Level: LAU 2

Data sources:

Paris: Insee, RP2008 exploitation principale

Berlin: Statistik Berlin-Brandenburg, 2011

Warsaw: GUS, Local Data Bank, 2011

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In Warsaw, positive net migration was characteristic of those municipalities located around Warsaw, decreasing both towards the external borders of the region and to the centre of the city. On the other hand, further analysis indicates that the outflows from Warsaw were related to the spatial proximity of current and previous places of residence. As this process includes only parts of the society, increasing polarisation is visible. Socio-spatial segregation is further stimulated by the continuous migration of people into the city from regions other than Warsaw.

In addition to the overall migration trends, all three cities experience the immigration of foreign residents, though to different extents and from different origins. The latter are strongly influenced by the country's historical ties and development. In many cases foreign immigration – at least when individual nationalities account for a considerable share of migrants – contributes to the existence and development of socio-spatial disparities in the metropolitan cities. Thus, while foreign immigration may contribute to socio-spatial concentration and segregation in parts, this is not a phenomenon which holds for all groups of foreign migrants but, in many cases, reveals a much more differentiated picture which is not an obstacle at all to the integrative growth objective of the EU2020 Strategy.

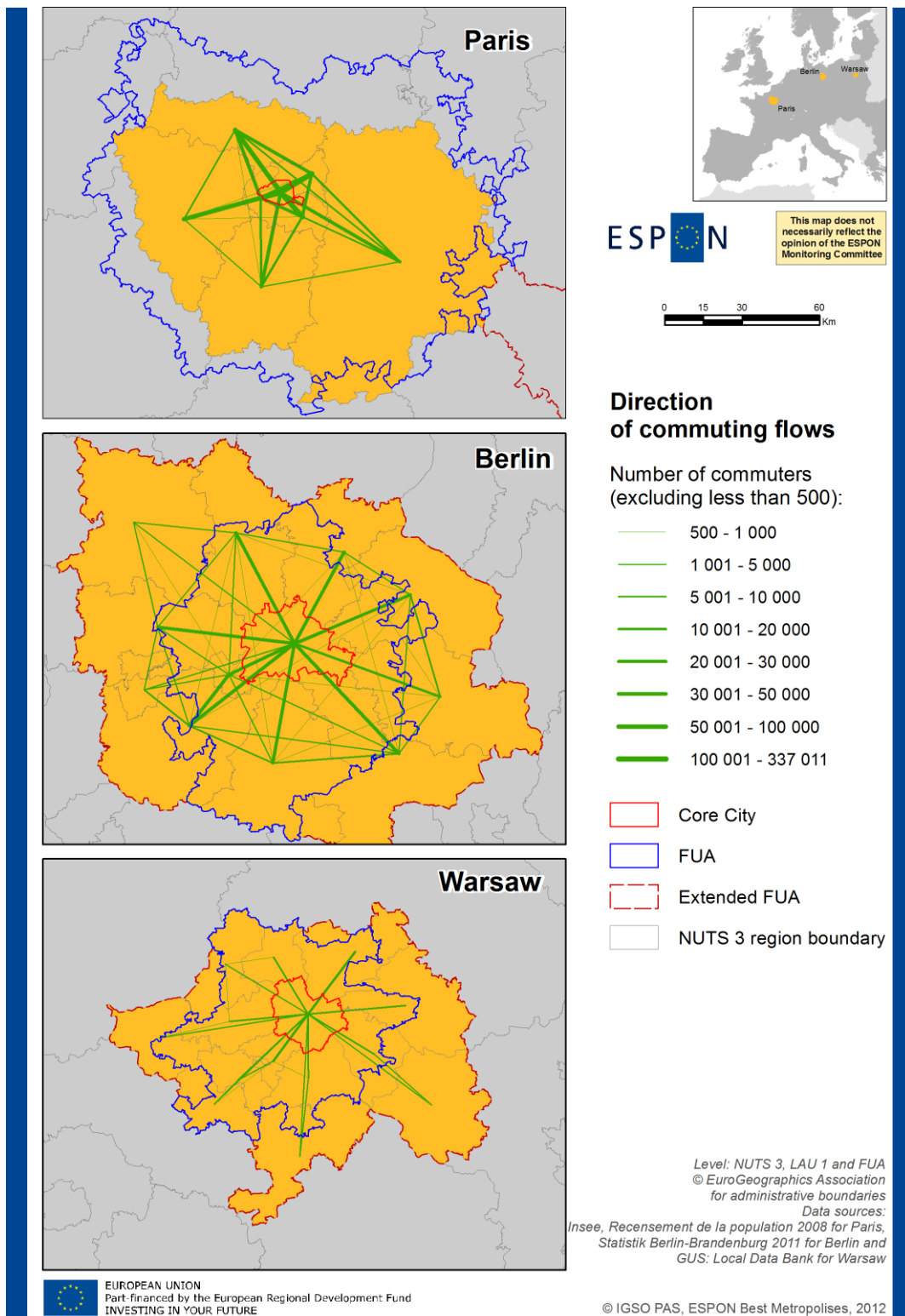
Multi-dimension accessibility

All three metropolitan areas are composed of numerous commuter towns and can be considered as a commuter belt or a labour market area (Map 3). In Paris, both the commuting time and the number of commuters have significantly increased in recent years, which led to particularly high commuting flows and to the above-mentioned congestion. Although in Berlin and Warsaw the majority of jobs are concentrated in the metropolitan city centres commuting patterns differ not only with regard to size but also in terms of direction and variety. Warsaw metropolitan region is the only one of the three metropolises which does not have an interlinked spider's web-like commuting pattern. This is the result of a lack of good and effective and individual and public multimodal transport connections between the various parts of the metropolitan area which simply adds to the already existing high levels of congestion.

A comparison of the three metropolitan areas under investigation points to some of the principal differences with regard to multimodal public transport. Paris has a tight and well developed public transport system in the city which is mostly based on the subway and suburban railway connections. The system is however overcrowded in the city centre and suffers from insufficient networks, lines and poor accessibility in the suburbs, especially in the outer suburbs. Berlin has an efficient public transport network with a modal split of subways, *S-Bahn*, trams, regional trains and buses which cover not only the city centre but the city as a whole and which is well linked into the neighbouring municipalities and suburbs and their public transport systems. The Warsaw public transport network is mainly based on buses and trams and includes only one subway line (overcrowded during peak hours). The bus lines, though they allow for a wide spatial range of public transport even in the more remote parts of the metropolitan area, are not sufficient for an environmentally friendly public transport system.

These structural differences are the reason why Paris and Berlin are successful in increasing the share of public transport. Though public transport is also crucial for Warsaw, its share is decreasing. The lack of an integrated public transport system at the regional or metropolitan level, which takes into account the needs of the city's residents and the in-commuters, is the major obstacle to providing integrated services for different modes of transport in Warsaw.

Map 3 Commuting flows between NUTS 3 (Paris and Berlin) and LAU 1 (Warsaw)



Multi-level governance

The three cities differ in the ways in which they sought to plan their future development over time, but all three have a history of visions in which they publically deliberated and discussed their future spatial development plans. Paris has the longest experience with visionary

strategic planning and is also the most active in this field among the studied cities. The history of strategic planning in the Paris region, from Haussmann's plan to the latest strategic documents, displays a consistent, rationalist, top-down planning system which has had and is likely to continue to have in the future a major impact on the spatial organisation of the wider Paris region. The drawback of the Paris region is the as yet undefined competition between the SDRIF and the Grand Paris project.

Berlin too has an impressive history of strategic planning from the Hobrecht plan to the *BerlinStudie*. Thereafter, however, Berlin effectively withdrew from strategic planning in favour of incrementalist, sectoral planning. It remains to be seen whether this was a disadvantage or whether it represents a more successful strategy for a new type of metropolis in the 21st century.

Warsaw has, since the political and economic transition of 1989, successfully approached strategic planning taking account of the new challenges and opportunities of a market economy. However, it remains to be seen whether the region and city governments will be able to harness the strong economic interests of developers and other economic stakeholders and mitigate urban sprawl.

The three cities have however paid little or no attention to existing European strategic documents on spatial planning, such as the Europe 2020 strategy (Europe 2020) or the Territorial Agenda 2020 (TA2020). This may be explained by the fact that these European documents only became available after the most recent strategic documents of the three cities had already been issued. This may however also indicate that the European documents were simply not sufficiently pertinent to the issues of spatial development at the metropolitan level. For instance, the growth objectives of Paris, Berlin and Warsaw might not be consistent with the cohesion or sustainability goals of the Territorial Agenda 2020, but could easily be defended in relation to its objective to promote global competitiveness.

The three cities also apply very different modes of strategic spatial planning, from rational top-down planning in the Paris region to pragmatic incremental decision-making in Berlin. Which combination along this spectrum is best for a metropolis in the 21st century depends on the dominant political goal of the metropolitan region. If worldwide competitiveness as a global city is the dominant goal, then Paris' approach seems to be the best way to go but only, probably, at the expense of other social and environmental goals. If, however, a more complex vision of the metropolis of the 21st century, encompassing social and environmental goals is pursued, it is probably the case that a more bottom-up, participatory planning style should be preferred, though this may possibly come at the expense of economic growth.

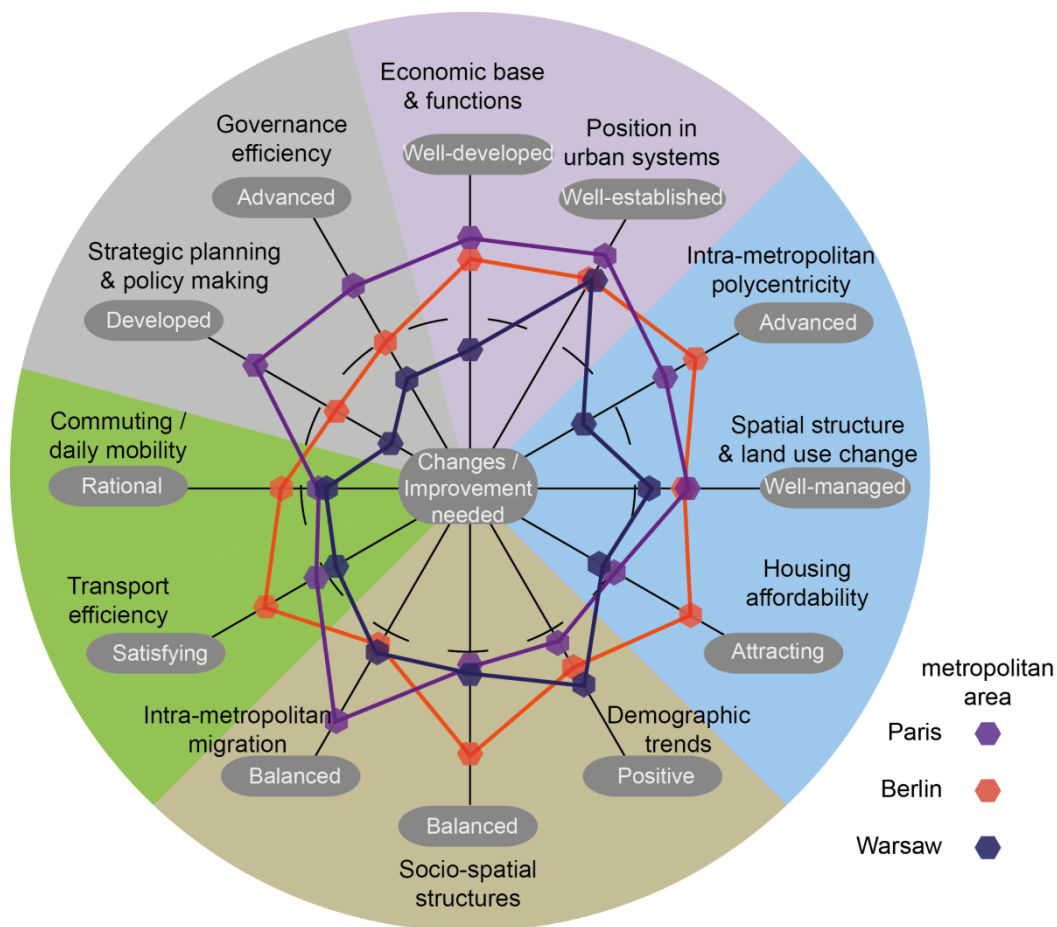
Metropolitan governance has become a crucial issue for the future development of Paris, Berlin and Warsaw. The public authorities have to help foster the proper conditions for the social, economic and spatial development of these areas strengthening their position in the increasingly globalised urban world. There is no single European model of metropolitan governance. Results of analysis prove that the governance responses are similar to some extent because they depend on development trends and encountered problems, which has some features of similarity. However, these responses are also differentiated because of different systemic conditions that have impact on public administration organization and distribution of competences, powers, and responsibilities among different tiers of governance. Thus, looking for the best way to guide development processes in metropolises one should think about customising them to cultural conditions and local contexts. Regional reforms in the 1980s in many countries imposed institutional governance, enforced through territorial devolution in the 1990s "Golden age" of metropolitan government reforms. This age has come to the end, which is proved by Paris, Berlin and Warsaw development problems. In all three metropolises attempts have been made to mobilise endogenous social and political resources to solve, in a cooperative manner, metropolitan problems. The most visible results

relate to the increasing level of cooperation in managing technical infrastructure. The way these alliances are formed may provide a good example of why metropolitan cooperation and some forms of coordination and governance are not only needed but are also possible.

Benchmarking

The quantitative and qualitative analyses performed during the project aimed to gather evidence for the current evolutionary paths of metropolitan structures, as well as identifying their future development potentials and challenges. The positioning of each metropolitan area was then assessed from another perspective in order to indicate how much effort each metropolitan area needed to make to maintain its current position within each thematic field (dimension) or to improve their position (Fig. 2).

Fig. 2. Benchmarking for the metropolitan areas of Paris, Berlin and Warsaw.



Source: own elaboration.

The results of the project prove that there are some similarities in the development paths of the three metropolises, although the central city and the surrounding areas of each are very different. In relation to the issue of the **economic base and functions**, Paris holds the lead position, followed by Berlin and then Warsaw. Warsaw is a growth pole of a metropolis with almost all metropolitan and other economic functions located within the city. Although all three metropolises play important roles in their respective urban systems, the internal pattern of settlement within the borders of these metropolitan areas are quite different. Despite the fact that attempts were made to develop a more **polycentric metropolitan area**, the position of the core city of Paris is still not counterbalanced to any great extent by other poles. The Berlin metropolis represents a rather monocentric structure but the relations between the

core city and the sub-centres are not as hierarchical as in the case of Warsaw. The level of polycentricity in the case of Warsaw is relatively low mainly because settlement units outside Warsaw are too small and weak to play a role as urban centres complementing Warsaw's functions. The **attractiveness of metropolises as places that offer good working and living opportunities** however changes at the intra-metropolitan scale. Although the nature and scale of the housing problem differs in respect of the Paris and Warsaw metropolises, each nevertheless have to cope with the need to provide affordable housing but for different target groups and using different set of instruments. The demographic structures here are subject to change given the natural process of population change as well as **intra-metropolitan migrations**. The crucial issue here then is to ensure balanced migration between the areas considered. The aforementioned mobility induces the modification of existing socio-spatial structures and is seen to generate socio-spatial segregation. In the case of Paris the geographical isolation of low income households continues; in Berlin, an attractive core city encourages newcomers with different origins which may trigger segregation. These processes are less visible in Warsaw; however, other segregation drivers appear, relating in particular to the emergence of gated and guarded housing estates. Thus, all three metropolises struggle with unbalanced socio-spatial structures and different scales of social segregation but each is shaped by different, local circumstances. Between the three metropolises studied, Berlin could be regarded as the best example of a city with an efficient transport infrastructure that ensures **multi-dimension accessibility** both at the scale of the core city and at the metropolitan level. Paris suffers from high congestion rates and lacks additional links between suburban areas. Warsaw fills the lowest position because of its association with a radially configured transport infrastructure, moderate level of public transport accessibility and because it has the highest level of congestion of all European cities. In the case of the **multi-level governance**, assessment in all cases is lower compared to assessment of the same dimensions in respect of the central cities. This fact illustrates the essence of the problem: effective mechanisms that bring together governments from the central cities and surrounding municipalities are still lacking. All three metropolises lack the efficient multilevel governance system necessary to foster and encourage sustainable development.

In conclusion, Paris and Berlin share a number of common features while Warsaw still suffers from the damage wrought during the communist era which is particularly visible in the case of technical infrastructure development. The urban fabric, although evolving, still bears the inheritance of the past. It should be stressed, however, that in the field of policy making (including participatory planning processes) Warsaw has made enormous progress.

The analysis conducted provided arguments that the spatial regional context of metropolises' development plays a very important role in their functioning. Social and economic phenomena and processes are the result of the historical development of regions (bigger than FUAs) and central cities and of the relations between them. The areas surrounding the central cities have emerged as a result of inter-organisational relations at the city – region level. These relationships are however becoming less important since central cities are becoming increasingly heavily engaged in supranational networks and thus the performance of such metropolises depends on appropriate solutions that enable the coherent management of functionally integrated central cities and the areas surrounding them.

How to maintain or improve a city's current position?

One of the BEST METROPOLISES project outcomes is the creation of a conceptual toolbox, which is supposed to provide policy makers with ideas in relation to the best mechanisms and instruments to deal with the problems of metropolitan development. Conceptualising the toolbox provides a heuristic device to better enable us to recognise the policy goals, policy coalitions and mechanisms of decision making, while also identifying the most appropriate governance solutions to specific problems.

Policy recommendations

The future of these metropolises depends to a large extent on their position in the network of cities at the global, national, and regional scales. In order to maintain and / or strengthen their positions within these networks it is necessary to **efficiently use their specific assets** and specific geographic location. **National policies** shall take into account the unique situation of individual metropolises and should be adjusted to and **harmonised with** the development policies elaborated by the authorities responsible for **metropolitan development**. In order to efficiently guide the development processes of metropolises a reliable, well developed **metropolitan database** is urgently required. The main metropolitan actors should be involved in the effort to gather comprehensive data on FUA development. **New institutional and organisational solutions** shall be worked out in order to foster the sustainable development of metropolises. The legal framework is needed to clearly define the roles and responsibilities of the various actors involved on the metropolitan stage as planners and policy makers. In order to maintain or enhance the development potential of the metropolises a **more balanced distribution of economic activities** is required. Such a distribution contributes to territorial cohesion and provides development opportunities to peripheral and sometimes neglected parts of these metropolitan areas, as well as the chance for their inhabitants to gain employment. **Intra-metropolitan polycentricity** in development is required to reduce unnecessary movements of people and goods and to create a more balanced structure for these metropolitan areas. Polycentricity should be viewed as one possible solution to keeping alive the whole region and limiting the scale of urban sprawl. Further development of the transport infrastructure and the **integration of different modes of transport** are crucial for the sustainable development of these metropolises. Close cooperation between local governments in the preparation of plans and investments and in their implementation as well as the use of the partnership approach are required to achieve efficient collaboration. A public debate on housing policy should be initiated with all of the pertinent actors (public authorities, developers, tenants, etc.) participating in this debate. Issues such as the **development of social housing, the provision of land for housing development and financial mechanisms supporting investments in housing** have to be addressed from the perspective of contemporary conditions and current challenges. **Energy-efficiency should become the new standard in all newly constructed** housing developments. New locations for housing functions should be considered from the polycentric model perspective of the spatial development of metropolises while also taking into account the pattern of technical as well as social infrastructure systems ensure that newly developed areas are well served. The development of central cities in these metropolises shall be focused on maintaining high living standards. **Urban renewal projects** ought to be an **integral part of development policies** as a measure that may directly or indirectly influence the distribution of inhabitants, migrations flows and formation of social structures. Specific tools and bodies are required to help construct **comprehensive development strategies** and set out the necessary regulatory system in order to address the emerging metropolitan disparities and territorial imbalances. Depending on the context, it could be supported by a specific arrangement between major authorities or a new metropolitan body, the first step being a common understanding which emerges from an open debate. An official framework may be necessary to ensure the necessary financial arrangements in particular. Metropolitan **tools to coordinate major thematic sectoral policies** (i.e. transport, housing, social or economic development) should also be introduced. In any case, these metropolitan policies must be designed by means of the extensive and recurring **local consultation** of local public and private actors in charge of its application. Additionally, the efficient **metropolitan distribution of financial resources** is a primary condition for balanced metropolitan development. A better financial intra-metropolitan redistribution, as desired in Paris metropolis, a better distribution of EU subsidies in favour of metropolitan areas, as demanded in Warsaw, are other potential solutions. Everywhere, a growing topic of discussion is how best to collaborate with private investors to encourage long term investments and preserve collective interest. No single tool can ensure the

practical implementation of general recommendations, even those emanating from a metropolitan planning document. Solutions may also be diversified: **prescriptive spatial planning** (imposed density of population, criteria for the location of businesses, intensity of use of natural resources) **central city areas' renewal**; alternative housing offer (provided through better transport services); policies focused on the protection of areas used for agriculture (legal constraints).

Recommendations for further research

Suggested further research activities result from completed studies on the three metropolises. Based on the experience gathered in the context of the Best Metropolises project it could be stated that there is definitely a need for further research on the positioning and modes of functioning of contemporary metropolises in the European space. Future investigations should focus on the **financial aspects of metropolises' functioning**. Inter-governmental transfers and the financial conditions of the municipalities and larger administrative bodies and organisations created for the purpose of development management should also be investigated. The efficiency of the instruments that support the common development efforts of both public and private entities provides another topic for future research. Secondly, it would seem to be essential for contemporary metropolis development to adopt proper **modes of power devolution** to facilitate decentralisation processes and to create appropriate institutional and organisational arrangements within the public administration structure. Thirdly, in our analysis we attempted to develop a **typology of living conditions for metropolises**. We faced several problems in the pursuit of this task related to the lack of comparable and essential data (e.g. household incomes in the case of Warsaw). Further investigation should be structured in a way that allows for the preparation of a typology which includes an environmental dimension as well as a reference to the level of social infrastructure development. Additionally, the original datasets delivered by the EU-SILC survey could provide the basis for positioning European metropolises in terms of living conditions, which can also be seen as a potentially fruitful future direction for research. Moreover, there is also a possibility here to combine the research field encompassed by the Best Metropolises and SeGI ESPON projects by comparing European metropolises using the methodology developed within the SeGI project. Finally, **the impact of ecological conversion** has not yet been analysed in terms of urban management at the practical level. There are some crucial questions here for the metropolises' development such as to what extent the development of renewable energy would contribute to the evolution of the contemporary urban structure, or what would the influence be of sustainable transport on our metropolises' development paths?

B. Main Report

Introduction

The primary objective of the project was to identify trends of metropolitan development and their consequences in different spheres as well as to assess the policy measures and governance models that guide this development. The research undertaken here has also provided new knowledge on the main driving forces of metropolitan development and their consequences in different spheres; the relationships between the processes of the socio-economic and spatial development of metropolitan areas; and the impact of institutional arrangements and governance on their development paths.

The main findings of the BEST METROPOLISES project were presented in the Draft Final Report in four chapters which aimed to outline the performance of the three metropolises within various thematic fields. The first chapter covered issues related to the history and development trends of Paris, Berlin, and Warsaw and their positioning in the European urban system. Special attention was paid to the different set of drivers and milestones in these cities' historical development that shaped their current situation. The second chapter is dedicated to the actual state and evolution of the metropolises' structure, including the question of integrative growth and urban development as well as the level of internal polycentricity and territorial connectivity. This chapter ends with a typology of living conditions and the attractiveness of metropolitan areas which aims to highlight the most and least attractive districts and communes with regard to the given criteria. The third chapter compares the long-term urban development visions and strategies for the three metropolitan areas. In the fourth chapter the models of governance are discussed with particular attention paid to the specific administrative contexts in each country and to the manner in which the metropolitan debate emerged in each.

The logic behind the sequence of the research undertaken resulted from the established methodology of the benchmarking exercise within the BEST METROPOLISES project. The benchmarking covered five criteria divided into 12 dimensions (chapter 5) and had a doubled objective: (1) to assess the performance of the three metropolises and (2) to assess the efficiency of the policies undertaken in achieving sustainable goals. In order to evaluate the extent to which the criteria were met by the three metropolises a qualitative system of benchmarking was further elaborated. This was necessary because the historical and geographic context of development of the three metropolises, as well as their size and the roles they play in their national and supra-national settlement systems, make quantitative evaluation very difficult or even impossible. The benchmarking exercise enabled the positioning of the three metropolises with regard to each other and the highlighting of pointing the specific fields that required improvement through the implementation of adequate policy options. The proposition of the latter was subsequently presented in chapter 6, and complemented with the multi-level exchange of good examples and lessons already learned by the three metropolises. This chapter was also enriched by a more general overview of policy recommendations and by a discussion of the main drivers of metropolitan development.

1. Contextualising Paris, Berlin and Warsaw as Metropolitan Areas in a historical and European perspective

1.1. Historical development paths of Paris, Berlin and Warsaw

The three European capitals discussed in the context of this report, Paris, Berlin and Warsaw, have each followed rather different historical paths, with these experiences acting

as a powerful force in shaping their contemporary development. Over the centuries, the cities have seen significant changes to their political, economic and cultural positions, the scope of their territories and their national and international importance. This process of historic development has produced conflict and competition, as well as neighbourly cooperation, which was 'crowned' by the accomplishment of European integration. The history of ties and linkages between the cities is diversified and complex. The role of the three cities as national capitals had also changed over the centuries with their historical development paths each presenting a unique story.

Story 1: Paris

Paris, the capital of centralised France, a true global city in the cultural and ethnic sense has a proud history rich in primacy and dominance. During the industrial revolution at the beginning of the 19th century apart from being the main city in France, Paris had become one of the most important industrial centres in Europe and an important player in the European urban system. Its position became even stronger with the development of the railway network in France. At the same time with the growing in-migration flow of poor people, the city experienced a significant growth in internal disparities and socio-spatial segregation which had an impact on its further development and structure.

The modernisation process introduced by Napoleon's designated prefect of the department de la Seine, Georges-Eugene Haussmann, relating in particular to road network construction, the territorial annexation of the surrounding municipalities, the development of green areas and the creation of a modern technical infrastructure contributed to further growth but had failed to stop the escalation of socio-spatial disparities. The outbreak of the war against Prussia (1870) and the activity of the Paris Commune further hampered Paris' intellectual, artistic and economic profile across Europe.

At the beginning of the 20th century the French capital had begun to grow again with renewed impetus, which brought the enlargement of the central area, as well as the suburbs and a general improvement in living conditions throughout the city. Though the two World Wars did have negative consequences for Paris' development, the scale of physical destruction was much smaller than in Warsaw or Berlin. The post-war modernisation of the region of Paris lasted until 1974, when it was significantly hindered by the first energy crisis. In different circumstances, with the globalisation of the economy Paris had regained its position as a world city.

The main challenge facing the French capital today is that of maintaining its political and economic position as a global city. Paris' historical tradition is one of power and grandeur associated with its capital city status; it is also one of comparative fortune as it has managed to avoid the destruction – from both man-made and natural sources – of the city and its surrounding areas. This historical legacy presents both opportunities (for strong leadership) and problems (the slow emergence of metropolitan polycentrism and a balanced structure). In addition, the French tradition of planning and technical infrastructure organisation has allowed for continuous development in a turbulent political landscape. A common problem, only partly connected with the increase in ethnic differentiation, concerns the new social inequities imposed by economic globalisation.

Story 2: Berlin

The first important target for Berlin, as the capital of the unified German states (1871), was its desire to confirm its role as a 'world city' (*Weltstadt*). Becoming one of the most important metropolises on the globe was possible given Berlin's earlier importance as a royal residence and as the economic node of Prussia, one of the leading powers in 19th century Europe. By the end of that century Berlin had evolved into a world city, and was often compared with

London, Paris or even New York. The German capital was not only the *foci* of political decision-making, but the location of modern industry and their commercial headquarters. The Berlin-Dresden-Prague-Vienna axis, with the course of the Rhine's as its main arterial route, the cultural heart of Central Europe.

The establishment of the two German states after the World War II and the division of Berlin however led to a double form of isolation. The physical separation of West Berlin from the Western *Länder*, despite the political role of the city as an island of freedom in the East, reduced the status of the city to that of peripheral and rather provincial actor with respect to culture and social life, while its economy was, by necessity, highly subsidised. The construction of the Berlin Wall had cemented the physical and mental separation of the city pushing it in the direction of a two-tier, contradictory development, namely, as the East German capital and as a West German island.

The division of the city had a significant impact on economic and spatial development bringing stagnation and disrupting urban planning for the city and its surrounding regions. As a result, post-Wall Berlin was left with dual city centres and a sub-optimal and illogical transportation system, as well as a heritage of cultural institutions that were now unrealistic in financial terms for the united city to bear. During this period the city became the focus for all of the transformation processes taking place across Europe and Germany, a field of restoration, construction and reconstruction – the largest construction site in Europe. The decision to relocate the capital of the reunited Germany to Berlin has, moreover, allowed the city to re-establish itself as an important player in the German urban system. Moreover, decisions of political governance were taken which have significantly influenced the city's current development, like the revitalisation of the main lines of *S-Bahn-System* connecting Berlin with the neighbouring areas of Brandenburg or the development of new inner-city commercial and business centres.

As the Federal government reduced subsidies for West Berlin's economy and Berlin's former economic base broke down after German reunification, the city experienced a massive fiscal crisis at the end of the last century. Berlin's government reacted to the fiscal crisis by introducing many financial and investment restrictions. In consequence, Berlin has thus far failed, in an economic sense, to develop many of the highly specialised functions associated with global city players.

In 1995, the Conference of Ministers introduced metropolitan regions as a spatial unit of functional character, which, contrary to an 'agglomeration' constitutes a large territory around the central core including sub-regional centres and rural areas functionally connected with each other. In the case of Berlin the metropolitan region encompasses the capital city, as well as the *land* of Brandenburg. Despite the failure to integrate Berlin and Brandenburg as one politico-administrative unit cooperation between the two proceeds quite effectively, with a joint spatial planning unit where strategic planning issues for the broad metropolitan region are tackled.

Story 3: Warsaw

The history of Warsaw is as heroic as it is tragic, marked as it is by constant change and distinct discontinuity. War and the various partitions of Poland have historically stood in the way of stable development, which only really experienced something of a change with the regaining of national independence after World War II. The allocation of the central administrative and political function to the city undoubtedly accelerated urban development. The high levels of post-1918 migration occurred against the backdrop of poor infrastructure and housing. As a result, the population of the outer zone increased by 80% in the period of 1921 and 1931, while the city itself increased only by 25.8%. The development of Warsaw in the interwar period was dominated by uncontrolled population growth, rapid industrialisation,

and booming development of the central functions. This period of chaotic development however brought about an increase in social segregation and in the development of space with both housing and industrial functions. The development of innovative and modern urban and regional planning was launched in 1930 under the concept of "Functional Warsaw". The more comprehensive introduction of this idea was however limited by the prevailing economic situation in the 1930s and eventually interrupted by World War II. The war saw the effective destruction of the city. The post-war period and the new political situation saw conflicting visions emerge in respect of the task of rebuilding of the city, influenced by nationalisation (communalisation of land and housing) and other ideological priorities. The process of making Warsaw a socialist city shaped the urban landscape in such a way that space was dominated primarily by the social realist style and then gradually by modernist, low quality mass housing. Politically isolated from the Western world, Warsaw nevertheless succeeded in sustaining a high level of cultural functions with its institutions and venues, something that was to become an important factor in the city's subsequent development.

Current key challenges faced by the Warsaw metropolis concern the completion of its modernisation process and the attainment of a higher position within the major Central European cities as a "gateway to the East". The key development problems for the Warsaw metropolis are, to a large extent, the same as those for all Polish cities: a relatively low level of competitiveness at the European Union scale, mostly due to the lack of proper transportation systems, missing transportation and functional links in the country and the international scale; a significant housing shortage in general and, specifically, the shortage of affordable housing together with the increasing modernisation gap of the housing stock; an increase in social disparities and the widening of the poverty stratum. Significant problems also exist in relation to the modernisation issue in respect of the city's technical and communal infrastructure, and, in relation to governance practices and the lack of involvement of the city's inhabitants in the urban and local matters.

The historical paths of Paris, Berlin and Warsaw have undoubtedly shaped their current situations, moreover, these historical development paths while being unique to each nevertheless unveil a string of similarities and differences in terms of the experience of change. In the cases of Warsaw and Berlin, the historical consequences of the totalitarian systems imposed upon them are still visible; while Paris has experienced continued democratic and free-market economic development, which was, however, marked by its internal evolution. At the same time the cities share challenges and problems. The structural difficulties of growth concern above all the size and position of the respective city within the national and global settlement system, resulting from different scales and stages of development and growth, different administrative and governance structures and different developments in respect of housing or transportation issues. Moreover, current European Union policy undoubtedly has a homogenising effect, something which is perhaps also present in modernist planning and the history of architectural concepts throughout the twentieth century.

Notwithstanding the prevailing differences, as noted previously, some common problems can also be observed, which are, nevertheless, of differing importance in the examined cities. Such problems predominantly concern the issue of future demographic development, suburbanisation and urban sprawl and the rise of intra-metropolitan, social and economic disparities, as well as the affordability of housing. Furthermore, sustainable metropolitan governance structures and strategic urban planning also continue to pose important challenges.

1.2. Paris, Berlin and Warsaw in a contemporary European perspective

Spatial dynamics: economic performance

The second *State of European Cities Report* (cf. RWI *et al.*, 2010) argues that, in terms of national averages of GDP per head in PPS, a clear gap exists between most of the capital cities and some other larger cities on the one hand and smaller cities on the other (cf. Fig. F1 in annex). In eight European capitals, GDP per head is more than double the national average with Paris and Warsaw included in this grouping (cf. Fig. F3). Furthermore, Paris and Warsaw outperform the other cities in this group, even though the latter to a lesser extent in regards to the distance to the second best performing Polish city. Germany is however the exception here since Berlin shows a comparatively low performance level (under the national average) in this respect.

Spatial dynamics: urban form

The image of urban growth or decline in Europe is highly diverse and it is very difficult to classify common trends for all cities. Looking at total population change between 1991 and 2004 in the three capital cities in question here compared to other European capitals as well as to the other cities in their countries, we quickly see that Paris and Berlin (the latter more dramatically) have lost population during this period (see Fig. F4). This loss at the municipal level is however compensated (at least to some extent), by a slight growth in the neighbouring areas (see Map F1 in Annex). Warsaw municipality has seen a slight growth over the period 1991-2004, which was accompanied by a relatively strong process of suburbanisation in the neighbouring areas between 2000-2006 (ESPON 2010, 17). Among the Eastern European capital cities, Warsaw is the only one with an increase during the period 1991-2004, whereas Paris and particularly Berlin are good examples of those Western European capital cities that show a negative trend.

According to the ESPON FOCI study we can assume a somewhat stable population development (with a slight increase) for the larger Warsaw metropolitan area and a little stronger increase for the larger Paris metropolitan area between 2005 and 2030 (here in each case at NUTS 2-level). Paris is following the expected trend also seen in other major Western and Northern metropolitan areas, whereas the larger metropolitan area of Berlin could be grouped rather more logically with those cities that will experience a rather significant population decline. The larger Warsaw metropolitan area seems able to maintain its position as one of the very few metropolitan areas of the New Member States that will experience a rather stable population development (cf. Map F2 in Annex). These trends naturally have an impact on the changes in land consumption in general and on the nature of the urban form, which are, however, particularly influenced by planning and building traditions (e.g. high versus low densification), the specific city's topography etc.

Classification of metropolitan areas based on their functions

The composition of a number of aggregated indices on metropolitan functions (i.e. politics, economy, science, transport and culture; cf. BBSR, 2011) display interesting results for the issue at hand here. Although at a first glimpse the functional profiles of the studied European metropolitan areas do show the expectable variations, the following basic tendency can be observed: most of the important metropolitan areas with a high aggregate index value have a great (but balanced) variety of metropolitan functions. One exception here is Berlin where the governmental function dominates, although to a lesser extent, the city has developed a significant standing in respect of its cultural profile (cf. Map F4 in Annex). What also became clear is that, depending on the national settlement structure, the impact and character of a

'policy for metropolitan regions' in Europe is very different. In such an aggregate perspective, one can say that the metropolitan areas of London and Paris maintain a leading position in terms of such metropolitan functions. They also have much higher values than the other metropolitan areas in terms of economic performance. Their relative significance is however revealed by a regionalisation concept, i.e. an aggregation of a number of neighbouring cities. Warsaw is ranked 24th among the 125 European metropolitan areas that have been identified and assessed in this study (cf. BBSR 2011). The spatial distribution of the functional areas 'economy', 'science' and 'transport' (as well as in an aggregated version) shows quite impressively that (except for the functional area 'science') Berlin and Warsaw show very similar overall index values. In addition, the outstanding performance of Paris as one of the leading European metropolitan areas is evident, particularly as regards the extent and diversity of its functional profile.

Findings from the work of the Globalization and World Cities (GaWC) Research Network

According to the Globalization and World Cities (GaWC) Research Network (cf. e.g. Taylor, 2004, Taylor *et al.*, 2010), intra-firm office networks' of Advanced Producer Service (APS) firms are considered in order to anticipate 'service flows' between cities. Since a direct measurement of the myriad of such flows is hardly possible (cf. the discussion by Derudder 2008) this method can be used as a surrogate regarding the analysis of the intensity of knowledge-based flows between office locations and, more generally, between cities in the world economy. The resulting interlocking network model of inter-city relations thus helps to place APS firms as key actors in world-city network formation.

We can easily see that, compared to older studies (cf. Deruder *et al.*, 2010 for a comparison of 2000 and 2008 data) Paris has one of the highest so-called GNC (Global Network Connectivity) ratings in the world (ranked no. 4). It is also clear that a huge gap exists between Paris and Warsaw, which ranks 37 in the same 2010 database, particularly as it was ranked 20 in the one from 2008 (cf. Taylor, 2010 and Taylor *et al.*, 2011). This gap in terms of GNC with Paris is even broader to Berlin (ranked 56 in 2010). This is not however that surprising since in many of such studies Paris is viewed as a real World or Global City while the other two are allotted only European significance. In addition, one should emphasise that these rankings, produced by the GaWC, reflect the strategic mental maps of key decision makers in these major APS firms (Taylor *et al.*, 2010). Here historical, geopolitical and geoeconomic development paths play a role as highlighted above (see also Hoyler, 2010, Pain and Ardinat, 2010 and Bańczyk, 2010 as well as the discussion by Korcelli-Olejniczak, 2012 regarding Berlin and Warsaw).

Taylor (2010) offers a deeper level of insight into their database regarding different sub-sectors within the set of analysed APS firms in the database from 2008:

- regarding 'global financial network connectivity' Paris is ranked 6, Warsaw 28 and Berlin is not to be found among the listed Top 50;
- regarding 'global law network connectivity' Paris is ranked 3 and Warsaw 18, whereas Berlin is not ranked among the listed Top 25;
- regarding 'global advertising network connectivity' Paris is ranked 3, Warsaw 9, whereas Berlin is not ranked among the listed Top 25;
- regarding 'global accountancy network connectivity' Paris is ranked 7 and Berlin 25, whereas Warsaw is not ranked among the listed Top 25;
- regarding 'global management consulting network connectivity' Paris is ranked 3 while neither Warsaw nor Berlin is ranked among the listed Top 25.

Such results do illustrate Paris' impressive position as a leading 'world city'. The further national analysis of the data also demonstrates the well-known monocentric structure of the

French national urban system, due to the significant gap to the second and third national cities (Lyon and Marseille) as well as to all other French cities (cf. Pain, Ardinat, 2010).

Among the German cities, Berlin ranks only second after Frankfurt (ranked 32 on the global list, so just before Warsaw in 2008). One needs also to note here that this global study also reflects the polycentric national urban system in Germany, since the gap to Frankfurt is rather small and a number of other cities show very similar GNCs to Berlin, or even higher, looking at the data from 2010. In addition, the aforementioned historical, geo-economic and geopolitical reasons have undoubtedly helped to shape this picture. On the other hand, Berlin in terms of critical mass (population, jobs, market size etc.) is by far the largest German 'city'. However, in the case of Frankfurt and Düsseldorf in particular, one should also note that they are both embedded within larger polycentric urban configurations (namely Rhine-Ruhr and Rhine-Main), whose critical mass in this respect is much higher than that of Berlin (cf. also Lüthi *et al.*, 2011).

According to the empirical data provided regarding the Polish national urban system a more or less similar degree of monocentricity can be recognised as that of France, due to the significant gap to the next national cities. In this respect, the relative monocentricity of the national urban system is, however, even more obvious in other (although smaller) Central and Eastern European Countries. What is perhaps most noteworthy here is that considering the GNC Warsaw is number one among the Central and Eastern European cities in the 2008 and 2010 databases, followed closely by Prague and Budapest. This can be traced back, at least to some extent, to the unprecedented economic growth powered for the most part by foreign investors, both in the city-region of Warsaw, but also in Poland as such (Bańczyk, 2010). In addition, Warsaw shows, among the Eastern and Central European cities, the strongest relative concentration of connections to the traditional world cities i.e. New York and London as well as to the 'Chinese cities triad' constituted by Beijing, Hong Kong and Shanghai (Bańczyk, 2010).

1.3. Concluding remarks

The investigations outlined above illustrate the level of context sensitivity when comparing the three European metropolitan areas of Paris, Berlin and Warsaw particularly as regards their respective spatial dynamics and characteristics. It therefore needs to be emphasised again here that the picture sketched out above is the result of geopolitical and geo-economic changes, specific historical urban and regional development paths and different starting points, in particular in regards to the national political environment and the spatial position within a larger macro-regional context. It also becomes clear that with regards to the specific territorial context, the three metropolitan areas discussed here do belong to different types of European metropolitan macro-regions as elaborated in the ESPON FOCI project. Nevertheless, as regards Paris we need to emphasise its position as one of Europe's few World Cities (together with London in particular), since it shows a diverse functional-economic profile of the highest international significance. Berlin's position is that of a partly specialised metropolitan area in the European context (here in particular politics and culture) with rather weakly developed international connections in respect of APS firms. Both cities show a rather stable overall economic and demographic development, whereas for Warsaw we can clearly note a less comparable dynamic. Regarding the functional profile, Warsaw's global connectivity is in this respect (here in particular finance, law and advertising firms) higher than that of Berlin's, although both lag far behind Paris. This underlines Warsaw's nodal function for Eastern Europe. Korcelli-Olejniczak (2012), however, concludes that although both cities had similar initial positions they have developed markedly different functional profiles in the last two decades. In this light, they have strengthened their position in the European urban system in recent years, while their regional specialisation shows some signs of stability. The latter is also evident in regards to Paris, which has maintained its role

as a leading European world city and its global significance despite the emergence of other fast globalising cities, most evidently in the BRIC-countries (Brazil, Russia, India and China).

2. Current state and evolution of the metropolises' structures

2.1. Introduction

Given the historical and current development differences, housing and living conditions, socio-spatial structures, transport means and migration flows in the metropolises of Paris, Berlin and Warsaw vary heavily. Thus, today's metropolises have several issues to consider simultaneously in order to become (or respectively remain) attractive places for living, working, doing business, etc. The main concerns embrace the need to ensure the affordability of housing, territorial integration and connectivity – both, physically and technically as well as economically. More generally, the task at hand is to offer attractive spaces for living and working as this affects overall life quality. Among other things, this also includes favourable socio-spatial structures, which in turn are affected by migration flows as these can explain processes of social differentiation and segregation. Here, the circle closes since migration flows, are e.g. influenced by urban infrastructure and housing alternatives.

According to the results of previous ESPON projects, the metropolitan areas of Paris, Berlin and Warsaw vary with respect to different dimensions: demographic, social, economic, etc. These overlapping dimensions of metropolitan structures are crucial in comprehending the process of metropolisation influenced by metropolitan historical conditions and their functional specialisation (POLYCE, 2012).

In terms of demographic structures, the three metropolitan areas belong to different types of regions, which can be differentiated according to age structure, natural and overall population development and migration flows (DEMIFER, 2010). According to these analyses, the metropolitan region of Paris belonged to the young and growing regions described as "family potentials" Berlin represents the "challenge of decline" type while Warsaw was classified as belonging to the "challenge of labour force" type. It was, moreover, noted that the stimulation of migration flows could be achieved by improving living conditions in poor regions.

The ATTREG project noted that the evolution of socio-spatial structures within metropolitan regions is reinforced by residential mobility and migrations which in turn are influenced by the six components of 'territorial capital': environmental, antropic, economic, social and cultural, human and institutional capital. From this perspective, Warsaw is one of the Central European cities which exhibit positive attraction rates consolidating its position and widening the population and skills breach in its national system. For Paris and Berlin, the ATTREG results indicate that they are probably starting to suffer from congestion diseconomies.

The uneven distribution of different demographic, social and ethnic groups contributes to segregation and socio-economic polarisation in metropolitan areas. The FOCl project has shown that the intensity and scope of these processes may be estimated on the basis of indicators related to the economic structure and the labour market (level of knowledge-based employment), socio-demographic characteristics of society (household composition, level and structure of international and intra-urban migrations, notably suburbanisation and gentrification) and political issues (including the social housing system, economic development policies and place based policies). The growth of disparities is particularly strong between large urban centres and their regional hinterlands in the context of the correspondence of demographic processes, structural changes and labour market fluctuations. Using this typology, the Paris, Berlin and Warsaw metropolitan regions were

classified in three distinctive types: Paris as a polycentric metropolis in a polycentric region, Berlin as a monocentric service centre surrounded by a regional hinterland with a weak labour market, and Warsaw as a national growth pole surrounded by traditional rural areas, although it should be noted that the in-depth analysis of the Best Metropolis project does not confirm all of these categorisations.

Social differentiation may also be investigated with respect to specific themes such as disparities in housing supply and housing quality, and the inequalities of housing access. The ESPON 1.4.2. project provided a set of complex measures to analyse these issues e.g. housing affordability indicator I (house price to income ratio), housing affordability indicator II (rent to income ratio) and tenure structure (share of social housing, dynamics of housing investments).

The attractiveness of metropolitan areas is also studied from the perspective of the efficiency of the transport network and accessibility. The amelioration of the transport network and its efficiency is important especially in the short-term as this is the only way to avoid gridlock and the relocation of enterprises (ESPON 1.2.1.). What is more, the level of accessibility within a region influences economic development, cohesion and polycentricity (ESPON 2.1.1. and TRACC).

Finally, according to the approach undertaken by METROBORDER project, the question of functional integration in metropolitan regions is crucial in order to ensure sustainable development and cohesive growth.

All of these concerns are not only relevant for the metropolitan regions considered in this project but also for other European metropolitan regions too. They are closely linked to both, the EU2020 Strategy and the Territorial Agenda 2020 (TA2020). For instance with regard to housing, the EU2020 Strategy lists the provision of “decent housing” and the Flagship initiative “European platform against poverty” as measures to reduce the proportion of the population at the risk of poverty. Such measures are intended to improve access to essential services – housing included – and also aim to tackle socio-spatial disparities. Furthermore, also with regard to territorial development this issue is relevant in the context of the second priority of the TA2020 “Encouraging integrated development in cities, rural and specific regions”. The TA2020 states that it is crucial to “support all the efforts, which help to make cities motors of smart, sustainable and inclusive development and attractive places to live, work, visit and invest in” (TA2020, 2011: 7). The focus on attractive places to live and work in particular is related not only to housing but also to the other abovementioned concerns.

Apart from the relevance of the EU2020’s integrative growth objective and the integrated urban development priority of the TA2020, the analysis of socio-spatial structures is also closely linked to the first priority of the TA2020, which aims at polycentric development. The TA2020 stresses “that the polycentric and balanced territorial development of the EU is the key element in achieving territorial cohesion” (TA2020, 2011: 7). It furthermore emphasises the development of polycentric urban patterns beyond the core ‘Pentagon area’ in order to foster territorial competitiveness. Thus, this priority appears to be of particular relevance e.g. for Berlin and Warsaw as they are located outside the abovementioned core area. Polycentric development shall be supported at all relevant territorial levels, from the macro-regional to regional. Due to the close link between socio-spatial structures and migration, the first TA2020 priority is also relevant in the context of migration flows. Furthermore, the level, direction and social structures of intra-urban migration flows also matter a great deal with regard to the EU2020’s integrative growth objective.

Within the sustainable growth objective of the EU2020 Strategy transport is one of the main policy areas of the flagship initiative aiming at a resource efficient Europe. Both directly and indirectly, the metropolitan transport infrastructure contributes in many different ways to

smarter, more sustainable and more inclusive growth. The principle transport objectives are formulated in the Common Transport Policy. The overarching goal of the Common Transport Policy (EC, CTP, 2009) is the promotion of an efficient, sustainable, safe and secure transport system capable of enabling mobility whilst minimising costs for users. In the TA2020 it is furthermore stressed in the fifth priority that it is essential to support effective inter-modal transport solutions within city-regions and to improve accessibility to services of general interest in order to make territorial cohesion a reality in the EU (TA2020, 2011).

As for the political agenda drawn up by the EU2020 Strategy and the TA2020 and their relevance for metropolitan structures, the following sections focus initially on the EU2020 integrative growth objective. This objective is relevant for several of the analysed metropolitan structures. Since the project does not particularly focus on science, innovation and economic structures, no separate section is devoted to the EU2020 smart growth objective. The following sections, namely, 2.2 to 2.4 then draw on the individual themes' results with regard to the most relevant TA2020 priorities, namely polycentric development, integrated urban development and territorial connectivity. This chapter concludes with the presentation of an indicative typology on living conditions and attractiveness.

2.2. Spatial aspects of integrative growth

With the integrative growth objective of the EU2020 Strategy the European Commission aims to reduce poverty in Europe without any territorial reference. However, poverty is not only an issue of general interest but also has spatial features for instance in metropolitan regions in relation to spatial segregation. These regions are not only crucial for economic development, innovation etc., but cities in general “are also places where problems such as unemployment, segregation and poverty are concentrated” (EC, 2011: 12). The analysis conducted in the BEST METROPOLISES project has revealed different sources and patterns of socio-spatial disparities and segregation.

One crucial factor fuelling socio-spatial differentiation in metropolitan regions is the lack of affordable housing for the inhabitants. In order to assess the affordability of housing² the ratio between economic indicators such as housing costs and the income per household is usually considered (Czischke, 2011: 3). Nevertheless, the concept of affordability is context sensitive. The definition by Eurostat defines the corresponding “Housing cost overburden rate” as “the percentage of the population living in a household where the total housing costs³ (net of housing allowances) represent more than 40% of the total disposable household income⁴ (net of housing allowances)” (Eurostat, 2012)⁵.

Despite the common trends shared by the three metropolitan areas, the comparison of the magnitude and structure of population growth reveals that Paris and Warsaw require a more complex provision of housing affordable for all population groups, while the needs of Berlin are more focused on low income inhabitants. Within the BEST METROPOLISES project the estimation of housing needs for population with a potentially low housing affordability in Warsaw provided three different approaches based on: incomes in decile groups, on data

² For a clarification between ‘affordable housing’ and the ‘affordability of housing’ see Scientific Report, chapter 4.

³ Housing costs include mortgage or housing loans interest payments for owners and rent payments for tenants. Utilities and any costs related to regular maintenance and structural insurance are likewise included” (Pittini, 2012: 2).

⁴ Disposable household income includes: all income from work (employee wages and self-employment earnings); private income from investment and property; transfers between households; all social transfers received in cash including old-age pensions.

⁵ Another measure for comparing the affordability of housing across countries lies in comparing purchasing power parity income after tax and housing costs.

concerning granted credits and on development trends of the housing market and the number of marriages taken. Regardless of the estimation method, the obtained demand accounts for slightly more than 100 thousands dwellings (see Annex). The questionnaire survey among students of Warsaw's universities also shed some more light on the future demand for affordable housing especially in the sector relating to rented flats (see the box below). Furthermore, in the cases of Paris and Warsaw, the need for more affordable housing is also apparent in the number of households waiting for a flat under a social housing scheme.

While the modernisation of dwellings is usually favourable in terms of metropolitan attractiveness as it implies improved housing standards, it often also affects the affordability of housing in a negative manner e.g. if rents increase as a result of the modernisation and cannot be compensated by corresponding savings in heating or other costs. Thus, there is a trade-off between housing standards and the affordability of housing, which in turn affects the local population's housing choices and contributes to segregation.

Generally speaking, socio-spatial structures in the three metropolitan regions are shaped by several geographic, functional and historic factors. Due to migrations, new lifestyles, changing local urban attractiveness, housing affordability and socio-spatial structures are evolving at different paces, occurring, for instance, at a faster pace in Berlin and Warsaw as compared to Paris. In some parts of the metropolitan regions one can observe a decreasing diversity of the population structure which results in the homogenisation and growing concentration of particular social groups, especially those regarded as disadvantaged (low income and/or immigrants). Simultaneously, migration of well-off households from the cities to the metropolitan suburban areas is still apparent. In consequence, recent migration patterns have contributed to the deepening of internal disparities in all three metropolitan areas.

Gentrification also contributes to new socio-spatial structures. Depending on the specific population structure it mitigates or widens disparities. This phenomenon, visible in all three cities, is due to a large share of highly educated inhabitants with middle and high levels of income, working in innovative and creative jobs (in particular) who contributed to the displacement of the former population.

The housing situation and its future perspective according to the students of Warsaw's universities

A questionnaire survey was conducted among students of Warsaw's universities (Warsaw University, Warsaw School of Economics, Warsaw University of Life Sciences; sample size 671 students). More than a half of the students that took part in the survey (58%) were strongly connected to Warsaw (lived in the city or its immediate neighbourhood before starting tertiary education), 40% moved to Warsaw from other parts of the country, while 2% came from abroad. During their tertiary level education, the majority of respondents live in Warsaw (81%), only 16% commute from the Warsaw suburban zone (mostly those who had lived in the suburban zone before becoming students) while 3% commute longer distances. Students originating from the suburban zone tend to remain in their place of origin, only 1% of students moved to Warsaw during their studies period. Of those that live in Warsaw during their period of tertiary education the majority (52%) live with family (either close or extended); others rent a room or flat (28%), live in students hostel (9%) or own their own flat (8%).

Among those students that came to Warsaw from outside of the city or its suburban zone (42%) the majority plan to stay in Warsaw after finishing their education (35.7% decided to stay and 34.6% is rather decided) – one in every tenth student does not know what he/she is going to do after tertiary education. Asked about their status two years after graduation, more than half of the respondents still see themselves living in rented properties (individually with friends or with spouse). Only one respondent in four thinks that they will be able to buy their own flat while 11% will live with their families. Paradoxically, among those that decided to stay in the city, 54.9% evaluate the possibility of

them finding their own flat to be either bad or very bad. It can be assumed that behind the decision to stay in the city are hidden such factors such as the perceived attractiveness of the labour market or accessibility to services (especially those of a high level) which encourage them to stay in the city despite the envisaged housing difficulties.

The evaluation of the general situation in respect of Warsaw's housing and labour markets provided by respondents is rather bad (51%) as only 16% of respondents gave it positive marks. The worst evaluations were given by students originating from Warsaw (55%) and those that originate from suburban areas (51.4%). Outsiders' negative evaluation was slightly weaker as only 46.8 % saw the situation in the city's labour and housing markets as very bad.

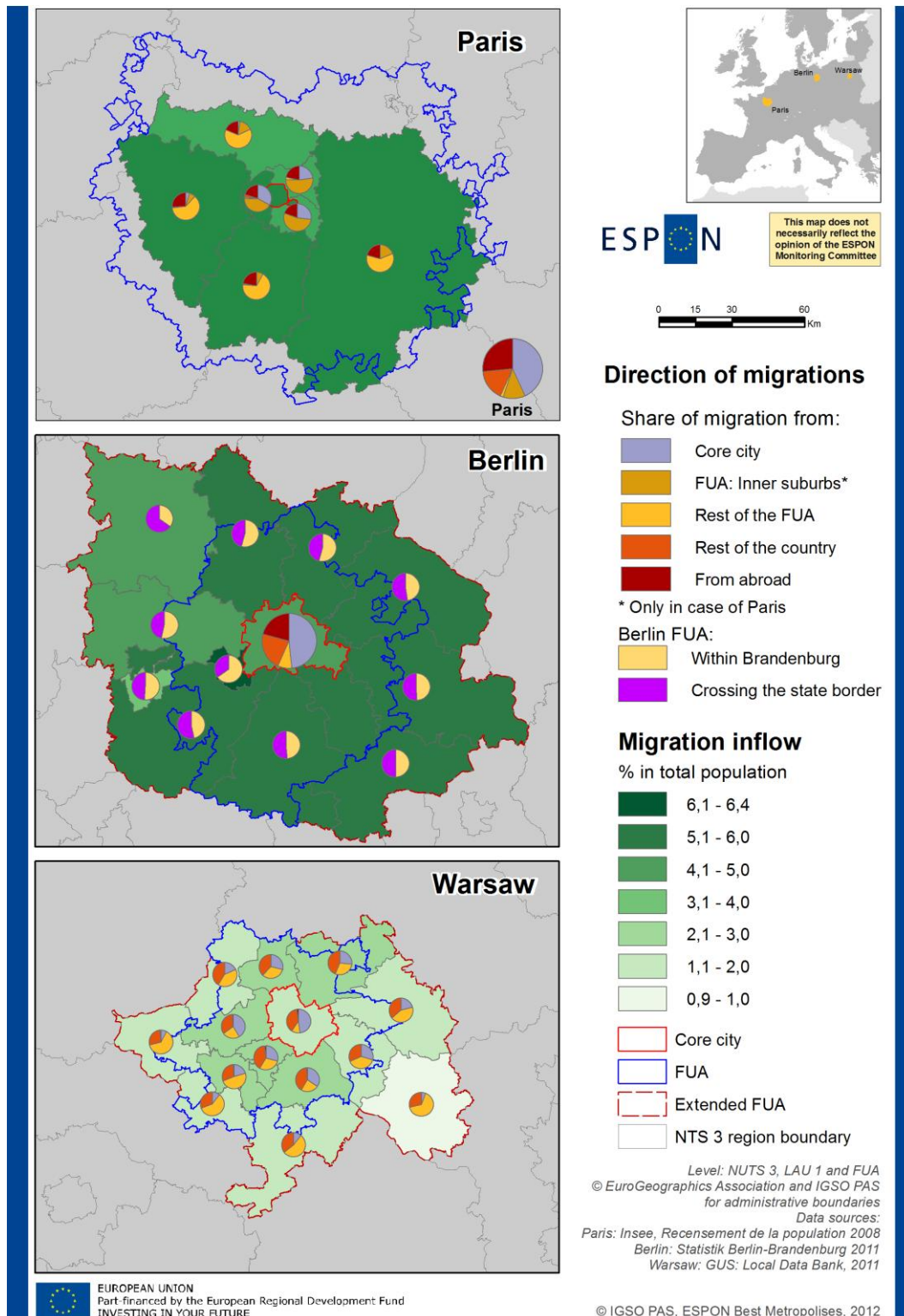
Despite this negative evaluation of the city's labour and housing markets, a large group of respondents plan to develop their career path in Warsaw. However, the majority of this group aim to utilise rental options (53%) even over the longer term (2 years) rather than purchase their own property (25%).

In Paris mainly singles, childless couples, and more generally young people looking for studying and working opportunities move to the metropolitan region. These population groups are complemented by relatively poor households from abroad. At the same time, families and pensioners in particular are moving away from Paris in the search for better and more affordable living conditions. Nevertheless, residential mobility is quite complex in the Paris metropolis if analysed by applying a triple division: the city, the first ring of suburbs and the outer suburbs⁶. The newcomers to the city have, generally speaking, already been inhabitants of the metropolitan region of Paris or are recruited from outside the Ile-de-France region or from abroad (Map 1). Those who have moved to the communities localised in the first ring of suburbs have often lived there before or have moved from Paris. Finally, in the outer suburbs, apart from internal residential mobility, new residents are generally recruited from abroad. As a consequence of this spatial specialisation in terms of residential mobility, socio-spatial disparities increase in a twofold manner: firstly, residential mobility is limited to a few groups and secondly, the geographical isolation of low income households continues.

In Berlin, residential mobility is particularly high with two principal directions of migration – a process of concentration in the central districts of the city is accompanied by one of suburbanisation. The share of foreign migrants and population is particularly high in some central areas of the city, which contributes to socio-spatial differentiation, spatial segregation and the emergence of social disparities. Simultaneously, other central areas have developed into areas that are particularly attractive to young and creative inhabitants. In Warsaw, positive net migration was characteristic for "a Warsaw ring", the municipalities located around the city of Warsaw (Degórska, Deręgowska, 2008), decreasing towards both external borders of the region and to the centre of the city. On the other hand, further analysis indicates that the outflows from Warsaw were related to the spatial proximity of current and previous places of residence which is similar to the trends observed in the Paris metropolis.

⁶ The first ring of suburbs includes the NUTS 3 regions (*départements*) Hauts-de-Seine, Seine-Saint-Denis and Val-de-Marne. The outer suburbs include the NUTS 3 regions (*départements*) Val d'Oise, Seine-et-Marne, Essonne and Yvelines.

Map 1 Migration inflows and direction in Paris (yearly average in 2003-2008), Berlin (2010) and Warsaw (2010)



Apart from overall migration trends, all three cities have experienced the immigration of foreign residents, though to different extents and from different origins. The latter are strongly influenced by the country's historical ties and development. In many cases foreign immigration – at least when individual nationalities account for a significant share of migrants – contributes to the existence and development of socio-spatial differentiation in the

metropolitan cities. Such examples refer specifically to immigration from outside the EU and often even outside Europe. In Paris, currently Chinese, Malian and Turkish immigrants are most affected by segregation; this is even the case when they are second generation immigrants in Paris. In Berlin, e.g. Turkish, Russian and Vietnamese immigrants are concentrated in parts of a few districts. Though at a lower scale, Warsaw also experiences a spatial concentration of Vietnamese immigrants. Apart from some dominating immigrant groups, the socio-spatial structures of other foreign immigrants are much more a result of their educational attainment and job and income situations than a matter of their nationality or origin. These groups are often spatially more dispersed in the city, as in the case of Ukrainians in Warsaw and migrants from different EU countries in Berlin. Thus, while foreign immigration may contribute to socio-spatial differentiation and segregation in some areas, it is not a phenomenon which holds for all groups of foreign migrants but, in many cases, reveals a very much more differentiated picture. Thus, immigration not leading to additional socio-spatial differentiation cannot be considered as an obstacle to the integrative growth objective of the EU2020 Strategy.

Overall, as a result of the various processes described above, metropolises tend to be continued places of socio-spatial disparities, which in sum hamper the EU2020 Strategy's integrative growth objective. Even though the extent of segregation differs between the metropolises, it is continuously visible. Past developments have not, thus far, indicated a turning point in respect of reduced poverty and segregation in the analysed metropolises.

2.2. Integrated urban development

In order to overcome increasing socio-spatial disparities, it is necessary to develop policies which enhance integrated urban development, between cities, within the cities as well as between them and their neighbouring municipalities. The TA2020 (2011: 7) correspondingly states in its second priority that: “[...] we recommend applying an integrated and multilevel approach in urban development and regeneration policies. The cooperation and networking of cities could contribute to smart development of city regions at varying scales in the long run. Cities should, where appropriate look beyond their administrative borders and focus on functional regions, including their peri-urban neighbourhoods.” Moreover, the governance dimension of regeneration policies is also crucial (compare with chapter 4 as well as chapter 7 of the Scientific Report). The cities of Paris, Berlin and Warsaw already apply different policies as regards improving living conditions and the attractiveness of problematic city areas with each achieving varying results (). In Paris, fighting social segregation and the stigmatisation of areas is tackled by the legal regulation of having a minimum share of social housing in the urban centres of the metropolitan area while fiscal incentives are provided to private households moving to urban renewal areas. The city of Berlin has a special focus on “soft” measures building on a socially participative approach which aims to improve the living and working environment of selected areas. In Warsaw, the “Local Revitalization Programme 2005-2013” was set up to integrate various policies in respect of the redevelopment of those parts of the districts that have lost their previous social and economic functions.⁷

⁷ For more details on these policies see Chapter 4 of the Scientific Report.

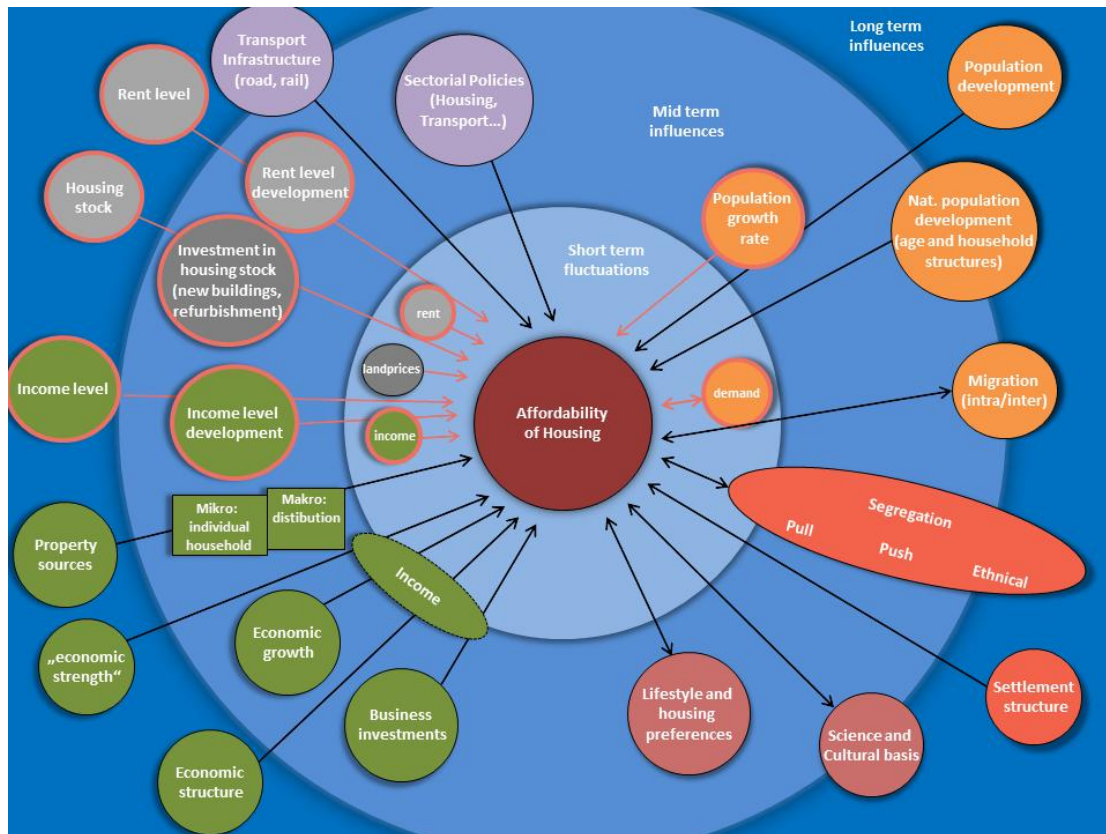
Table 1 Overview of important housing-related urban development policies in Paris, Berlin and Warsaw tackling socio-spatial disparities

	Paris	Berlin	Warsaw
New residential areas	Regional calls for new urban neighbourhoods to promote “green” housing; national calls for ecologic neighbourhoods	Individual development projects of areas under structural change	Land use transformation: Programme of Municipal Building Construction 2008-2012; Lowered 7% VAT rate for construction and installation works and renovation works
Restructuring of existing (residential) areas	Social housing renewal; Urban and social renewal in disadvantaged areas by providing financial help for dedicated projects in these areas; Social actions to support local associations, mobile teams, etc, in selected residential settlements	Active City Centres; Local urban renewal areas; Urban restructuring East/West; Investment bank support for ecological building; Protection of urban architectural heritage	Modernisation of existing housing stock: Programme of Municipal Building Management 2008-2012; Lowered 7% VAT rate for construction and installation works and renovation works; Thermo-modernisation and renovation Fund Urban renewal: Local Revitalisation Programme 2005-2013
Socio-spatial disparities	Reduced VAT for private housing around renewed areas Legal minimum of social housing per city Dissemination of social housing in private projects	Social Urban Development Monitoring; “Aktionsräume plus”; Social City – “Quartiersmanagement”	Programme “A Family’s own home”; Government programme on providing support for social housing

These different approaches not only lead to different results but also take into account the different needs of disadvantaged city areas, their extent and specific situation. The focus on general development programmes and strategies in Warsaw would not sufficiently tackle the problems encountered in the problem areas of Berlin or Paris. While general development like that of infrastructure, e.g. to ensure job accessibility, is necessary and for instance an issue in parts of Paris’ *banlieues*, it is not sufficient to reduce socio-spatial disparities. Similarly, the social participative approaches undertaken in Berlin might be difficult to transfer to Paris, simply because the extent of segregation and the pure size of the problem areas differ greatly and are more severe in the metropolitan region of Paris than in Berlin. Thus, the understanding of different integrated urban policy approaches needs to include an understanding of the different territorial conditions of the area where the policy is implemented. Nevertheless, the diversity of these examples gives us an idea of the potential variety of approaches, approaches which could also prove useful in other European metropolitan areas particularly as the policies of these three metropolises already reflect the very different levels and extents of problem areas encountered.

The complexity and the necessary degree of integration in terms of urban policies can be illustrated more generally in relation to the factors affecting the affordability of housing – being one of the crucial dimensions of living conditions and contributing to segregation. Figure 1 summarises different fields of influence, different time periods, directions, intensities and values of influence. In turn, many of these different fields of influence are subject to one sector policy or another. This shows the complexity of necessary policy integration bearing in mind that in each case the policy complexity is quite specific.

Figure 1 Factors influencing the affordability of housing



Source: own elaboration

2.3. Polycentric development

Polycentric development as the key element in achieving territorial cohesion is recommended for all relevant territorial levels in order to foster territorial competitiveness (TA2020 2011). This issue was therefore investigated in the three metropolitan regions from a triple perspective: their spatial structure, development / changes in the direction of spatial growth and complexity and structure of economic / growth poles. The aforementioned themes were analysed respectively at the scale of the FUA and at the city level in order to assess the scope of functional and morphological intra-metropolitan polycentricity.

Spatial structure

The spatial structures of the three metropolitan regions differ in terms of their complexity and differentiation of urban patterns. In the case of Paris, it has developed without any particular historical interruption with a dense centre (both with regard to the population and economic activities) and a more extensively used suburban area (especially on the fringes of the Paris basin). Several attempts have been made to introduce a more polycentric pattern in terms of urban, economic and functional structures, including: the concept of 'new towns' as satellite poles which was implemented in the 1970s (e.g. the Central Business district La Défense and Charles de Gaulle airport). Nevertheless, polycentrism could not be significantly enhanced, despite the localisation of several medium- to large-sized cities (around 100,000 inhabitants) to counterbalance the proximity of the city of Paris.

Berlin displays a less hierarchical relationship between the core city and the sub-centres than does either Paris or Warsaw. Nevertheless, the metropolitan region of Berlin is still quite monocentric e.g. in terms of service functions, population distribution, etc. The internal structure of the city of Berlin manifests a much more polycentric structuration, as there is no

single, dominant business district but rather a series of districts with different structures and functions.

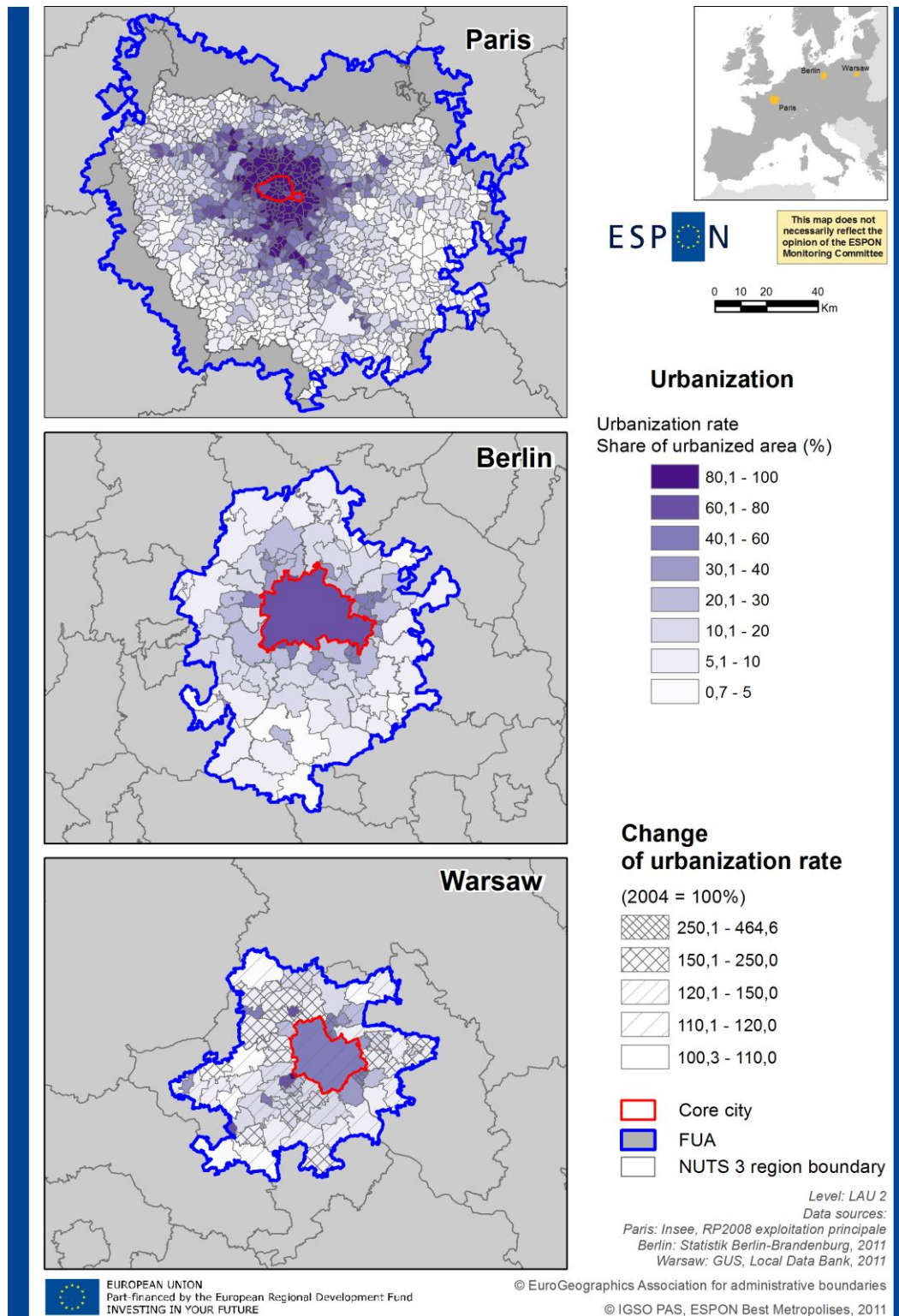
An even more concentric pattern is observed in the case of the Warsaw metropolitan region, where the city of Warsaw is not balanced by the existence of other large-sized towns. Only several medium-sized and small towns are located in the metropolitan region, although the functional position of the surrounding towns is rather low and they all display rather similar functional profiles. Referring to the wider scale of the Mazovia *voivodeship*, there are 5 sub-regional centres which are designed to counterbalance the capital city, however, their impact range remains rather weak.

Development/changes in the directions of spatial growth

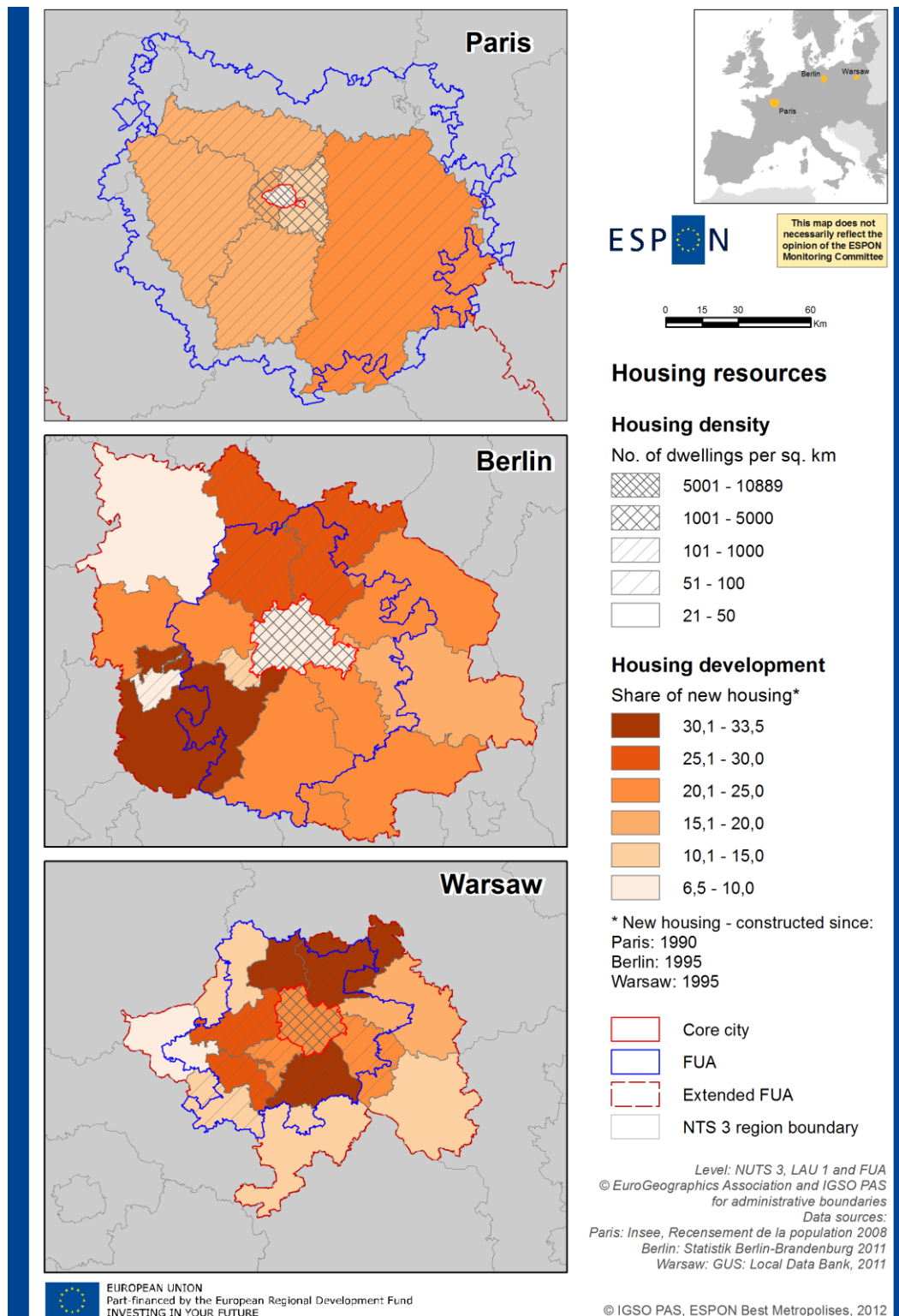
The development of metropolitan regions is usually accompanied by suburbanisation processes in the urban fringe (FOCI, 2010). Suburbanisation is continuing in all three metropolitan regions due to changes in economic circumstances and lifestyle preferences. The former correspond to the limited and expensive land resources in the metropolises, whereas the latter are shaped by a need for affordable housing, especially among households with children. The three metropolitan regions are shaped by these processes which vary in terms of intensity: the city of Paris and the inner suburbs⁸ are characterised by particularly high levels of urbanisation while the municipalities neighbouring the cities of Berlin and Warsaw are still more extensively used (). Nevertheless, only the Warsaw suburban area realised a significant level of growth in the share of urbanised land over the last 6 years (2004-2010) whereas the other two metropolitan regions underwent only slight changes. The expansion of the residential function in suburban areas is also confirmed by the distribution of newly constructed housing units (). The large number of new dwellings around the cities Berlin and Warsaw confirms the ongoing process of progressive suburbanisation. The metropolitan region of Paris continues to grow but the process of the redevelopment of formerly used territory seems to play a pivotal role in the current changes of urban structure.

⁸ The three *Départements* (first ring of suburbs) neighbouring the city of Paris. Compare footnote 6.

Map 2 Urbanisation rate in metropolitan areas of Paris (2008), Berlin (2010) and Warsaw (2010).



Map 3 New housing developments in metropolitan areas of Paris, Berlin and Warsaw.



Regardless of the prevailing differences in respect of the processes of spatial development in each metropolitan area, two common features can be distinguished. Firstly, faster growth in the suburban areas is clearly visible when they are compared to the whole metropolitan region. Secondly, the predominance of the centrifugal directions of displacement, fitting the classic processes of residential suburbanisation results in the de-concentration of settlement systems.

The Paris metropolis struggles with an insufficient level of control over suburbanisation while the process is reinforced by the acute housing crisis and the search for affordable housing opportunities beyond the city limits. This negative process is moreover further reinforced by the residential mobility of high income households moving to the suburbs (lifestyle motivations, access to vast empty plots, natural amenities, etc.,) and middle-class movements oriented towards less expensive multi-family buildings in neighbouring municipalities. On the contrary, in Berlin the migration pressure is lower, and there are still empty areas within the city borders. Therefore, the process of urban sprawl is less severe and more guided by municipal development plans, which define the localisation of retail centres and/or new real estate areas. Finally, in the Warsaw metropolitan region, the phenomenon of suburbanisation is steadily increasing, particularly in the south-western areas adjacent to the borders of the core city.

The main drawback of these suburbanisation processes relates to the uncontrolled and unstructured creation of urban sprawl due to the existence of inefficient protection or constraining measures. The internal de-concentration of metropolitan regions will cause a decline in transportation and settlement efficiency, especially in a situation which is followed by an additional scattering of buildings in the area (Warsaw urban sprawl) or a lack of a clear concentration (Paris peri-urbanisation). This common problem brings forth environmental threats and quickly overloads the transport infrastructure. Thus, a more integrated and deliberate shaping of settlement and transport policies is required accompanied by the creation of a better-adapted metropolitan governance system and closer cooperation with local authorities and actors.

The ongoing development of residential functions in the suburbs has not however been accompanied by an improved economic role for smaller urban centres, something which would be crucial to counterbalance the daily commuting flows to workplaces in the metropolis. Thus the capacity and the efficiency of transport infrastructure networks, together with the public transport system, supplemented by the effective distribution of workplaces, services and leisure at the metropolitan scale, are the major elements supporting territorial cohesion within metropolitan areas struggling with urban sprawl.

Complexity and structure of economic / growth poles

Economic growth concentrates in large cities, but the three metropolises do not have the same economic strength, profile or influence on their hinterlands (cf. FOCI typology). Each metropolitan region has its specific economic structure combining traditional sectors (i.e. industry, highly qualified services) with new ones. Paris has hosted a powerful and diversified tertiary sector for 40 years and qualifies as a prime worldwide business and travel destination. The level of polycentricity, in terms of the distribution of economic centres, also varies between the three metropolises' metropolitan regions. More than 3 million employees work in 20 cities (Paris and inner suburbs), as compared to 1 million in 40 cities located in the outer suburbs. Nevertheless, the vast majority of the highly qualified jobs are concentrated in the city of Paris and in the South Western suburbs.

The economy in Berlin was seriously impaired throughout the period of German division and has subsequently become more focused on the development of a few services industries, including creative and media industries, thus creating new traditions. This specialisation also contributes to broader cooperation in the metropolitan region, where several sites with similar economic profiles are located. It should also be highlighted here that the recent development of R&D activities reflects the increasing integration of the metropolitan region by means of the joint innovation strategy Berlin-Brandenburg (innoBB). At the city level, the network of public and private R&D 'hubs' localised in different parts of the city, also plays a crucial role. An innovative economy is also emerging in biotechnology, in the media and catering industries in transport technologies and in the creative industry. Thus, the more polycentric

structure with regard to R&D activities and the creative industries may be considered as a possible future scenario to strengthen the role of the metropolitan region through functional linkages between smaller centres.

Warsaw has benefited from recent developments and is becoming a major investment destination with a booming tertiary sector. The majority of its creative enterprises are concentrated in Warsaw city and its immediate proximity, spreading out from the city centre to the south (Grochowski 2009, 2010). In general, jobs are highly concentrated in the city of Warsaw (Komornicki 2011). This simply confirms the outcome of previous research relating to the monocentric structure of the metropolitan region of Warsaw with the strong role played by the core city.

In terms of morphological and functional structures intra-metropolitan polycentricity becomes a tough task as it requires the horizontal and vertical cooperation of various actors / institutions and the coordination of a wide range of policies, which in turn brings forth new challenges. As the notion of polycentricity varies across Europe, one single solution is not applicable for all metropolitan regions. The example of the metropolitan region of Paris, however, indicates that developing satellite cities does not create polycentricity by definition. Nevertheless, using the lessons learned from the long-term history of polycentric development in each region, certain combinations of tools are plausible for transfer.

2.4. Territorial connectivity

Accessibility and connectivity are considered to be crucial in developing a competitive economy (see e.g. ESPON 1.2.1 and 2.1.1). This has also been recognised in the TA2020. In the 5th priority of the TA2020 it is stated that it is essential to support effective inter-modal transport solutions within city-regions and to improve accessibility to services of general interest (TA2020, 2011: 8f.). The Europe 2020 Strategy complements these accessibility and connectivity concerns with a focus on upgraded, integrated and smart transport networks. Against this background territorial connectivity of and within metropolitan regions needs to consider not only accessibility and connectivity but also the means and quality of transport.

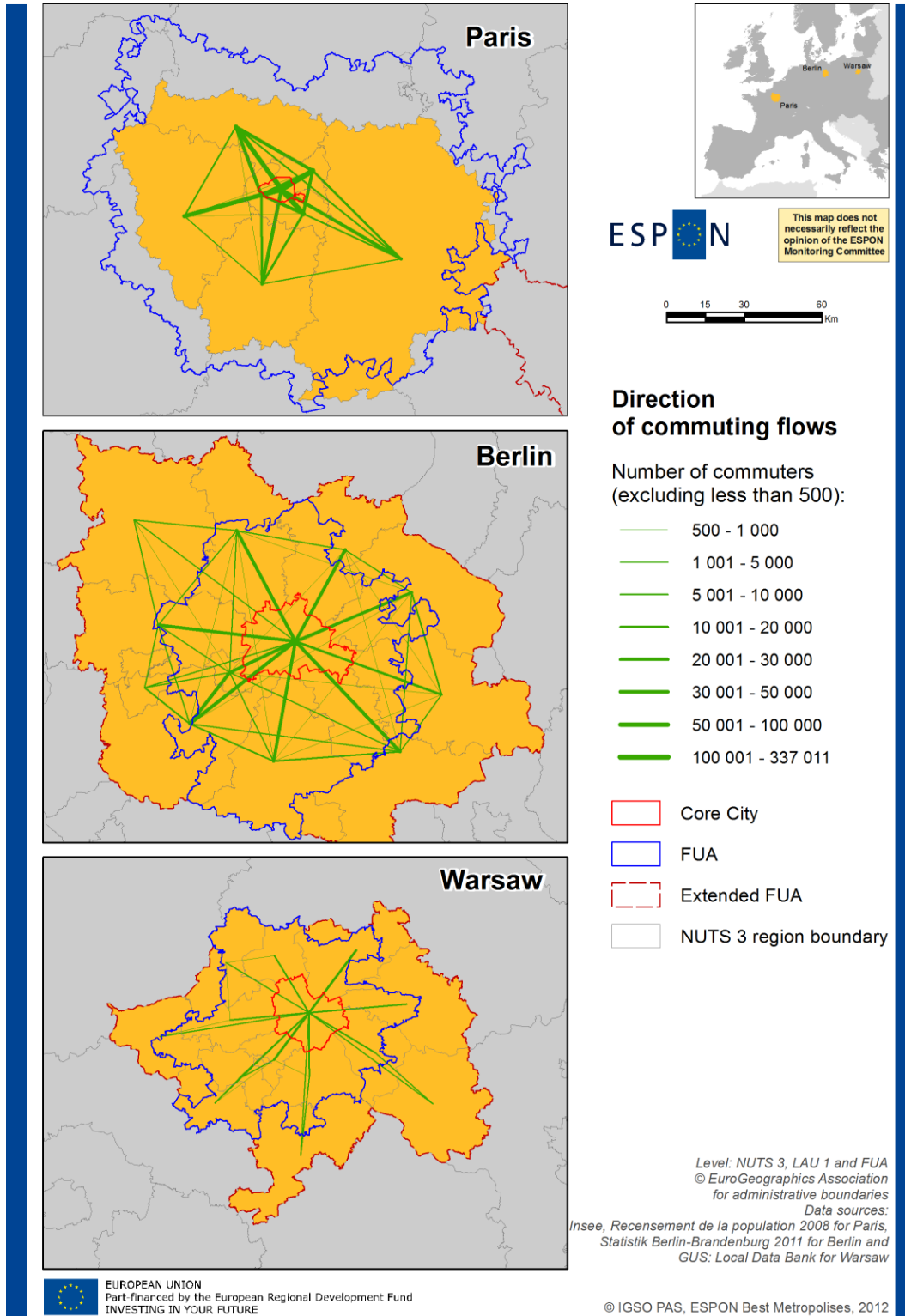
The level of congestion is a good indicator for measuring combined individual and public transport efficiency. High congestion affects accessibility negatively as it goes along with travel delays and unpredictable travel times. In addition, it also affects income and productivity, as well as fuel consumption and pollution negatively and, thus, contradicts the EU2020 objective of smart and efficient transport networks. The *TomTom* congestion index indicates considerable congestion differences between European cities⁹. Warsaw appears to be the most congested capital in Europe; in Paris the congestion level is slightly lower, while in Berlin this indicator is substantially lower. This is largely the result of a good and well integrated individual and public transport network with a low rate of motorisation and a relatively good level of connectivity to the suburban cities. In the other two metropolises high rates of motorisation and high levels of congestion is not least the result of either insufficient public transport (Warsaw) or poor connectivity between some suburban areas outside the core city (Paris).

The need for efficient (public) transport networks to go beyond the city boundaries is best illustrated by commuting flows. All three metropolitan regions are composed of numerous commuter towns and can be considered as a commuter belt or a labour market area. In Paris, both commuting time and the number of commuters have significantly increased in recent years (Berger, Brun, 2006, Navarre, 2002), which has led to particularly high commuting flows and to the abovementioned congestion. Although in Berlin and Warsaw the majority of jobs are concentrated in the metropolis the commuting pattern differs not only with

⁹ For more details on the congestion index see Scientific Report Chapter 6.

regard to size but direction and variety (see Map 4). The metropolitan region of Warsaw is the only one of the three which does not have an interlinked spider's web-like commuting pattern.

Map 4 Commuting flows between NUTS 3 (Paris and Berlin) and LAU 1 (Warsaw)



Low congestion and environmentally friendly transport can only be realised with a corresponding multimodal public transport network, which is not restricted to the city but

includes wider parts of the metropolitan region. The city of Paris has a tight and well developed public transport system which is mostly based on subway and suburban railway connections. This system is however overcrowded in the city centre and suffers from insufficient networks, lines and poor accessibility in the suburbs of the metropolitan region, especially in the outer suburbs. Berlin has an efficient public transport network with a modal split of subways, *S-Bahn*, trams, regional trains and buses which covers not only the city centre but the entire urban area and which is well connected with the neighbouring municipalities and suburbs and their public transport systems. This modal split is particularly efficient because of its adaptation opportunities to local needs. Deficits however occur with regard to the necessary modernisation of the *S-Bahn*. The public transport network of the city of Warsaw is mainly based on buses and trams and includes only one subway line. The latter is particularly overcrowded during peak hours. The bus lines, though they allow for a wide spatial range of public transport even in remote parts of the metropolitan region, are not sufficient for an environmentally friendly public transport system. These structural differences are the reason why Paris and Berlin are successful in increasing the share of public transport. In Warsaw, on the contrary, the lack of an integrated public transport system at the regional or metropolitan level is the major obstacle to providing integrated services for different modes of transport. In order to create such a system it is not only necessary to undertake transport infrastructure investments but also to introduce an integrated transport management system, which includes both the city and the whole metropolitan region. Examples of how to organise such an integrated system are provided by Paris and Berlin and could be adapted to the needs of Warsaw.

2.5. Typology: local living conditions and attractiveness

The typology utilised here was developed in order to assess the current state of metropolitan structures from a perspective which includes housing, socio-spatial structures, transport and migration. The variety of factors affecting living conditions for instance include different housing conditions, the general housing environment including social and population structures, environmental quality and the accessibility of shops and services. Therefore, any attempt to measure living conditions needs to be multidimensional and can only be depicted in parts. It is not possible to provide a comprehensive and all-inclusive picture of living conditions at any location. This holds true all the more as living conditions are also subject to individual assessments, i.e. the same objective living conditions lead to different individual location decisions etc., depending on individual preferences.

The aim of this typology was to provide a synthesised picture of the internal differentiation of the metropolitan regions in terms of living conditions and their attractiveness to inhabitants. The delimitation of areas that possess good or bad living conditions is based on the statistics concerning housing stock whereas the attractiveness criteria refer to the social and economic features of the inhabitants, supplemented by the level of connectivity of an area. Relatively high income enables a more independent choice of the place of residence and might be treated as a possible proxy to indicate which areas are preferred by those inhabitants whose residential choices are not restrained. Thus, the assumption made claims that the areas of concentration of upper social categories represents the higher status areas and might be regarded as the most attractive. On the other hand, the concentration of underprivileged persons here represents lower status areas. The members of this group have limited housing opportunities (mostly because of their income level) their residential choice might be restrained to a relatively small number of areas (or perhaps even to only one).

The utility of accessibility indicators in developing the typology was limited. In the case of the core cities of Paris and Berlin, this indicator received high values across the whole territory and for this reason was omitted on the maps. In the case of Warsaw, it is crucial to the marked areas with lower connectivity but which could be improved in the future.

An attempt was made to prepare a typology which was as similar as possible across each of the three metropolises. However, due to different development paths experienced and the differing nature of the data available as indicated above, additional, specific variables for each metropolitan area had to be considered. In Warsaw, the concentration of newly built dwellings has been an important factor of change in the quality of living conditions in certain areas, whereas in Berlin and in Paris, the scope of urban renewal schemes could be regarded as a more powerful factor in terms of change in living conditions.

The proposed approach does not cover all the aspects of attractiveness and living conditions, nevertheless it provides a general picture of the three metropolitan regions, indicating general spatial patterns of attractiveness. Additional criteria of attractiveness should however be included in any future research, for instance: the quality of the environment as well as the provision of services and social infrastructure. Collating this additional information would undoubtedly improve the typology, providing more precise information while combining data of qualitative character.

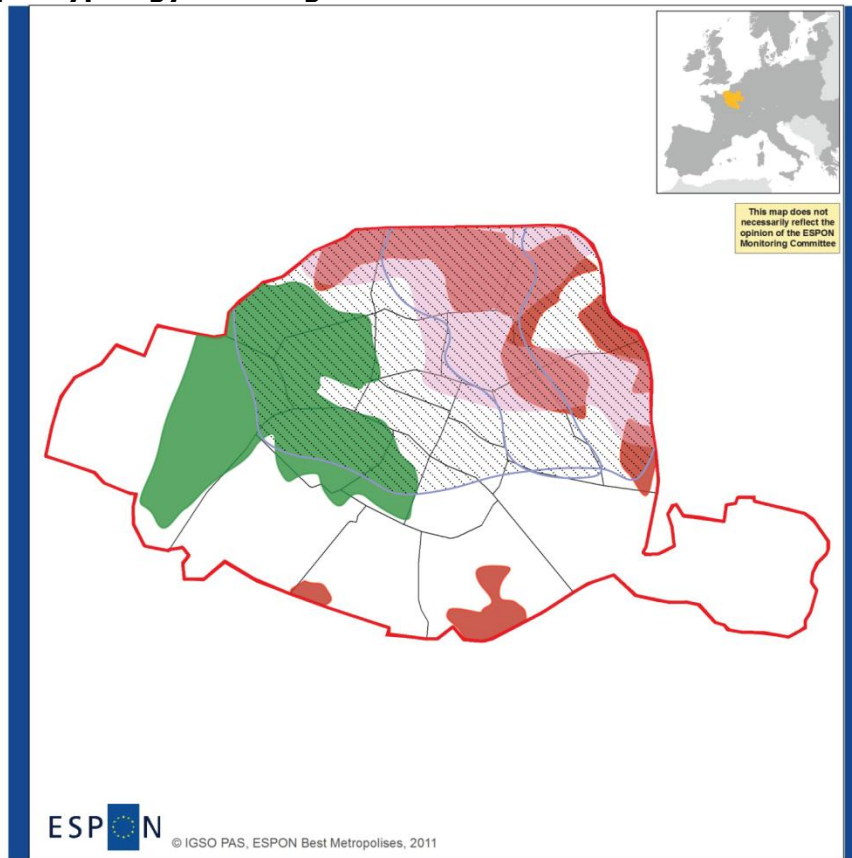
Due to the lack of (or insufficient) data sources to present each criteria in a detailed manner, the typology is based on somewhat different sets of variables in each metropolitan region which corresponded in the best manner to the proposed approach (Table 2). Moreover, in the case of particular metropolitan areas, different obstacles to typology development emerge. In the case of Paris, the category describing “higher quality of housing conditions” has not been used because of the lack of data concerning the average surface of dwellings per person. The available data only allowed for an indication of the areas with less than average living conditions because of the lower level of dwellings equipment in sanitary infrastructure and existing sub-standard dwellings within privately owned multi-family buildings for rent. For the city of Berlin, the data describing average dwelling spaces is limited to the district level, whereas the other indicators used refer to lower statistical units and are thus much more differentiated than the dwelling size indicator (i.e. rent level). The major obstacle encountered during the preparation of the typology for the city of Warsaw is the lack of data on income. That is why the combination of other socio-economic variables is used in assessing areas in terms of their attractiveness.

Table 2 Living conditions and attractiveness indicators for Paris metropolitan region’s typology

Type / class	Paris (core city)	Paris FUA	Berlin (core city)	Berlin FUA	Warsaw (core city)	Warsaw FUA
Higher status areas	Average income above 2400 € (2008)	Average income above 2400 €	Very high development index (combination of static and dynamic index) (2010)	Average income per month above 2850 €***;	Positively correlated variables: persons with higher education level, persons employed as directors, managers and specialists;	Salary superior to national average;
Lower status areas	Average income below 1650 € (2008)	Average income below 1650 € (2008)	Very low or low development index (combination of static and dynamic index) (2010)*	Average income per household below 1915 €	negatively correlated variables: persons with primary and vocational education level, unemployed, persons employed as unskilled manual workers;	Unemployment higher than average; higher than average rate of persons receiving social assistance

Higher quality of housing conditions	-----	-----	dwellings with the surface > 40 m ² per person and rent level 25% (and more) higher than median	dwellings with the surface > 42 m ² per person	Share of new dwellings; dwellings with the surface above 30m ² per person	Dwellings with good technical infrastructure; dwellings with the surface above 30 m ² per person
Lower quality of housing conditions	Uncomfortable dwellings (without bath and shower) Substandard privately rented housing stock	Uncomfortable dwellings (without bath and shower) Substandard privately rented housing stock	dwellings with the surface < 36m ² per person and rent level 20% (and more) lower than median	Dwellings with the surface < 36 m ² per person	Dwellings with the surface < 10m ² per person, dwellings inhabited by 2 or more households;	Dwellings with poor technical infrastructure; dwellings with the surface below 10 m ² per person
High share of new dwellings	-----	-----	-----	More than 3 % (2008-2010)	-----	More than 30 % (2000-2010)
Urban renewal	Concentration of quarters classified as ZUS, ZRU and ZFU (2007)	Concentration of quarters classified as ZUS, ZRU and ZFU (2007)	Project finalised and in progress	-----	-----	-----
Low accessibility	The whole core city was considered as having good connectivity	Railway or underground accessible at the distance greater than 5 km	The whole core city was considered as having good connectivity	Railway accessible at the distance greater than 5 km away	Underground, railway and tramway stops beyond walking distance	Railway accessible at the distance greater than 5 km

Map 5 Typology on living conditions and attractiveness in Paris metropolis

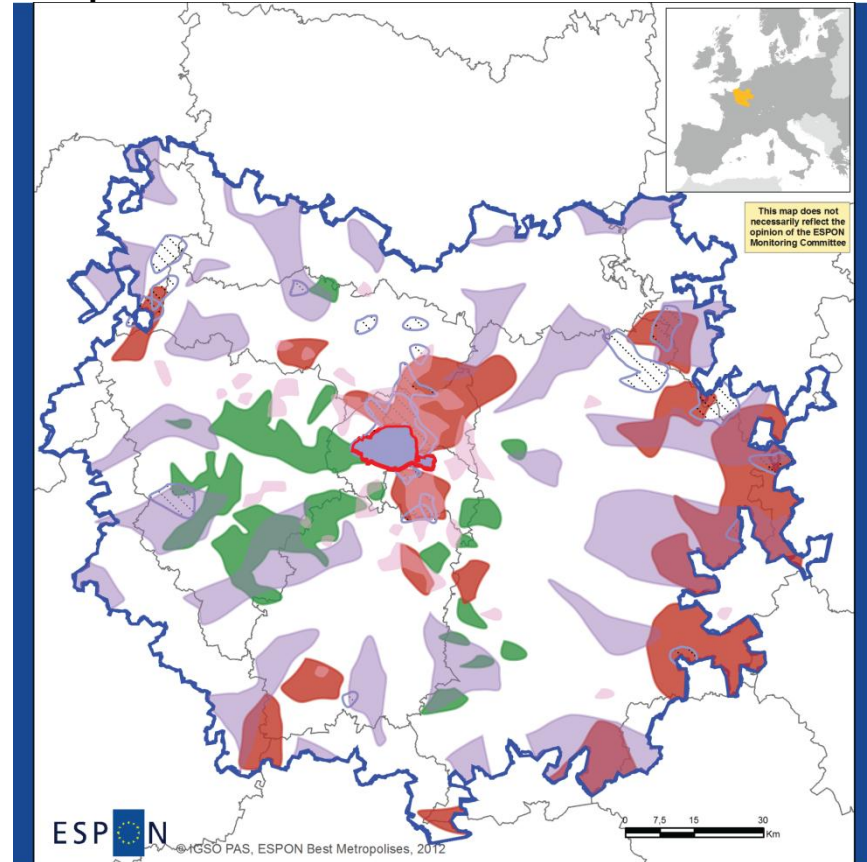


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Level: City districts

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- Higher status areas
- Lower status areas
- Urban renewal
- Lower quality of housing conditions



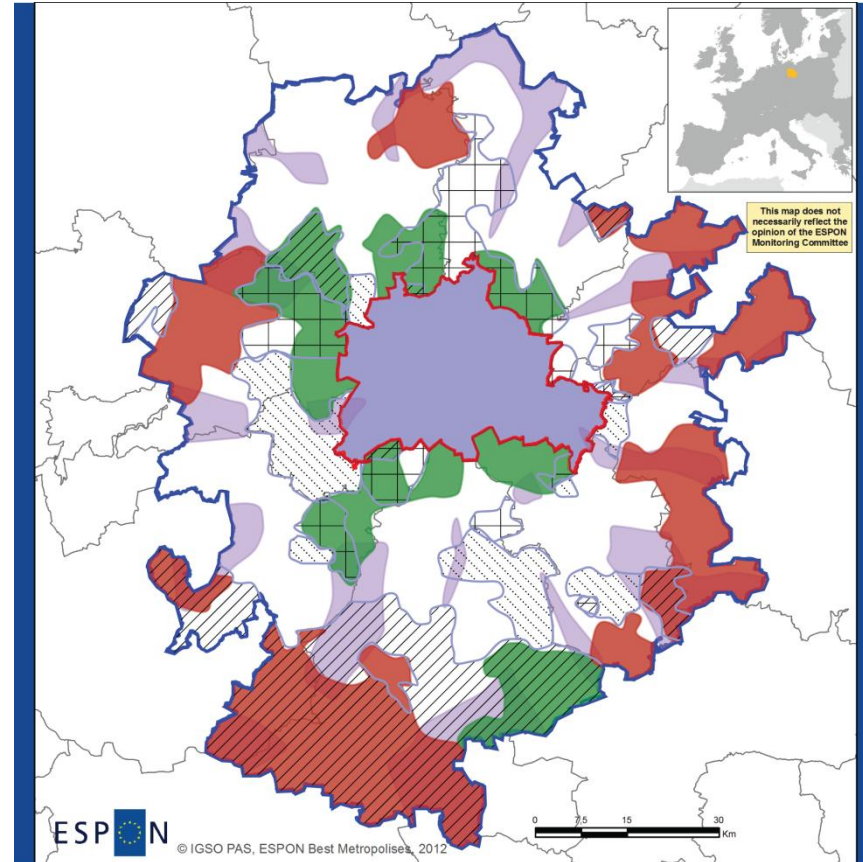
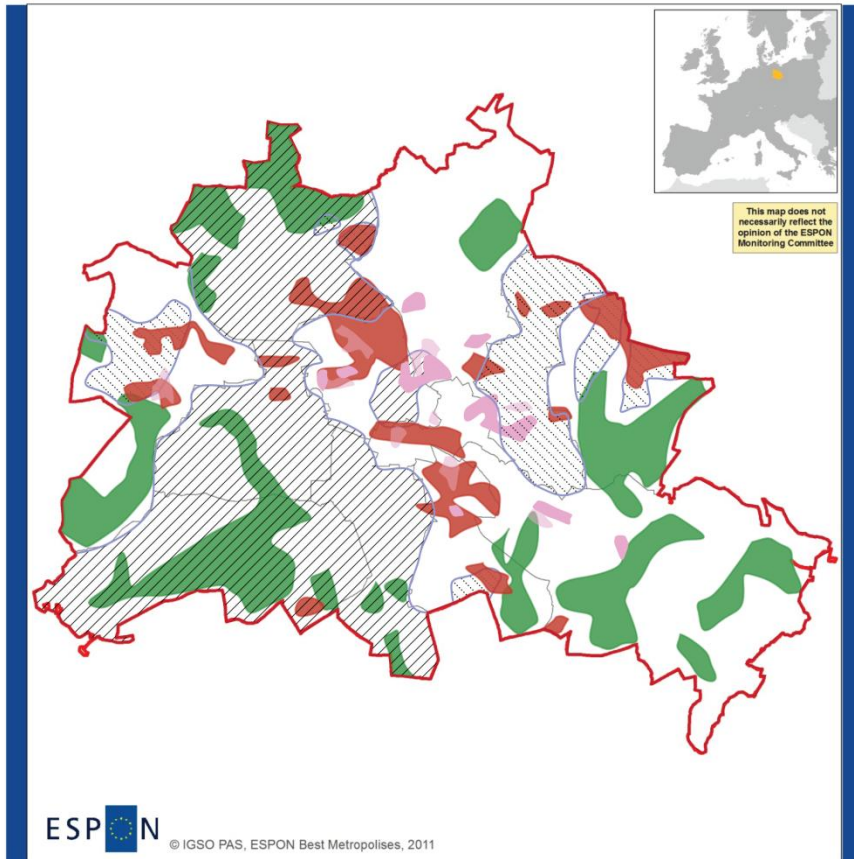
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Level: NUTS 3 and FUA

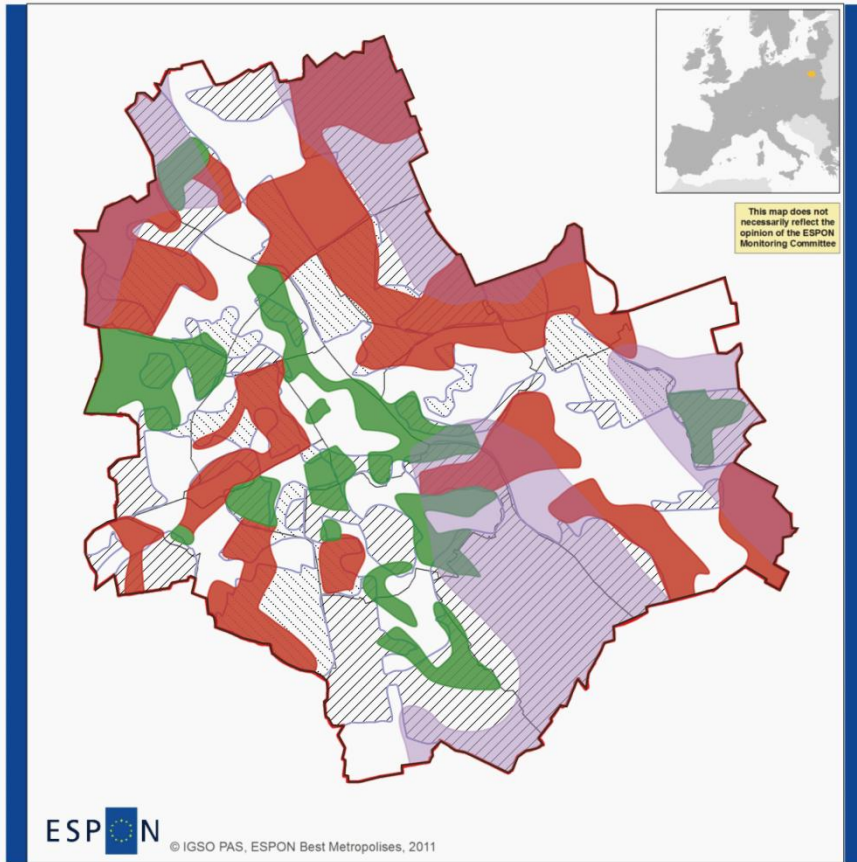
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- Higher status areas
- Lower status areas
- Urban renewal
- Lower quality of housing conditions
- Low accessibility

Map 6 Typology on living conditions and attractiveness in Berlin metropolis



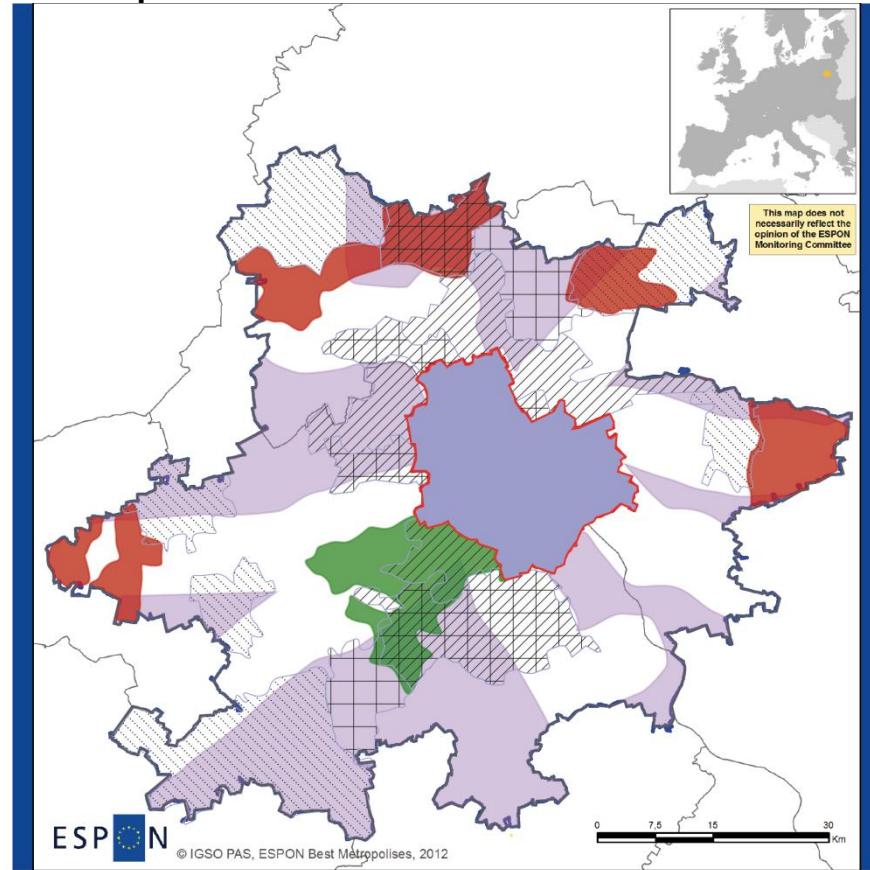
Map 7 Typology on living conditions and attractiveness in Warsaw metropolis



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- | | |
|--|---|
|  Higher status areas |  Lower status areas |
|  Higher quality of housing conditions |  Low accessibility level |
|  Lower quality of housing conditions | |



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- | | |
|--|---|
|  Higher status areas |  Lower status areas |
|  Higher quality of housing conditions |  High share of new dwellings |
|  Lower quality of housing conditions |  Low accessibility |

2.7. Comparison

The spatial patterns of living conditions and attractiveness in the three metropolitan regions are significantly influenced by historical conditions. In other words, actual spatial patterns replicate previous divisions. In Paris, the disparities between the western and north-eastern parts of the city have existed since the 19th century (see Chapter 1). Despite numerous policies designed to tackle this problem, this historical division seems to be written in stone. If we compare the maps with the distribution of social dwellings in the city of Paris, the patterns are repeated with the concentration of HLM dwellings in the areas marked as lower status areas.

In the case of Berlin the pattern of areas assessed respectively to be relatively attractive (higher status areas) or unattractive (lower status areas) are quite dispersed across the city. Nevertheless, most highly attractive areas are located in the more distant areas of the city, close to forests, rivers and lakes. The least attractive areas are similarly dispersed, though they are located mostly along two principal axes: on the north-south axis and one west-east axis. Most of these areas are covered by the programme *Action Areas plus* or by other urban renewal projects, which aim at improving these areas' attractiveness.

The uneven development of the two parts of Warsaw divided by the Vistula River is clearly visible. After World War II, development was focused on the left side of the riverbank, while those areas located on the right side of the river continued to lose the attention of both inhabitants and investors. This spatial pattern might be explained by the lack of bridges and poorer access to the city centre from the districts located on the right bank of the river. In addition, lower living conditions and a concentration of pre-war buildings with poor dwelling facilities did not help in attracting new inhabitants. Furthermore, highly attractive places are partially located in the cities' centres, but in the main (Berlin and Warsaw) they do not represent the majority of very attractive places. In the case of Berlin the dispersion of the most attractive areas seems to be more dispersed in the more peripheral parts of the city than in the other two cases. Moreover, many of the least attractive areas are restricted to quite small locations, whereas they tend to be more extensive in size in the other two metropolises. Warsaw has a relatively higher share of areas which are considered to be of lower attractiveness as compared to the other two metropolises.

Considering the FUA of Paris, the main zones of attractiveness are spread towards suburban areas, mostly in south-west of Paris. It should also be noted here that the lower status areas within the FUA vary with their location. Those in the inner suburbs gather population with the lowest income and social dwellings, uncomfortable housing and high unemployment ratios. And those in the remote areas on the fringes of the FUA of Paris, mostly rural in nature, and where attractiveness is strongly related to traditional land use structures.

The FUA of Berlin is predominantly characterised by highly attractive areas in the municipalities surrounding the metropolis. These areas are not only well connected with Berlin, but have often experienced population growth together with the recent development of commercial and residential building. The areas further away from the city of Berlin are rather rural, which comes along with decreasing attractiveness, including relatively low accessibility – at least as far as public transport is concerned. Thus, high quality living conditions, as a result of large dwelling sizes are mostly the result of cheap and readily available space for housing in quite sparsely populated areas. Similarly, low quality living conditions in some areas neighbouring the city of Berlin are the result of high rent levels and relatively small dwelling sizes (e.g. Potsdam).

The degree of attractiveness in the FUA of Warsaw may be connected to the level of accessibility to the core city. This entails dynamic housing developments in the immediate suburban area, while peripheral parts of the FUA are generally characterised by lower level living conditions.

The typologies of the FUAs of Warsaw and Berlin suggest that apart from the individual characteristics of particular areas, distance to the respective metropolis is an important factor that determines the pattern of attractiveness. This is clearly visible in both Berlin and Warsaw. In the case of Paris, no such regularity is evident as the main reasons explaining the analysed patterns relate rather to the decentralisation of workplaces, environmental attractiveness and the spatial differentiation of housing costs, as well as to the relatively low residential mobility of flat owners.

3. Development visions and strategies

3.1. Introduction

Urban development visions are structural pictures of how the territory of a city should look and function ten, twenty, thirty or forty years into the future. In the ideal case, urban development visions are not just dreams of future spatial development but as concrete as possible directives relating to how that future spatial development can be achieved. In technical terms, visions are roll-back or backcasting scenarios which answer the question: What needs to be done to achieve the desired spatial development?

So which of the three cities has applied in the past and is applying today the best combination of long-term strategic planning and short-term decision-making to achieve the desired spatial development? This is the question asked in this chapter. The chapter reviews and compares long-term urban development visions and strategies for the three metropolitan areas. The review includes both visualisations and political documents outlining the objectives to be achieved and the political instruments and strategies to be used in getting there¹⁰. The chapter concludes with a comparison of urban development visions and strategies in the three metropolitan areas.

3.2. Main strategic plans

The three cities differ in the ways in which they have planned their future development over time, but all three have a history of visions in which they publically deliberated and discussed their future spatial development.

Paris

Among the three studied cities Paris was the first to introduce a strategic plan to fundamentally change the irregular medieval structure of the city. In his grand plan for the reconstruction of Paris (1853-1870) Baron Georges-Eugène Haussmann adopted both Baroque ideas of broad spectacular avenues and the rational grid layout of North American new towns implemented in the 18th century – a spirit later

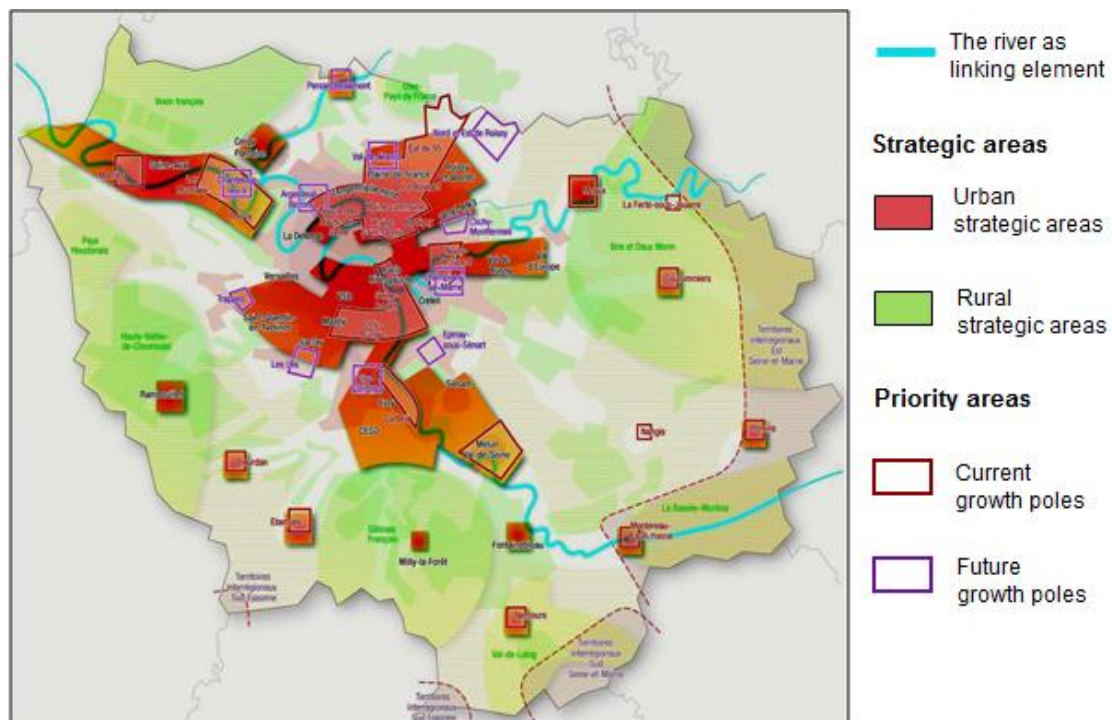
¹⁰ Many more visualisations in the form of photographs and maps of the spatial visions discussed in this chapter than can be shown in this Final Report are contained in the corresponding chapter of the Scientific Report. For the bibliographical references of the strategic documents discussed in this chapter see the Annex "Strategic Documents" in the Scientific Report.

taken up and exaggerated to the extreme by Le Corbusier in his utopian Plan Voisin of 1925.

In 1960 the *Plan d'Aménagement et d'Organisation Générale de la Région Parisienne* (PADOG) initiated by President de Gaulle aimed at easing the congestion in the central city by restructuring the disorganised settlement system in the region. It was replaced in 1965 by the much more ambitious *Schéma Directeur d'Aménagement et d'Urbanisme* (SDAU) which, to cope with the rapid population growth, structured the region by the new business centre *La Défense* west of the old city and eight new towns linked by fast commuter rail lines (RER) and radial and circular motorways. Because the actual economic and population growth was slower than expected after the first energy crisis, in 1976 the scheme was downsized to five new towns, and an environmental protection (green belt) strategy was outlined.

The first *Schéma Directeur de la Région Ile-de-France* (SDRIF) of 1994 dealt with the re-emergence of growth and its consequences, which necessitated improvements to public transport, constraining urban sprawl and protecting the environment. This document was revised in 2008 because of continuing urban sprawl and the emergence of new challenges, such as climate change, energy scarcity, growing social disparities and rising house prices in the suburbs. Map 8 summarises the spatial strategy of the SDRIF of 2008.

Map 8. Schéma Directeur de la Région Ile-de-France: strategic geography



Source: SDRIF, 2008, 170

The current situation of the Paris region is quite unusual because of a significant disagreement between two major plans. The SDRIF managed by the *Institut d'aménagement et d'urbanisme Ile-de-France* (IAU) and approved by the Regional Council in 2008 conflicts with another master plan, the *Grand Paris* project. The *Grand Paris* project was initiated by the then French President Sarkozy in 2007 to generate a new global plan for the Paris metropolitan region. The project increased the growth targets for the Ile de France to 12 million inhabitants and 6 million jobs in 2030 and 60,000 new dwellings per year to 13.5 million inhabitants and 7 million jobs

in 2030 and 70,000 new dwellings per year. At the core of the project is the new regional rail system *Grand Paris Express* with about 150 km of a new automated regional metro system linking the major centres in the region and nine planned new development clusters. In 2008 ten international multi-disciplinary teams were invited to present their visions for the future spatial structure of the Paris metropolitan area.

A convergence between the two documents, the SDRIF and the *Grand Paris* project, is currently being discussed, with the aim of establishing a renewed SDRIF 2013. Nevertheless the observing competition between state and regional planning gives rise to important open questions.

In addition, but fully compatible with the SDRIF, there is the *Plan Local d'Urbanisme de Paris* of 2006 according to which the following issues are of strategic importance for urban development: (1) improving the quality of life of citizens through the incorporation of the principles of sustainable development into planning procedures: to reduce energy consumption and greenhouse gas emissions, water, air and soil pollution; to prevent noise, to provide more green space, to protect the cultural heritage and to reduce social inequalities, and (2) the establishment of cooperation among local authorities to support the development of Paris as the heart of the agglomeration.

Berlin

Like Paris, in the 19th century Berlin made a major effort to modernise its historically overcrowded and unhealthy urban fabric by means of advanced engineering principles. In 1862 the city commissioned the civil engineer James Hobrecht to prepare a visionary plan for the fast growing Prussian capital, a plan which has continued to determine the growth and layout of Berlin's inner suburbs until this day.

On the occasion of the first international urban planning conference in 1910, the city opened the Greater Berlin (Groß-Berlin) competition yielding radical plans for the growing metropolis, such as the circular belt or radial sector plans by Eberstadt *et al.* (1910). Since then there has been an almost continuous sequence of visionary plans for Berlin, such as the regional plan by Mächler (1919), the decentralised plan by Hilbersheimer (1933), the axial plan for the Nazi capital *Germania* designed by Speer (1938) or the linear plan by the Planungskollektiv led by Scharoun (1946).

Only a few of these plans were officially commissioned or endorsed by the city government. However, in 1958, more than thirty years before Berlin was reunited, the City of West Berlin launched an international urban planning competition *Berlin Capital (Hauptstadt Berlin)* in which 150 international architectural teams produced their visions of a reunited Berlin as capital city of Germany. A few years later, in 1961, the Wall separating East and West Berlin was built and made all plans for a reunited city illusory. In 1987, in the final period of the German Democratic Republic, the City of East Berlin published a strategic plan for the development of the socialist capital and its wider hinterland.

This was the last time that long-term strategic planning for the spatial development of the whole metropolitan area occurred in Berlin. In 1999 a master plan for the inner parts of the reunited city (*Planwerk Innenstadt*) proposed a return to traditional forms of urbanism via the reconstruction of 19th century city blocks.

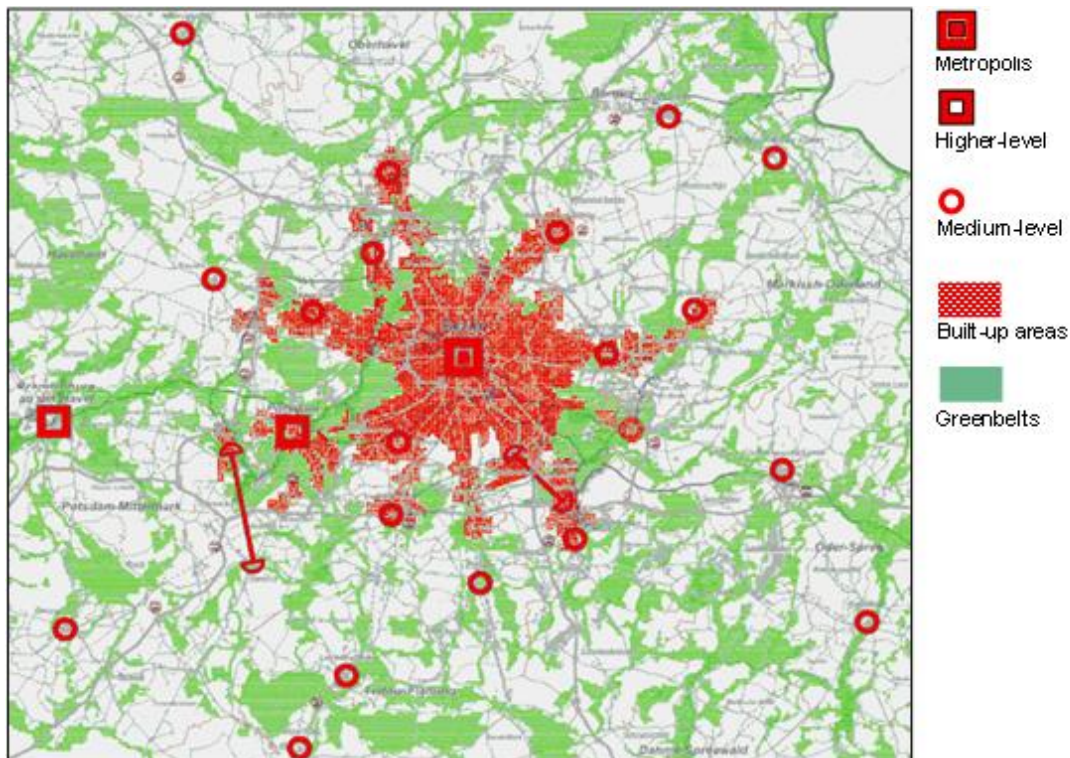
In 2001 the Senate of Berlin commissioned the *BerlinStudie* to face the challenges of the 21st century in the fields of competitiveness, employment, knowledge, information and communication technology, attractiveness for young people,

migration, social security, environment, sustainability, participation, inter-city co-operation and capital functions. Although the governing Mayor of Berlin endorsed the *BerlinStudie* as an "encouragement for action" in 2003 (Brake, 2005), it is not used as an official strategic document by the city government for its spatial development.

Berlin does not have, and has not had since its reunification, a single and comprehensive document that determines its most important governmental goals and measures for spatial planning in respect of its entire metropolitan area. Instead, it has developed sectoral plans for demographic development, housing, industrial and commercial development, climate, transport and utilities and has extended the *Planwerk Innenstadt* by similar plans for the inner suburbs. In 2004 the city, by means of a broad public discussion process, launched an *Urban Development Concept* for 2020 implemented in the form of pilot projects at strategic locations. Recently the planning horizon of the *Urban Development Concept* was extended to 2030 with the first results expected for 2014.

The pragmatic, incrementalist planning philosophy of Berlin is also reflected in the way it collaborates with the surrounding Federal State of Brandenburg. Although there is a Joint Spatial Planning Department (*Gemeinsame Landesplanungsabteilung*), which prepared a common *State Development Plan* (*Landesentwicklungsplan* or LEP) in 2009, it has not been possible to agree on a common policy to curb urban sprawl in the huge suburban "grease belt" (*Speckgürtel*) around the capital city. Both Berlin and Brandenburg maintain their own land use or regional plans with detailed binding regulations. Map 9 shows the representation of Berlin in the LEP.

Map 9. LEP Berlin-Brandenburg: settlement structure



Source: Gemeinsame Landesplanungsabteilung der Länder Berlin und Brandenburg, 2009, 94-95.

Warsaw

Strategic planning for Warsaw started with the rebirth of the city as the national capital in 1918. Already in 1916, still under German occupation, a first plan for Greater Warsaw was set up (Józefacka, 2011). In the inter-war period a master plan for the city designed by its chief urban planner Róžański remained unimplemented. After the destruction of the city by the Germans in World War II, a plan for its reconstruction was proposed in 1949 by the state president and later Prime Minister Boleslaw Bierut. In 1956 a first General Plan for Warsaw was approved (Ciborowski, 1985), while at the same time a new city centre of predominantly Soviet modernist architecture was built – the *Marszałkowska Housing District* (MDM) with the huge *Palace of Culture and Science* ruling over the city.

After the political and economic transition of 1989 it was hypothesised that the Berlin-Warsaw axis might develop into a high-growth intensity zone by attracting modern economic activity from both West and East (Domański, 1999, after Korcelli-Olejniczak, 2007). Berlin and Warsaw share a number of common characteristics (Korcelli-Olejniczak, 2007): their geographic situation along a major historical West-East axis, their membership in the Baltic Sea Region and their similar position in the eastern peripheral parts of their national territory – and also that they belong to the two most polycentric national urban systems in Europe. All of these characteristics suggest that there may be a great potential for future collaboration between the two cities, in particular in the fields of science, education and culture.

There are two major strategic documents on the future development of Warsaw (Korcelli-Olejniczak, 2004): The Warsaw Development Strategy (*Strategia Rozwoju*) of 1998 was designed to guide the development of the city until 2010. It postulated the transformation of Warsaw into a European metropolis able to compete effectively with Prague, Budapest and Vienna, but also emphasised the need to sustain its existing metropolitan functions as the national capital. The study pointed to activities that were threatened by destructive competition between the four cities but did not identify functions that could expand as a consequence of inter-metropolitan complementarity and collaboration (Korcelli-Olejniczak, 2009). In 2005 the Warsaw Development Strategy was updated and extended to 2020 (Korcelli-Olejniczak, 2006). The new strategy presented a SWOT analysis, a vision with strategic objectives divided into sub-sections and illustrated by a number of detailed programmes. The strategic goals for Warsaw are defined as follows: (1) to improve the quality of life and safety of the residents, (2) to consolidate the residents' sense of identity, (3) to develop metropolitan functions by strengthening Warsaw's position at the regional, national and European level, (4) to develop a modern economy based on knowledge and scientific research, (5) to achieve sustainable spatial order.

In 2006 the Mazovian Office for Regional Planning developed a structure plan for the Warsaw metropolitan area and published a plan showing the position of Warsaw as a major node in the system of European transport corridors (Map 10).

Recently new strategic documents were issued by the City of Warsaw:

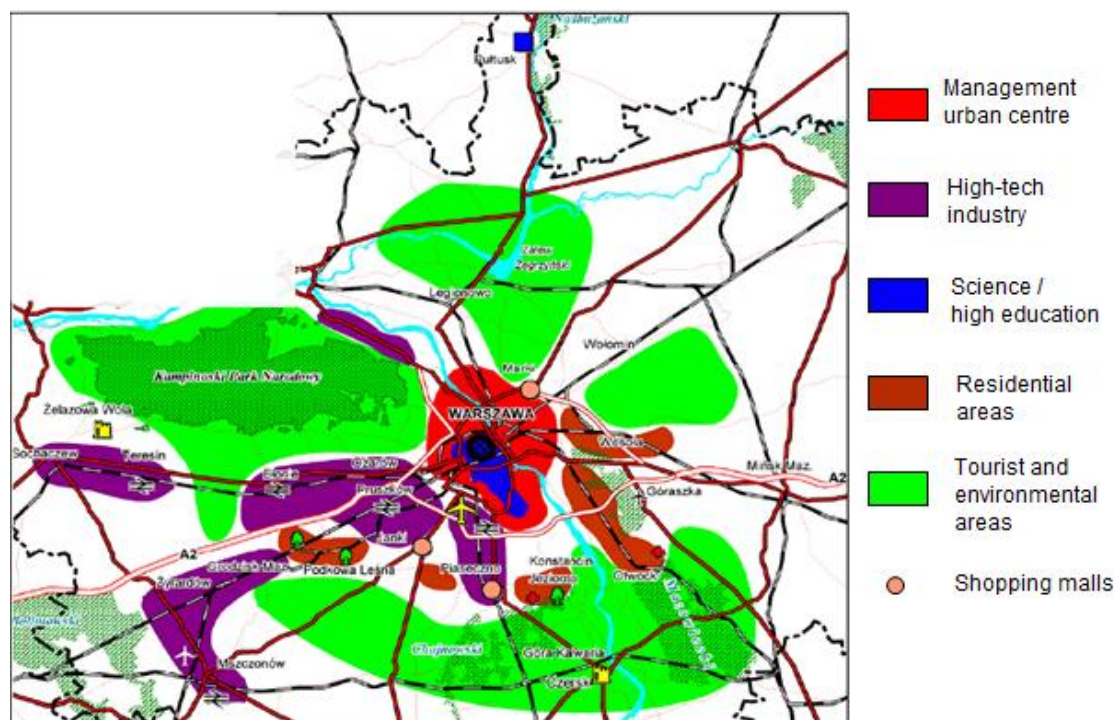
The Social Strategy of Warsaw for the years 2009-2020: Solving social problems (2008) complements the Warsaw Development Strategy for the implementation of the current social policy of the city. The Social Strategy presents the vision of an open and accessible city of high quality of life – a "City with soul". Next to such common goals as improvement of quality of life and security of inhabitants, strengthening of local identity, development of culture, social activation and metropolitan functions, achieving sustainable spatial order, social and occupational

integration and reintegration and the increase of social potential, the Social Strategy introduces the goal of an integrated social policy as an answer to current challenges and social issues. The document is built on the idea of creating a "good city" at the local, regional and European scale. It presents a SWOT analysis while also proposing detailed strategic goals and operational and concrete pilot programmes.

The Local Revitalisation Plan for the years 2005-2013 adopted by the City Council in 2008 is a strategy for the revitalisation of economically and socially disadvantaged parts of the city as well as post-industrial and post-military areas. It covers 11% of Warsaw's area and 31% of its population. It has four sub-goals: the reinforcement of socio-economic development by raising the quality of public spaces, the promotion of entrepreneurship, the development of tourism and culture, increasing the security of inhabitants, the improvement of transport in housing estates and the integration of the population by counteracting social exclusion. The implementation of the Plan works through so-called micro-programmes in districts diagnosed as critical areas to tackle and solve identified problems.

Another document introduced by the City of Warsaw is the *Strategy of Sustainable Transportation System Development for the years 2007-2015*. The Strategy aims to modernise the existing road and public transport system as well as cycling lanes and walkways. The Strategy proposes a coordinating institution for public transport responsible for the entire Warsaw agglomeration while also stressing the necessity of comfortable intra-city metro and tramway transport system which is competitive in relation to private vehicles. In addition, it proposes the construction of two new underground lines, the introduction of a common ticket for all means of transport, the development of park-and-ride and bike-and-ride systems and an integrated traffic management system for the whole city.

Map 10. Warsaw metropolitan area development nodes



Source: T. Sławiński, Mazovian Office for Regional Planning, 2010, with kind permission by the author.

In 2011 a new study on a Spatial Development Plan for the Warsaw metropolitan area was prepared and adopted. The study is an impressive multi-disciplinary

analysis of social, economic and environmental trends and problems in the Warsaw metropolitan area as one of the fastest growing capital cities in central and eastern Europe but does not seem to come up with a fundamentally new concept for its future spatial development.

3.3. Comparison

In order to come to a conclusion on which of the three metropolitan areas is more successful in planning its long-term spatial development, the strategic documents of the three cities are compared with respect to nine criteria (see Table 3):

- *What strategic documents exist?* Only Paris and Warsaw have comprehensive plans for the spatial development of their whole metropolitan area. Berlin and Brandenburg have land use and regional plans only for their own territories.
- *Do the strategic documents have a long-term perspective?* The SDRIF and the Grand Paris project have 2030 as the target year. The State Development Programme and Plan of Berlin and Brandenburg do not state target years. The Warsaw Development Strategy of the City of Warsaw and the Development Strategy of the Mazovian Voivodship indicate 2020 as the target year.
- *Do competing strategic documents exist?* This is particularly relevant in the Paris region where the SDRIF and the Grand Paris project exist side by side, although efforts to reconcile them are underway. Similar conflicts can arise in the Berlin region between the separate land use and regional plans of Berlin and Brandenburg. No comparable conflicts seem to exist in the Warsaw region between the city of Warsaw and Mazovia.
- *Do the strategic documents address housing, transport and governance?* Population and housing are addressed in the strategic documents of all three cities. All three aim at improving the provision of affordable housing. Transport also plays a major role in the strategic documents of all three city regions: most spectacularly in Paris with the Grand Paris Express. Remarkably, governance issues are not treated explicitly, and are even avoided, in the existing strategic documents.
- *Do the strategic documents address the European dimension?* Neither the SDRIF nor the Grand Paris project address issues of territorial cohesion within France or indeed within Europe at large. For both schemes the further growth of the Paris metropolitan region is an unquestioned goal. In the Berlin case the predominance of Berlin in Germany is not an issue as the German urban system remains rather balanced. Of the strategic documents relating to Warsaw, the first Warsaw Strategy of 1998 in particular referred to the European dimension by postulating the transformation of Warsaw into a European metropolis competing with Prague, Budapest and Vienna. This European orientation was also taken up in the *Warsaw Development Strategies* of 2005 and 2011.

Table 3. Comparison of strategic documents

Issue	Paris	Berlin	Warsaw
What strategic documents exist?	Schéma Directeur de la Région de Ile-de-France, Grand Paris and Plan Local d'Urbanisme de Paris	State Development Plan (<i>Landesentwicklungsplan</i>) of Berlin-Brandenburg	Warsaw Development Strategy and Mazovian Voivodship Development Strategy
Do the strategic documents have a long-term perspective?	2030	---	2020
Are there competing/contradictory strategic documents?	Schéma Directeur de la Région de Ile-de-France and Grand Paris	Co-operation between Berlin and Brandenburg in the Joint Spatial Planning Department.	The co-operation between the City of Warsaw and the Mazovian Voivodship is without open conflicts.
Do the strategic documents address housing, transport and governance?	Housing and transport are prominent topics.	Housing and transport are prominent topics.	Housing and transport are prominent topics.
Do the strategic documents address the European dimension?	Both the SDRIF and the Grand Paris project address only the development of the Ile-de-France.	The <i>Landesentwicklungsplan</i> Berlin-Brandenburg examines the position of the region in European networks.	The Warsaw Strategy postulates the transformation of Warsaw into a European metropolis.
Do the strategic documents deal with goals and goal conflicts?	The SDRIF and the Plan Local d'Urbanisme de Paris address a comprehensive list of objectives. The Grand Paris project is growth-oriented. Goal conflicts are not discussed.	The Berlin planning documents propose economic, social and environmental goals, with an emphasis on social goals. Goal conflicts are not openly discussed.	The Warsaw Development Strategy lists a broad range of social, economic and sustainability objectives. Goal conflicts are not discussed.
Are the measures envisaged in the strategic documents innovative?	The Grand Paris project is innovative in its integration of land use and transport planning and by its magnitude.	The policies proposed in the strategic documents are well-known practices.	The policies proposed in the strategic documents are well-known practices.
Are the measures envisaged in the strategic documents operational and feasible?	The Grand Paris project is technically operational but in danger because of the huge investment it requires.	As most policies proposed in the strategic documents lie in the future, it is difficult to assess their feasibility.	As most policies proposed in the strategic documents lie in the future, it is difficult to assess their feasibility.
Have the strategic documents been publicly discussed?	The SDRIF and the Grand Paris project have been extensively discussed in public, in the media and on the Internet.	The State Development Plan Berlin-Brandenburg and the local plans of Berlin have been extensively discussed in public, in the media and on the Internet.	The Warsaw Development Strategy and the more recent strategic documents of the City of Warsaw have been extensively discussed in public, in the media and on the Internet.

- *Do the strategic documents deal with goals and goal conflicts?* The revised SDRIF of 2008 deals with new challenges, such as climate change, energy scarcity and growing social disparities as well as rising house prices in the suburbs. The *Plan Local d'Urbanisme de Paris* also mentions several goals. The Grand Paris project, however, seems to be only growth-oriented and does not explicitly address goal conflicts, such as the predominance of the

Paris region over all other regions in France. The Berlin planning documents, in particular the *BerlinStudie*, propose comprehensive lists of economic, social and environmental goals to be achieved, with more emphasis on social goals, such as tolerance, diversity, integration and equal opportunities, than in the French documents. The *Warsaw Development Strategy* of 2005 listed a broad range of objectives, such as quality of life and safety, fostering tradition, developing culture and stimulating social activity, developing a modern economy and achieving sustainable spatial order. However, as in almost all of the strategic documents reviewed, the conflicts between these goals are not discussed.

- *Are the measures envisaged in the strategic documents innovative?* The *Grand Paris* project is innovative in the sense that it integrates land use and transport planning based on extensive research and by its sheer magnitude. The *Landesentwicklungsplan* of Berlin and Brandenburg is innovative in that it downplays the role of the capital city and emphasises the role of secondary centres. All other strategic documents aim at well-known practices and solutions.
- *Are the measures envisaged in the strategic documents operational and feasible?* The *Grand Paris* project has strict operational implementation plans but is built on the expectation of growth in the French economy and the economy of the Paris region; so because of the major investment necessary its future prospects are somewhat uncertain. The other strategic documents have a more declamatory character by listing objectives and targets of varying detail and operability, but as many of the policies proposed lie in the future, it is difficult to assess their operability and feasibility.
- *Have the strategic documents been publicly discussed?* In all the metropolitan areas the strategic documents have been discussed extensively with the public, in the media and also over the Internet, as all responsible ministries, planning authorities as well as the *Société de Grand Paris* maintain websites from which most of the strategic documents discussed in this chapter can be downloaded.

3.4. Summary

In summary, Paris has the longest experience with visionary strategic planning and is also the most active in this field among the studied cities. The history of strategic planning in the Paris region from Haussmann's plan to the latest strategic documents displays a consistent, rationalist, top-down planning system which had, and is likely to continue to have in the future, a major impact on the spatial organisation of the wider Paris region. The drawback for the Paris region is the ongoing competition between the SDRIF and the *Grand Paris* project.

Berlin too has an impressive history of strategic planning from the *Hobrecht plan* to the *BerlinStudie*. However, after reunification, Berlin has significantly reduced its efforts to formulate long-term plans for the whole city instead concentrating on specific parts of the city and specific types of future problems. It remains to be seen whether this is a disadvantage or whether it represents a more successful strategy for a new type of metropolis for the 21st century.

Warsaw has, since the political and economic transition of 1989, successfully engaged in strategic planning taking account of the new challenges and opportunities of a market economy. However, it remains to be seen whether the region and city

governments will be able to harness the strong economic interests of developers and other economic stakeholders and mitigate urban sprawl.

It is perhaps disappointing that all three cities have paid little attention to existing European strategic documents on spatial planning, such as the Europe 2020 strategy (Europe 2020) or the Territorial Agenda 2020 (TA2020). This may however be explained by the fact that these European documents only became available after the most recent strategic documents of the three cities had already been issued. It may however also indicate that the European documents were simply not sufficiently relevant for the issues of spatial development at the metropolitan level. For instance, the growth objectives of Paris, Berlin and Warsaw might not be consistent with the cohesion or sustainability goals of the Territorial Agenda 2020, but could easily be defended by its objective to promote global competitiveness.

It is now possible to return to the question asked at the beginning of this chapter: Which of the three cities has applied in the past and is indeed currently applying the best combination of long-term strategic planning and short-term decision-making to achieve its desired spatial development?

It has become apparent that the three cities apply very different modes of strategic spatial planning, from rational top-down planning in the Paris region to pragmatic incremental decision-making in Berlin. Which combination along this spectrum is best for a metropolis of the 21st century depends on the dominant political goal of the metropolitan region. If worldwide competitiveness as a global city is the dominant goal then the Paris approach seems to be most efficient, but probably at the expense of other, social and environmental goals. If, however, a more complex vision of the metropolis of the 21st century, encompassing social and environmental goals, is pursued then probably a more bottom-up, participatory planning style would be preferable, though probably at the expense of economic growth.

In the absence of better evidence however, the recommendation must be that both Berlin and Warsaw should pay more attention to their long-term spatial development by following Paris in initiating a broad public debate about the spatial future of their metropolitan area.

4. Policy making and management of development processes

4.1. Introduction

Effective governance of metropolitan areas has been an important issue for more than four decades in development of cities and regions in Europe and in North America. Despite many attempts of introduction of new organizational and institutional arrangements no single European model of metropolitan governance has been worked out. Still, metropolitan governance remains a crucial issue for strengthening position of metropolises in globalized world and securing proper conditions for their social, economic and spatial development.

Combining dynamic economic development with social equity and territorial cohesion is an important and very necessary component of the EU2020 Strategy for “smart, sustainable and inclusive growth”. In sophisticated metropolitan systems local governments separately cannot deal with development challenges. Efficient governance must be multi-level and multi-dimensional to combine planning, economic and urban policies. It also requires new forms of cooperation, horizontal

and vertical, institutional (from local to national level) and widely participative. Different actors must be involved in formulation and implementation of suitable policies at metropolitan scale.

Paris, Berlin and Warsaw - all capital cities and metropolises - face similar development problems although the scale of them differs. The three metropolises are currently not capable of managing effectively development of the whole metropolitan area. In this chapter the three metropolises are compared from the perspective of approaches to and mechanism of guiding development processes.

There is a number of studies addressing the issue of metropolitan governance, that point out issues crucial for metropolises' development. Among them are: Cities for Citizens, OECD 2000 Report (with comparison of governance systems of different metropolitan areas), URBACT 2008-10 projects (JOINING FORCES, focused on multi-scale action, LUMASEC focused on land-use and economic development, NODUS focused on planning tools). Regional level is often treated as strategic one for action and political regulations (P. Le Galès, 1997) since European policies are usually implemented at this level with use of structural funds. The ESPON program addresses metropolitan governance problems at the level of FUA. According to studies performed by NORDREGIO (SEBco, about South Baltic cities, 2007), also medium-sized towns can together come up with efficient management scheme.

Reforms implemented in the 1980s were focused on setting institutional forms of governance at regional level. In the 1990s (the "Golden age" of metropolitan government reforms, Ch. Lefevre, 2001), many European cities of different size implemented new forms of cooperation. A top-down approach that led to consolidation of institutional power resulted in establishment of Greater London in 1999. Bottom-up approach could be identified in France and Italy; other mixed and flexible solutions (resulting from "new regionalism") appeared in Germany (H. Heinelt & D. Kübler, 2005). Most of solutions worked out in the past are not functional under contemporary conditions (with exception of London and Stuttgart, G. Pinson, 2005 for Italy and Spain, Ch. Lefevre, 2001, for Portugal). In Stuttgart and Hanover innovative metropolitan associations were instrumental for improved efficiency of governance (M. Walter-Roggs & M. Sojer, 2006).

4.2. Specific administrative contexts and current managing tools

The three metropolises are organized according to the similar three tier model of administrative subdivisions. While approaches to metropolitan governance in the three metropolises are very specific, challenges and barriers are often similar. In capital metropolises core cities are the strongest metropolitan actors. The role of regional governments is determined by systemic solutions implemented at the national level. In case of Berlin, the regional level (Land) possesses major competences concerning development planning and management. This is due to a stabilized federal and decentralized political system. In Paris, the regional government of Ile-de-France has strategic competences concerning planning, however the role of central government at this level is still very important. In case of Warsaw division of competences between the central city and region is very distinct: It is a duty of regional government to prepare plans of development for metropolitan area.

Administrative systems and modernization processes

In complex and unbalanced urban systems, strong intermediate institutional levels are crucial to manage development. The administrative modernization in the three metropolises takes form of devolution processes. France, along with historical Districts (since 1790) keeps an unusual local fragmentation (municipalities with strategic competences like land use planning or housing development). After national elections in 2012 a “third act of decentralisation” is being considered. On the contrary, Germany, with already powerful Länder, strongly reduced number of municipalities and, in 2001, enforced intermediate levels in Berlin (from 23 Bezirke to 12). In Poland, after collapse of the communist regime, the administrative frame (territorial subdivisions and public administration system) has been completely rebuilt, first in 1990 (self government at municipality level) and then in 1999, with larger and more powerful regions (from 49 to 16 voivodships) and sub-regional governments (county – powiat). Warsaw experienced a changing status, from an obligatory union of municipalities to a single municipality since 2002, with 18 districts - dzielnice.

4.3. Policies and main issues of metropolitan governance

Decentralization of power results in transfer of competencies from central to local levels. However, institutional framework does not always fit new concepts of division of power.

Spatial planning

Comprehensive regional planning in case of Paris metropolis was relatively efficient in the past. Contemporarily existing solutions hardly copes with spatial, social and functional complexity and fragmentation of powers. Complexity is lower in Berlin and Warsaw but risks of unbalanced development grow, in particular in Warsaw.

Three different systems

Paris has the most complete system of spatial planning. However, the system is not efficient enough to counteract existing disparities. The SDRIF (single French regional strategic planning scheme) sets up a comprehensive frame for regional and local development management. Interlinked district and local schemes contribute to better organized development but the impact on urban sprawl, social disparities or housing development is weakening, since most of related policies are formulated at the local level. In Berlin metropolis, no comprehensive planning exists at metropolitan nor at Land level despite cooperation between Berlin and Brandenburg Länder from 1996 on a common State development program and thematic projects (new airport location; polycentric development; regional centers, infrastructure), under a common “German Capital Region” label. In Warsaw metropolis, central city and region have their own planning documents. Warsaw’s planning documents do not address development issues of the whole metropolitan Neither Berlin nor Warsaw has effective instruments to control urban sprawl.

Berlin’s approach to development based on the rule of negotiations is not a substitute of comprehensive planning. Berlin’s approach to metropolitan development seems to be the most pragmatic taking into account political circumstances. In Paris, territorial reforms did not improve complicated allocation of powers, which hampers development of metropolitan projects despite existence of dedicated institutions and the Grand Paris project. Warsaw has still no cooperative tools of governance with surrounding municipalities.

Tools and institutions

In Paris metropolis regional government has worked with regional and Paris planning agencies (IAU IdF, APUR) on planning schemes (IAU IdF being in charge of the current SDRIF). The *2010 Grand Paris* law introduced top-down approach to planning. New instrument were designed to manage planning tasks: new EPA, local contracts (CDT) and a Grand Paris Society. In Berlin metropolis planning and development policies are handled by the Land. The two Länder (the Berlin Senate for Urban Development and the Brandenburg Ministry for Infrastructure and Agriculture) set in 1996 a Joint Spatial Planning Department, responsible for development strategies. In Warsaw, very initial steps were undertaken to manage metropolitan development. More efforts in terms of strategic and spatial planning are needed as well as more proactive approach of the central city.

Transport governance

Transport is managed at metropolitan scale in Paris and Berlin; in case of Warsaw there are no evidence of broader approach to transport development problems except introduction of “agglomeration ticket”. A public body (STIF, syndicate of transport Ile-de-France) - coming from the 1930' - is led by the Region since 2006 in Paris metropolis, gathering Départements and all the transport operators responsible for functioning, programming and investments (with some exceptions like Grand Paris Express project). In Berlin, the VBB (Verkehrsverbund Berlin-Brandenburg) manages network at FUA scale, while Warsaw metropolitan transport services are fragmented. Warsaw Transport Authority (Zarząd Transportu Miejskiego) manages subway, busses and streetcars. Private transport companies operate at the sub-regional and regional levels. Thus, ticket prices cannot be regulated (while a regional card exists in Paris from 1975).

Housing and urban renewal governance

In Paris, housing development is a municipal competence. Housing affordability and disparities in housing conditions prove inefficiency of instruments that are in possession of local governments (instrument to regulate a rent has been introduced in 2012). Berlin housing development management is also decentralized, but efficient regulation measures has been used for years. Warsaw, as a municipality, is responsible for meeting housing needs of its inhabitants, but is still poorly equipped with tools of regulation for housing provision.

All three metropolises implement policies of urban renewal. In case of Paris this is a massive undertaking implemented with use of top-down approach with local support (national *urban policies* implemented since 1979 with focus on *sensitive neighbourhoods*). Multi-level approach is also the case of Berlin: Federal Stadtumbau Ostprogramm implemented in cooperation with districts. This program is supported and complemented by municipal initiatives (IBA *cautious urban renewal* and *social city* in Berlin). In Warsaw a comprehensive and ambitious urban renewal program has been implemented from 2005.

4.4. The emerging metropolitan debate

To face the current and future metropolitan development problems and let common interests to be recognized a debate is needed to address issues like: the scope of competences, tasks, and responsibilities between the central government and the region (the case of Paris), and between the central city of metropolis and the region (cases of Paris and Warsaw). Berlin has demonstrated an ability to establish practical

arrangements with the Land of Brandenburg, however, the question of efficiency of metropolitan development management is still open.

Metropolitan development in national policies and metropolitan debates

In France the issue of metropolitan development was addressed first by DATAR in the 1960'. Balanced metropolitan development and the future of city regions was a main concern at the beginning, evolving towards interests in cooperation making metropolises more competitive. In case of Berlin the issue of metropolitan development could be, obviously, addressed after reunification of Germany. German metropolises involved in "Regions of the future" initiative (managed by IMD - Initiativkreis Metropolregionen Deutschland) are recognized officially regardless of being formally institutionalized. In Warsaw, the issue of metropolitan development was raised for the first time in 1997 by UMP (association: Union of Polish Metropolises, grouping 12 major Polish cities). The law on spatial planning enacted in 2003 calls for preparation of spatial development plans for metropolitan areas. These areas shall be delineated in a national strategic document called the Concept of Spatial Development of Poland (P. Swianiewicz, 2008).

Forms and intensity of metropolitan debates depend on capitals' situations. It is quite dynamic in Paris, after a 5 years metropolitan confrontation, 10 years of both institutional and informal initiatives and a standing inadequacy of devolution process. In Berlin the debate is definitely more peaceful. In Warsaw, relationships between public actors are not yet clearly defined and none of them is in the position to initiate and lead the debate.

Metropolitan scenes

In Paris, a severe conflict took place from 2008 up to 2012 between the Central State and the region. The conflict concerned metropolitan development visions and specific projects (Grand Paris project / regional scheme). The metropolitan development issue was raised 10 years ago by the city of Paris and was related to cooperation of Paris with municipalities from the metropolitan area. In 2008 top-down initiative re-introduced the central State in the arena bringing into the scene strategic confrontation of actors that have impact on metropolitan development. Elections from June 2012 changed the political scene in France and created conditions for the "3rd act of devolution" which will finally deal with metropolitan topics and Paris metropolis. Berlin' metropolitan area could have been managed as a one spatial and institutional entity since 1996 through a single large Land merging Berlin and Brandenburg. However, this idea was rejected in referendum. Instead a quite efficient institutional technical cooperation on strategic development topics was established.

The metropolitan debate in Warsaw has a very political nature and has not yet produced any commonly acceptable solutions. A metropolitan debate, prompted by suburbs, emerged in the 1990s with, in 1998, a claim from 8 suburban mayors for a Warsaw Metropolitan Council including representatives of municipal governments. In 2000, a similar proposal for Warsaw and suburban municipalities prepared by the association "Warsaw Metropolis" (a group of local mayors) wasn't more successful. The current metropolitan debate involves local, regional and national actors, however without tangible results up today.

4.5. Mobilization of metropolitan systems of actors

There are no official, initially accepted, publically known and discussed proposal for metropolitan governance in Paris, Berlin and Warsaw metropolises. The only

exception is exercised for several years technical cooperation between Berlin and Brandenburg. There are examples of soft cooperation between regional and city's authorities taking a form of consultations or information exchange, however, they are far from any type of model of cooperation. Creating a metropolitan authority, as suggested many times in Warsaw, is one among many solutions expressed by policy makers from metropolises (in Paris by Paris Métropole and its "Green book on governance". Both in Paris and Warsaw there are studies under way and ongoing discussion on future metropolises' status. Polish Ministry of Regional Development is actively engaged in activities focused on delimitation of functional urban areas to facilitate implementation of the new national urban policy, which is also under preparation. This way regional governments are forced to be interested in metropolitan issues, since the new urban policy will be related to and have impact on their own regional development strategies and plans.

Disparities of different kind are a common concern in the three metropolises, even more visible and growing in the wealthy Paris metropolis. The region provides subsidies for local facilities and support shared economic development initiatives, but there is no regional financial equalization in favour of poorer areas. In 2011, Paris Métropole prepared (with IAU support) a proposal to establish more efficient fiscal instrument to increase regional solidarity. In Warsaw, efforts are more focused on sharing charges of social services, while, in Berlin, due to limited public budgets, an efficient financial equalization instrument has been worked out at a federal level (2002-09 Stadtumbau Ostprogramm). Allocation of public resources in order to give incentives for more evenly distributed development is in all metropolises difficult problem. Therefore, an official frame will be necessary to make metropolitan management efficient.

Cooperation between public and private actors

Cooperation with private actors is of strategic importance for development and should be present in day-to-day operation of governments, in particular in case of preparation and implementation of economic development plans and specific investments i.e. networks of technical infrastructure. Cooperation, formal and institutionalized or more spontaneous and informal, has become a part of activities to manage economic development at the local level as well as the at metropolitan scale.

Cooperation with private sector is especially important in the context of financial situation of local and regional governments. Berlin has a heavy public debt and has received federal support through Stadtumbau OstProgramm. EU subsidies (and additional support from EEA – European Economic Areas) are crucial for Warsaw development. Even the wealthy Paris metropolis restricts expenses. Therefore, ambitious projects of Paris (such as 2025 Grand Paris transport network) may be postponed or their scale reduced. Public authorities experiment with private financing instruments for equipments (hospital, prisons, etc.) or infrastructure. In Berlin and Warsaw metropolis, whose financial needs (urban and technical renewal) exceed resources (limited in Berlin, probably decreasing in 2013 in Warsaw through new redistribution of EU subsidies), Public Private Partnership might become a common practice, prompted by the EU commission. This instrument is discussed in France (its long term cost, problem of lower public control). Financial engineering tools for public projects (in France, after Dexia bankruptcy there was a need for public bank for territorial authorities, bond issued by public sector, etc.) and means of public control will be in all the three metropolises a crucial issues in the future, in particular in Warsaw, whose redevelopment is largely supported by private investments.

Public regulations are also a delicate matter for urban technical services. Modernization increases usually prices of services. As former East Länder, Brandenburg lost population and consumption decreased, with growing territorial disparities between areas with renewed and private big firms and others with smaller firms and lower quality of service. In Paris metropolis and other French cities, high prices also may lead to return to public service delivery (water, solid waste disposal).

Cooperation with communities and NGOs

The way metropolitan problems are discussed publically depends a lot on democratic culture. In that field, Berlin is a step ahead having a rich experience with social participation in preparation and implementation of plans of urban reconstruction. IBA “cautious urban renewal and the Stadtforum” has become a model of local project governance used all around Germany and in Europe. Furthermore, the participation rate for the 1996 referendum on Berlin Brandenburg merger was at the level of 67%. On the contrary, Warsaw, in on its way in building actively solid basis for social participation. It concerns both the city and regional level. The city of Warsaw has established the Social Communication Center, which is in charge of organization of consultations and other events involving inhabitants. Participatory planning and governance is becoming a popular habit and citizens are very eager to use this new opportunity to have influence on things happening in the city and in the metroplith area. Paris goes between a habit of centralized technocratic debate and local citizen participation about urban renewal. The law imposes public inquiries and debates about major projects (numerous citizens’, associations’ and stakeholders’ contributions for SDRIF 2008 revision and for two simultaneous inquiries on State- and Region transport projects in 2009) but big size of region is a real barrier to public debates.

Instruments for a public involvement

In addition to IBA approach, local consultation may be innovative: website debates by Plaine Commune inter-municipality, Paris City’ Pavillon de l’Arsenal’ exhibitions and website or 2010 exhibition around the international consultation on the “Post Kyoto” Grand Pari(s). This free prospective exercise had a huge public and media impact through impressive images. Warsaw has been developing new instruments to facilitate social participation and public debates. The Center for Social Communication, depending on the city’s authorities, facilitates involvement of citizens in solving local and supra-local problems. Electronic media allow citizen information and opinion collection (“Warsaw’s barometer” on different issues and problems, which are vital for citizens). Compared to the past, the situation is changing rapidly.

4.6. Main results for Paris, Berlin and Warsaw, comparison and typology

Experiences of Paris, Berlin and Warsaw metropolises in terms of governance practices may be compared to each other and with regard to other European metropolises, in order to assess their position in an international search for best solutions. A typological comparison on metropolitan approaches should help summarize analysis and procure elements on European trends.

Challenges and major incentives for better metropolitan governance	<p>Paris: global city, with difficult internal and external challenges (cohesion, competitiveness)</p> <p>Berlin: capital, economic development center, shared local visions supports inner convergence, external development challenges of lower pressure</p>
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<p>In metropolises factors of change of administrative structures, institutional frameworks and organizational solutions are of endogenous and exogenous nature (endogenous e.g. cohesion, quality of life; exogenous e.g. attractiveness, ompetitiveness)</p>	<p>Warsaw: dynamic economic center, pressure of recent exogenous investments, with opportunities for redevelopment; strong need for but also strong inner needs => Paris: challenges lead to acute power relations but may set more ambitious final goals if divergences are overcome =>Berlin: without too conflicting interests and through its negotiation habits, easier conditions to deal with inner challenges =>Warsaw: under impact of external dynamic driving forces, while its internal situation (development potential, living conditions, urban fabric, technical infrastructure) needs improvements and cooperation</p>
<p>Ability of current institutional system and usefulness of existing tools to perform metropolitan governance functions</p> <p>Main determinants for an upgrade of institutional framework: strong vertical links and leadership to manage metropolitan challenges, local cooperation, suitable financial measures. Main factors to strengthen metropolitan dynamics: citizenry legitimacy through consultation, mobilization of other actors (mainly those involved in economic sphere).</p>	<p>Paris: comprehensive but complicated framework and mechanisms (tools, financial measures), conflicting leadership, weak local cooperation, medium legitimacy and professional mobilization. Berlin: strong FUA institutional leadership (2 Länder) and citizens' legitimacy, thematic approach and no comprehensive policy making Warsaw weak framework for cooperation at metropolitan scale, local cooperation is still difficult (core city/suburb), lack of leadership, legitimacy and mobilization. External subsidies (EU, private investors) support development but don't contribute efficiently to fulfilment of current needs in terms of improvement of living conditions and functioning of the metropolis as an one spatial unit. => Berlin seems to be the most adaptable to metropolitan new governance scheme when it is proposed. => Paris needs to simplify its administrative framework, clarify issues of competences in order to strengthen leadership that will help with larger mobilization of endogenous resources and to obtain financial resources for development that leads to metropolitan cohesion. => Warsaw, in a new dynamic situation, has to improve its local and regional framework for better institutional cooperation, to develop new collaborative instruments with private sector.</p>
<p>Current dynamics supporting future progresses</p> <p>Debates and innovative initiatives as well as experiments are the most productive ways towards better governance.</p>	<p>Paris: involved in a strategic debate among administrative powers on main challenges; appearance of growing ability to generate common development visions (Paris Métropole) and use comprehensive approaches to management of large projects. Berlin: involved for two decades in practical institutional experiment but the debate on more global metropolitan challenges not vivid. Warsaw: still no practical experiment and a still fragile debate. => Berlin is advanced with its cooperative activities but metropolitan debate stands weak and unclear about new challenges. => Paris is very active in innovative debate (Paris Métropole) and first experiences (Grand Paris device, DATAR calls for metropolitan projects) and could set the most ambitious metropolitan governance if different visions are gathered in a legitimate body. => Warsaw stands at starting level and has probably organizational priorities to deal with but its situation is dynamic and could help clear vision of the future.</p>

Potential metropolitan improvements in Paris, Berlin and Warsaw

Paris, Berlin and Warsaw – because of specific determinants of their development and ways they are being governed – face similar challenges but the scale of these challenges is different, and ways, as well as possibilities, to address them are different depending on approaches to and practice of governance. Conditions for emerging metropolitan governance in these specific contexts are related to institutional improvements, management styles (more flexibility and cooperation).

Looking at the three metropolises and at the current European metropolitan experience, reforms of legal framework might be needed to make possible establishment of effective governing bodies. These reforms should be followed by

introduction of specific national mechanisms related to financial aspects of metropolises' functioning. It might be a pretty near future of Paris, if metropolitan actors (and the central State) reach agreement on future metropolitan development. Berlin can easily move ahead by starting a debate on vision and challenges that bring together different metropolitan actors. Warsaw should also start with a more open debate on general metropolitan issues that are important for many actors and then continue the debate searching ways of institutional improvements.

European types of metropolitan governance may help describing these evolutions. Stuttgart and Lyon (see the Scientific Report) succeed in large involvement of developers in building together vision and common tools for managing and implementation. Local citizen involvement may be seen in Berlin and sometimes in Paris. Metropolitan bodies exist in many European metropolises (Stuttgart, Barcelone, Helsinki, etc.) and also operate in France (Lyon). Increased inter-municipal cooperation is a strong need in Paris, many French tools for planning and programming may also be interesting for Berlin and Warsaw, while Paris learned from Berlin tool for rent regulation or IBA. Join comprehensive planning and project management at a metropolitan scale, which is a main concern in Paris, could also be useful for Warsaw, involved in many local projects without strong means of regulation. With regard to previous European typologies, mixed solutions seem to be suitable, with progressive implementation along with the starting point of each metropolis.

5. Benchmarks

5.1. Introduction

The process of identifying the evaluation criteria referring to the development state and development potential of a contemporary European metropolis (a *Best metropolis*) which constitutes the point of comparison of Paris, Berlin and Warsaw was based on two ideas:

- their embeddedness in the context of European development tracks and challenges;
- their usability (universality versus specificity, complexity, comparability etc).

The current European development strategy EU2020 (2010) sets out three main goals in respect of the Union's performance: smart, sustainable and inclusive growth. According to these principles European cities, as the engines of growth, should be the carriers of education and innovation, characterised by a strong and sustainable industrial base, offering modern and flexible labour markets, and a business environment which strengthens their attractiveness as the locations of workplaces and places of residence. At the same time metropolisation processes should respect the natural environment, which includes the promotion of energy efficiency and the modernisation of the transport sector (compare: EU2020, p. 32). While the EU2020 refers to cities as those subjects which determine (and create) Europe's attractiveness, the Territorial Agenda of the EU (2007) stresses the issue of territorial cohesion, locating its priorities in the development of balanced and polycentric urban systems, securing parity of access to infrastructure and knowledge, as well as sustainable development, prudent management and the protection of nature and cultural heritage. Although the latter document in the main addresses a wider territorial dimension than that of metropolitan areas, the role of cities and city regions is sought in the development of innovative, European-wide networks, which determine their competitiveness, understood as individual success on a global scale.

Deriving from the above, the evaluation criteria address social, economic, infrastructural, political and environmental issues which concern the performance of European cities at various regional scales, as well as the state, the trends and the dynamics of the ongoing processes. The benchmarks identified allow us to estimate the position of the respective cities in various territorial dimensions, as well as in comparison with the other two cities.

In order to elaborate a possibly comprehensive and comparable set of measures (criteria) consisting of more detailed components, additional assumptions were made. The criteria to be identified were to:

- refer both to the spatial structure of the metropolis and its immediate hinterland – metropolitan area, and the type of interactions (linkages) taking place within the areas;
- address the functions performed by the metropolis and the metropolitan area, as well as the way the ‘metropolitanised’ territories were managed and governed;
- concern both the endogenous and exogenous potential of the metropolis and the metropolitan area;
- include the dynamic aspect of metropolitan development, reflecting both state and trends.

5.2. Benchmarking criteria

Five of the selected ‘yardsticks’ are basic components of the projects’ analyses. The two additional criteria constitute aspects which complement the ‘requirements’ set for ‘best metropolises’. According to the above points of comparison the following seven ‘best criteria’ were identified:

1. Strengths of the base for economic development: highly diversified economic base, with prominent role for creative industries and functions; dynamic and open labour market; key position in the European urban system;
2. Attractiveness in terms of working and living conditions: rational location of places of residence and jobs; polycentric pattern of spatial development – avoidance of urban sprawl; living conditions meet needs and expectations of inhabitants;
3. Labour force potential & diversified socio-spatial structures: balanced demographic structure or rejuvenation; decreasing social segregation in space via integrated local community development;
4. Multi-dimension accessibility: physical accessibility of different parts of the metropolis is high because of the well-developed system of transportation; intra-metropolitan daily mobility enabled by multi-modal public transit systems; decreasing car dependency and traffic congestion;
5. Multi-level governance: planning in long-term perspective; efficient management of development processes; enabling strategic planning at the scale of the metropolitan area, or, preferably, the urban region scale; proactive, anticipatory and participatory governance approaches;
6. Environmentally sustainable: effective control leading to a decrease in environmental conflicts and other dysfunctions; protection and improvement of green infrastructure as well as of landscape quality; resource efficiency;

7. Adequate availability of services of general interest due to long-term pragmatic spatial planning which complies with the location of residential areas and other functional areas within the metropolises' boundaries.

The identified criteria allow for an evaluation of the metropolitan areas with respect to development goals often viewed as being opposed to each other, e.g. the strengthening of growth engines and polycentric development, while referring to the components of urban development and metropolisation processes in terms of their sustainability, which combines economic, social and environmental objectives in the shorter and longer term perspective.

The first two criteria address the attractiveness and competitiveness aspect of the metropolis in the broader: national and international (1) and narrower: local and regional (2) territorial dimension, issues focused on in EU2020 and the Territorial Agenda. At the same time, criterion 1 constitutes the level of overall metropolis' evaluation. It refers to the economic performance of the metropolitan area (reflected by GDP level, distribution of workplaces, structure of the economy – share of the creative sector), the type and range of its metropolitan functions (specialisation and specificity), and simultaneously, to the effect of this performance as reflected in the position of the city in the European urban system. The distinguishing of the current state, development trends and development potential allows for an evaluation in the dynamic sense, i.e. including historic conditions, present performance and perspectives.

Criterion 2 addresses the local and regional aspect of the city's attractiveness as a place of residence and work, as well as the development of its metropolitan area. In the latter respect it allows for the evaluation of the area in terms of its spatial structure (level of morphological polycentricity) and linkages (functional polycentricity). The point of comparison refers to the positives of suburbanisation, and the negatives of urban sprawl – evaluating the processes and their consequences, as well as the way they are coped with by the existing urban policy and programmes. This criterion also relates to the phenomenon of the affordability of housing; the distance between needs, possibilities, demand and supply, as well as programmes supporting the sustainable development of the housing market.

The third criterion refers to the development of socio-spatial structures within the metropolitan areas; population trends, diversity versus homogeneity, economic performance and the emergence of new social categories and intra-metropolitan migration patterns. In general, this predominantly qualitative measure defines the place of the respective metropolis with regard to global trends in terms of population development.

The fourth 'yardstick' allows for an evaluation of the metropolis with respect to the efficiency of its transportation system and transportation infrastructure at the local and metropolitan scale. The criterion constitutes a point of comparison with regard to daily-basis linkages within metropolitan areas; their duration, range and character.

The criterion referring to governance practices and policies allows for a comparison to be made of policy-making and strategic planning from the perspective of their efficiency and adequateness in tackling existing problems while also being a point of reference for the evaluation of governance directed at an integrated development, understood as a manifold idea.

The inclusion of the last two criteria identified is critical from the long-term development perspective. The quality of the natural environment and the absence of

conflicts between diverse land-uses are necessary conditions for sustaining an adequate level of attractiveness and, hence, the competitiveness of metropolises and metropolitan areas. It may also be assumed that the role of environmental resources such as accessibility to services of general interest will be subject to steady growth for the foreseeable future. It is therefore strongly recommended that these issues be embraced within the context of the benchmarking analysis in future studies.

The specific features which serve for the assessment of “the best metropolis” are selected in line with the following dimensions which correspond to the criteria listed (Fig. 2).

Fig. 2. Benchmarking criteria and specific dimensions.

CRITERIA	DIMENSION
Strengths of base for economic development	Economic base and functions
	Position in urban systems
Attractiveness in terms of working and living conditions	Intra-metropolitan polycentricity
	Spatial structure and land use change
	Housing affordability
Labour force potential & diversified socio-spatial structures	Demographic trends
	Socio-spatial structures
	Intra-metropolitan migration
Multi-dimension accessibility	Transport efficiency
	Commuting / daily mobility
Multi-level governance	Strategic planning & policy making
	Governance efficiency

The quantitative and qualitative analyses performed during the project aimed to provide explanations for the current state and the paths of evolution in respect of metropolitan structures, while also identifying the potentials of and challenges to their development. In order to assess and to position the three metropolises, the aforementioned dimensions of “the best metropolis” were classified, using a set of features (Fig. 2). As quantitative measures cannot be used to assess performance in most cases, the qualitative assessment was used on the basis of research outcomes. This operationalisation of “the best features” allows an indication of the position of metropolises to be made, while also avoiding indicating sharp / exact limits and precise numbers in respect of what is the best.

Fig. 3. Benchmarking dimensions and features.

DIMENSION	FEATURE	QUALITY	
Economic base and functions	GDP per capita ¹¹	High	Low
	GDP	Growing	Declining
	Distribution of working places	Dispersion	Concentration
	Role of creative industries	Important	Low
Position in urban systems	Position in European urban system	Global city	European City
	National urban system	Equal position	Dominant position
Intra-metropolitan polycentricity	Level of polycentricity	Polycentric	Monocentric
Spatial structure and land use change	Urban pattern	Concentration	Sprawl
Housing affordability	Living conditions	High	Low
Demographic trends	Population	Growth	Decline
	Demographic structure	Labour force potential	Ageing
	Evolution of demographic structure	Stable	Change
Socio-spatial structures	Social differentiation	High	Low
	Socio-spatial segregation	'Mixity'	Segregation
	Ethnic diversity	Low	High
Intra-metropolitan migration	Relation between inflows and outflows	Inflow	Outflow
	Spatial distribution	Dispersion	Concentration
Transport efficiency	Pattern of technical transport infrastructure	Spiders web	Radial
	Public Transport	Good	Poor
	Share of car trips	Low	High
	Congestion level	Low	High
Commuting / daily mobility	Commuting flows	Spiders web	Radial
	Distances of daily mobility	Short	Long
Strategic planning & policy making	Strategic plans and their content / scope	Many / complex approach	Few / cover only few themes
	Level of strategic planning	Metropolitan	City
	Policies supporting innovation	Many	Few
	Policies for urban renewal / regeneration	Many	Few
	Policies affecting affordability	Many / complex	Few
	Urban policies to reduce disparities	Many	Few
	Policies supporting reduction of use of car	Many	Few

¹¹ GDP *per capita* and GDP change were assessed on the basis of common (for three cities/metropolitan areas) statistics (Gross domestic product (GDP) per inhabitant, in purchasing power standard (PPS), by NUTS 2 regions, 2008 (in percentage of EU-27=100), Eurostat regional yearbook 2011).

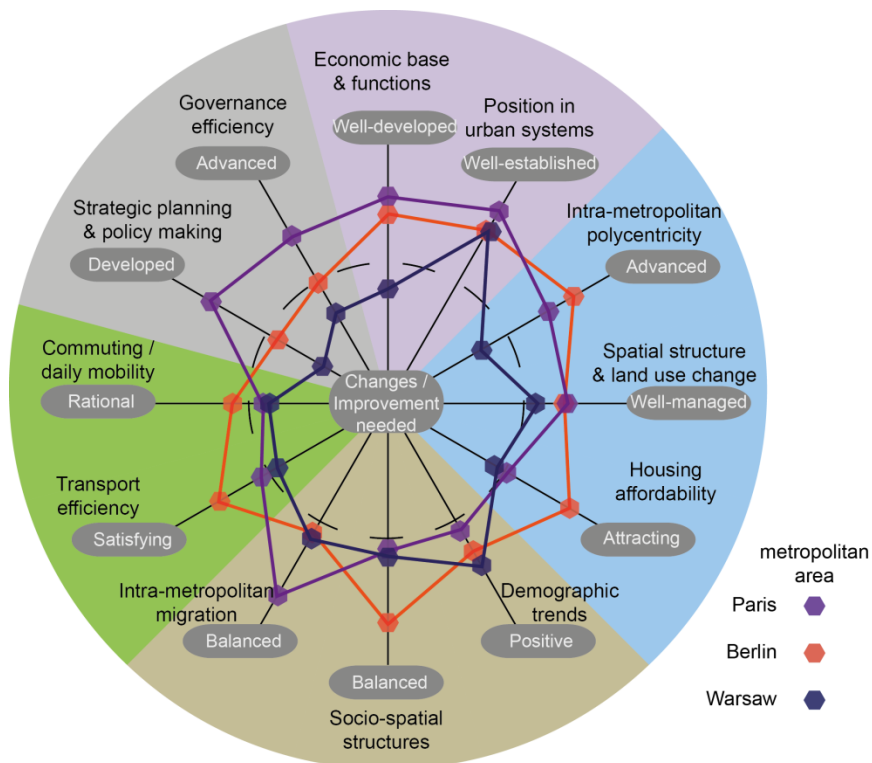
Governance efficiency	Level of horizontal cooperation	High	Low
	Level of vertical cooperation	High	Low
	Level of inhabitants' participation	High	Low

5.3. Comparison

Each of the three metropolises was then assessed in relation to the features listed using three separate scales: core city, metropolitan areas without core city and the entire metropolitan area. These three spatial scales enabled us to look carefully at the differences and disparities (in selected themes) between the core cities and their surroundings which were then crucial in further elaborating a set of policy recommendations. In some cases, certain features were not applicable at a specific spatial scale and were omitted (i.e. position in European urban system of metropolitan area without the core city). The detailed results of this assessment are displayed in the Scientific Report (chapter 10).

The positioning of each metropolitan area was then assessed from another perspective in order to indicate how much effort the metropolitan areas should make to maintain or improve the current position within each thematic field (dimension). Considering the fact that important disparities in performance do exist between metropolitan areas and core cities, the comparisons between these two types of units are presented in two separate diagrams (Fig.4, Fig. 5).

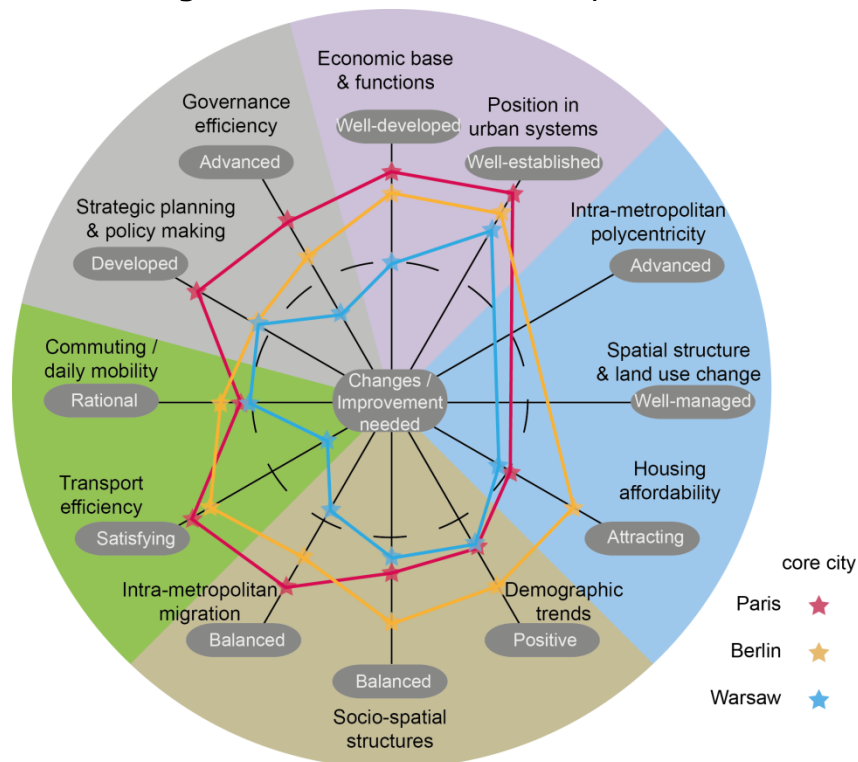
Fig. 4. Benchmarking for the metropolitan areas of Paris, Berlin and Warsaw.



The results of the project prove that there are some similarities in the development paths of the three metropolises, although their central cities and surrounding areas are each very different. Because of the differences between the core cities and their surrounding areas and the internal differentiation of the metropolitan areas, the comparison of the three metropolises presented a rather challenging task. Further

population growth is observed in all three metropolises; however, the suburban areas grow much faster than the other parts of the metropolises. Common features of migration patterns exist with centrifugal population displacement direction prevalence, strengthening the classic process of residential suburbanisation. Differences between metropolises, if they exist, are the result of individual histories of development, the level of socio-economic development, or from the traditional pattern of migration processes.

Fig. 5. Benchmarking for the core cities of Paris, Berlin and Warsaw.



In the case of **economic base and functions**, Paris holds the leading position, followed by Berlin and then Warsaw. Warsaw is a growth pole metropolis with almost all metropolitan and other economic functions located in the city. Although all three metropolises play important roles in the urban systems, the internal pattern of settlement within the borders of these metropolitan areas are substantially different.

Despite the fact that attempts were made to develop more a **polycentric metropolitan area**, the position of the core city of Paris has still not been counterbalanced. The Berlin metropolis is a rather monocentric structure but the relations between the core city and the sub-centres are not as hierarchical as in case of Warsaw. The level of polycentricity in the case of Warsaw is relatively low mainly because settlement units outside Warsaw are too small and weak to play a role as urban centres complementing Warsaw's functions. The process of urban sprawl reinforced recently in Warsaw metropolis due to the increase housing costs revealed the inefficiency of current policies.

The attractiveness of metropolises as places that offer good working and living opportunities changes within metropolitan borders. Though, it ought to be highlighted that the benchmarking assessment which is based on average notes and measures, mitigate this intra-metropolitan diversity. The nature and scale of housing problems differ between the Paris and Warsaw metropolises, nevertheless, both of them have to cope with the provision of affordable housing but for different target

groups. This is undoubtedly a more difficult challenge for Warsaw metropolis since the set of available instruments to deal with it is relatively limited in comparison to that possessed by Paris.

Regarding the **potential of the workforce**, the Berlin and Warsaw metropolises are characterised by the best demographic structures, with an overrepresentation of population in working and pre-working age. However, the problems presented by an ageing population are also present, particularly in the core city of Warsaw and in certain districts of Paris. These demographic structures undergo changes due to natural change as well as **intra-metropolitan migrations**. The latter should be analysed from two perspectives: as the exchange between the core city and its surrounding areas, and as migrations among urban sub-centres within the metropolitan area. Adapting this approach, the crucial issue is to ensure balanced migration between the areas considered. The aforementioned mobility induces the modification of existing socio-spatial structures and is seen to generate socio-spatial segregation. In the case of Paris, the geographical isolation of low income households continues; in Berlin, an attractive core city encourages newcomers with different origins which may trigger segregation. These processes are not visible at the same scale in Warsaw; however, other types of segregation appear, related primarily to the emergence of gated and guarded housing estates. Thus, all three metropolises struggle with unbalanced socio-spatial structures and different scales of social segregation but with each shaped by different, local circumstances.

Between the three metropolises studied, Berlin could be regarded as having the most efficient transport infrastructure ensuring **multi-dimension accessibility** both at the scale of the core city and at the metropolitan level. Paris suffers from high congestion rates and lacks additional links between suburban areas but this situation will have been successfully addressed once the Arc Express infrastructure is completed. The weakest position of the three is that of Warsaw which is associated with the radial configuration of its transport infrastructure, the moderate level of accessibility in terms of public transport, the lack of additional underground lines and motorway ring-roads leading to it having the highest level of congestion in a comparison of all European cities.

In the case of **multi-level governance** described through strategic planning and policy making as well as governance efficiency, the assessment level is in all cases lower than that of the same dimensions for the central cities. This illustrates the essence of the problem: there remains a fundamental lack of effective mechanisms to bring together governments from the central cities with those of their surrounding municipalities. All three metropolises lack efficient multilevel governance systems to help secure sustainable development.

Comparing the three core cities - according to the already distinguished dimensions - one may state that in relation to the issue of economic base and functions the dominant position of Paris as a global metropolis is clear. Our results confirm those of other classifications and typologies, which place Berlin a little lower on the scale and Warsaw in the position of a metropolis of regional importance.

The **attractiveness** of the core city in terms of working and living opportunities varies. The position of Warsaw in the dimension "housing affordability" should be treated as a warning for policy makers as the city should undoubtedly focus more on the provision of dwellings for rent focusing primarily on the city's younger inhabitants or newcomers. In terms of housing, Berlin's position is rather more satisfactory when compared to the other two. More attention and a greater level of intervention may however be necessary in Paris.

As has already been claimed, **labour force potential and the diversification of socio-spatial structures** are mainly shaped by the volume of migration, its quality and distribution. Historical heritage is also an important factor that shapes current socio-spatial structures and hampers their change, as for instance it is traditionally the case that wealthy areas continue to attract affluent inhabitants. On the other hand, a more dynamic social composition is apparent in the districts which are subject to changes in living conditions (i.e. through urban renewal projects, up-grading, the construction of new estates or other functional conversions) which make them accessible to wider groups of the population.

The disparities among the three core cities are even more pronounced in the case of **multi-dimensional accessibility** as Paris and Berlin are much better served by public transportation systems. These systems have been developed over many decades and integrated with transportation systems from areas surrounding the central cities. The underdevelopment of the transportation system in the Warsaw case is an inheritance from the period before 1990 and many undertakings have been initiated to improve the situation which explains the position of Warsaw on the next axis describing transport efficiency.

It was difficult to assess the last two dimensions: strategic planning and policy making and governance efficiency within the criteria of **multilevel governance**. In the first case there is a clear discrepancy between the legal framework for strategic planning and policy making and the practice that is translated into decisions and their implementation. There are many reasons for this in the three cities with most being deeply rooted in their individual histories, their role in European and global settlement systems, and in the political system they have functioned under. Paris and Berlin have for decades exercised democratic rules of governance despite specific changes in regulations concerning planning and management systems. In the case of Warsaw the metropolitan dimension of development has become an important issue only very recently. Additionally, as in the case of other post-communist countries, territorial self government has a relatively short history after its rebirth. New administrative structures established after 1990 must be complemented with a culture of cooperation among the different tiers of government and among the municipalities from metropolitan area.

In conclusion, Paris and Berlin share many common features while Warsaw still suffers from the period under a communist regime which is particularly visible in the case of technical infrastructure development. The urban fabric, although evolving, still bears a significant inheritance from the past. It should however be stressed here that in the field of policy making (including participatory process of planning) Warsaw has already made enormous progress.

The analysis conducted here led to the conclusion that the spatial regional context of metropolises' development ultimately plays a very important role in their functioning. Social and economic phenomena and processes are the result of the historical development of the regions (bigger than FUAs) the central cities and the relations between them. The areas surrounding the central cities have emerged as a result of such inter-relations at the city – region level. These relationships are however becoming less important since central cities are now increasingly engaged in supranational networks and the performance of such metropolises depends on appropriate solutions that facilitate the coherent management of functionally integrated central cities and the areas surrounding them.

6. Toolbox

The aim of the toolbox is to provide policy makers with ideas on mechanisms and instruments to deal with the problems of metropolitan development. The use of policy tools has become more frequent and every strategy or master plan typically identifies a set of policy actions to cope with problems. The toolbox should be seen as a heuristic device designed to identify policy goals, policy coalitions, and the mechanisms of decision making as well as governance solutions for specific problems.

6.1. Megatrends and main drivers

The development of metropolises is a sophisticated and multidimensional process. However, in all cases one may distinguish a set of common main factors that stimulate their development. Regardless of their history or other geographic, economic or social determinants the reasons for their development are: ongoing urbanisation, globalisation of economic development, changes in modes of governance and management and innovations in the sphere of urban life i.e. changes in the technologies used to serve cities and their inhabitants.

Metropolitan development is determined by both **endogenous and exogenous factors**. The impact of government from the various tiers of governance on exogenous factors is, however, very limited. In the case of endogenous factors their impact may however be rather larger. Governments can use various tools to guide development processes or at least to have impact on them while invariably depending on the system of governance and the structure of public administration. They determine the allocation of powers and responsibilities that are translated into regulations concerning inter-governmental financial transfers. Additionally, specific national legal regulations limit or broaden the scope of activity from the various tiers of government. Although metropolises are self-governing entities in some cases central governments see the necessity of intervention regardless of whether a national urban policy exists or not.

Although the simple transfer of experience from one institutional setting to another is not really possible it is worth mentioning that in most cases normative tools are used to deal with development problems. These tools are laws and regulations concerning the functioning of local government and the ways in which such actors perform their functions, i.e. spatial planning, programmes and projects that serve development purposes. "Soft tools" predominantly used in communication / information exchange are also popular. According to this approach better results can be achieved if goals, objectives and funding are aligned across jurisdictions and agencies and between different tiers of government.

Table. 4

DRIVER	PRESSURE	STATE	IMPACT	RESPONSE
ongoing urbanisation, population growth and increasing attractiveness of metropolises as locations of residential and economic functions	increased migration flows, rising demand for land development, rising demand for housing and social services, necessity of technical infrastructure development	functional urban areas established, high intensity of land use; functional conflicts in peri-urban zones, mixture of functions with dominance of specialised functions, social mixture, new socio-spatial structures	increased population density, complex spatial and functional structures, spatial and functional conflicts	predominantly normative tools – laws and rules to guide development processes in usually fragmented - in terms of allocation of competencies and responsibilities - environment
globalisation and metropolisation of the world economy	appearance of DFI, competitive labour market, pressure on undeveloped attractive land to accommodate new investments; migrations	new structure of metropolises' economy; new socio-spatial structures, functioning in metropolitan networks	weak connections of metropolises with regional hinterland, strong impact of exogenous factors on development processes, "metropolitan economy" often not capable of absorbing local labour force, development of new housing meeting expectations of metropolitan class (including expats); rising social disparities	limited response; usually normative tools (land use planning), institutional tools (agencies dealing with economic development)
devolution and decentralisation	development plans focused on particular interests of actors (local governments, other agents of change i.e. private investors); acquisition of undeveloped land	fragmentation of competencies and responsibilities; uncoordinated development, non-rational use of available resources.	negative phenomena related to spatial development (urban sprawl); decreasing quality of life, formation of "good" and "bad" areas within metropolis's borders	Normative tools, usually planning instruments (including programmes and projects), economic regulations (financial incentives)
technologies of "urban life"	urbanisation pressure, concentration of economic activities, concentration of population, wider range of impact of urbanisation on natural resources	rising area of urbanised land, loss of natural environment resources; strong functional relationships among parts of metropolises	new opportunities to use more intensively urbanised area; increased mobility of population and businesses	normative tools: land use planning, management tools: contracting, public private partnerships, local governments agreements, contracting services

6.2. Policy recommendations

1. The future of metropolises depends to a large extent on their position in the network of cities at the global, national, and regional scale. In order to maintain and / or strengthen their positions within these networks it is necessary to **efficiently use their specific assets** and specific geographic location.
2. Metropolises are often capital cities; this fact places them in a specific position within a framework of development policies that are formulated at the national, regional and local (city) levels. **National policies** take into account the unique situation of metropolises and can be adjusted to, and **harmonised with**, development policies elaborated by the authorities responsible for **metropolitan development**.
3. In order to efficiently guide the development processes of metropolises a reliable, well developed **metropolitan data base** is urgently needed. The main metropolitan actors should be involved in the effort to gather comprehensive data on FUA development.
4. **New institutional and organisational solutions** need to be worked out in order to ensure the sustainable development of metropolises. A robust legal framework is needed to clearly define the roles and responsibilities of the various actors that are active on the metropolitan scene such as planners and policy makers.
5. In order to maintain or enhance the development potential of metropolises a **more balanced distribution of economic activities** is required. Such a distribution contributes to territorial cohesion and provides development opportunities to the most peripheral and sometimes neglected parts of these metropolitan areas as well as providing much needed opportunities for their inhabitants.
6. **Intra-metropolitan polycentricity** in development is required to reduce unnecessary movements of people and goods and to create a more balanced metropolitan structure. However, the level of polycentricity is not strictly defined as it depends significantly on specific, internal conditions. Polycentricity should thus be considered as a solution to maintain the whole region and to limit the scale of urban sprawl.
7. The further development of the transport infrastructure and the **integration of different modes of transport** are also crucial for the sustainable development of metropolises. Policy making mechanisms and legal conditions should be structured and formulated in such a way that enables close cooperation between local governments in regards to the preparation of plans and investments and their implementation. The partnership approach is required in order to foster efficient collaboration.
8. Housing policy should attract more attention from the public authorities. The public debate on housing policy should be initiated and different actors (public authorities, developers, tenants, etc.,) ought to participate in this debate. Issues such as the **development of social housing, the provision of land for housing development and the correct financial mechanisms to support investments in housing** have to be addressed from the perspective of contemporary conditions and current challenges. In order to reduce socio-spatial differentiation within metropolises it is important to ensure that housing designed for different income groups is distributed across the various parts of these metropolises.
9. **Energy-efficiency in newly constructed buildings** should become a standard in housing construction. New locations for housing should be considered from the perspective of a polycentric model of the spatial

development of metropolises while also taking into account the pattern of technical as well as social infrastructure systems to ensure that newly developed areas are well served.

10. The development of the central cities in metropolises should focus on maintaining high living standards. **Urban renewal projects** ought to be an **integral part of development policies** as a measure that may, both directly and indirectly, influence the distribution of inhabitants, migrations flows and the formation of social structures. Participatory approaches to the development of plans, programmes and projects at the local level are highly recommended.
11. Specific tools and bodies are required to build **comprehensive development strategies** and set regulation in order to counter metropolitan disparities and territorial imbalances. New ways of establishing a common vision may be seen in other metropolises (Lyon, Stuttgart), which involve all the actors (and not only major institutions) in an understanding of metropolitan challenges and dedicated solutions. Depending on the context, it could be supported by a specific arrangement between major authorities or a new metropolitan body: the first step should be a common understanding which emerges from an open debate. An official framework may be necessary to ensure the necessary financial arrangements in particular.
12. Metropolitan **tools to coordinate major thematic sectoral policies** should be introduced. For the main fields of metropolitan policies such as transport, housing, social or economic development, it is unlikely that long term efficiency can be attained without dedicated instruments. In any case, these metropolitan policies must be designed in relation to a thorough and ongoing process of **local public consultation** of both the public and private actors in charge of its application. National rules may also be necessary (for instance, in respect of the balanced distribution of social housing).
13. The efficient **metropolitan distribution of financial resources** is a condition for more balanced metropolitan development. Better financial intra-metropolitan redistribution, as sought in Paris metropolis and a better distribution of EU subsidies in favour of metropolitan areas, as desired in Warsaw, are other suitable solutions. In addition, the issue of how best to collaborate with private investors to promote long term investments and preserve collective interest is becoming central.
14. No single tool can ensure the practical implementation of general recommendations even from within a metropolitan planning document. Solutions may also be diversified: **prescriptive spatial planning** (imposed density of population, criteria for location of businesses, intensity of use of natural resources) **central city areas' renewal**; alternative housing offer (provided through better transport service); policies focused on the protection of areas used for agriculture (legal constraints).

6.3. Policy options

In this section the most important development problems of the three metropolises are addressed from the perspective of potential policy options designed to cope with these problems.

Problem of urban sprawl

The process of urban sprawl, as with other processes and phenomena in the three metropolises, has an altogether different magnitude from that in other cities. However, in all three cases urban sprawl constitutes a problem that has a significant impact on the functioning of metropolises. In Paris urban sprawl is a question that

should be addressed through an integrated approach to the development of smaller urban centres, the location of housing functions and the development of the transport infrastructure. Such an integrated approach might be achieved *via* the further facilitation of cooperation at the level of technical management and the harmonisation of development plans (transport infrastructure might be a good example of efficient integrative efforts). In the case of Berlin the possibility of using available land within the central city's borders will be used to limit sprawl. In addition, further cooperation between the planning authorities of Berlin and Brandenburg, as practiced thus far, could prove instrumental in reducing the scale of urban sprawl. The situation of Warsaw seems to be the most complex. In this case a debate on the metropolitan dimension of development processes should be initiated and facilitated by representatives of the central city of the metropolitan area. The establishment of a working group that will be in charge of the preparation of concepts such as how to conduct a diagnosis of the current state of the Warsaw Metropolitan Area's development, the identification of the main development bottlenecks and the formulation of propositions in respect of the future directions of development is very much required. The future land use plan for the whole area should be the product of consensus and be inclusive of the various stakeholders from across the metropolitan area. The problem of urban sprawl itself cannot be solved in isolation and must be addressed in a systemic manner.

Deconcentration of population

The "limits to growth" spatial development model should be considered for adoption in the development policies of the metropolises. The location of new jobs in the suburban areas should be in line with strategic geography guidelines (already implemented in the IDF region) in order to produce a more polycentric structure in respect of working and living places. Financial tools to encourage a more polycentric metropolitan structure are indispensable (the opportunities presented by the EU funds should also be considered in this context). Functional linkages between nodes and hubs within the polycentric structure should be promoted (see the example of Brandenburg with regard to R&D activities). In addition, the development of public transport in inclusive labour markets should be supported by multi-modal transportation systems.

Concentration of immigrants from abroad

This issue should be tackled at metropolitan and local scale (neighbourhood scale). At the metropolitan scale, dedicated programmes of social integration should go together with the broader offer of affordable housing in order to promote more dispersed settlement and to reduce the risk of social exclusion (see the example of French policy for social 'mixity'). And at the local scale through other types of activities within social policy that will act to counter social exclusion in respect of immigrants (e.g. educational programmes).

Problem of social segregation

Housing development policies' key component should be the delivery of apartments for people with diversified incomes in different parts of cities and their districts. Incentives for developers (or strict rules) to differentiate their offer of apartments for different socio-economic groups ought to be introduced both at the regional and local levels. The more diversified offer of dwellings for rent, especially for young people should be encouraged (Warsaw could benefit from Berlin's programmes).

Ageing of population

The range of health care and social care services (including new locations for facilities) should be extended while transport accessibility should also be improved, in particular by adapting facilities for disabled persons. The training of social workers to meet the needs of the elderly and the promotion of healthy lifestyles ought to be a part of any programme dealing with the problems of an ageing population. Incentives for those caring for the elderly (tax deductions, discounts communications, etc.) need to be worked out. Educational programmes that promote family values and solidarity across generations need to be developed and implemented.

Rising congestion

New incentives to relocate jobs outside crowded city centres should be a key element of all economic and spatial development policies. Such policies must however be accompanied by improved conditions for the operation of public transport, particularly rail. Further development of "park & ride" systems is needed (especially in Warsaw where the experiences of other cities might be helpful). The rule that transport infrastructure planning depends on the settlement policy should be established. In order to achieve not only high levels of accessibility (respectively connectivity) but a smart transport system for metropolitan areas, it is not sufficient to provide good transport infrastructure only for individual transport. Instead low congestion and environmentally friendly transport can only be implemented in the context of a multimodal public transport network which is not restricted to the city but includes wider parts of the metropolitan area (as in the Berlin example).

Regaining urban space

Urban renewal policies should be incorporated into the development plans of metropolises. The streamlining of policies makes them more efficient. Urban renewal policy should be coordinated closely with other policies formulated by local governments and elaborated together with specialised agencies. The establishment of a coordinating, intermediating across-sector-overseeing agency or individual is highly recommended to assure comprehensive planning and the coordinated handling of different actors' interests.

Participatory planning

To strengthen social participation, the involvement of affected stakeholders from the very beginning can reduce the problem of 'NIMBYism'. Since metropolitan development problems are faced by different social groups it is important to involve the key actors and give them all a voice. A specific mechanism of facilitation in this case might also be required. This might correspond to an adequate hierarchy of objectives and goals listed in the strategic and planning documents which should favour the involvement of local societies and not just of the most powerful actors.

Broadening coalitions for development

It might make sense for a local government to foster communication with major local private-sector players, both in an ad-hoc and in a strategic way. Local authorities collectively should use corporate social responsibility (CSR) in their communication with big companies and encourage enterprises to follow the guidelines established by the CSR.

Comprehensive approach to development

It is important to improve knowledge management in public administration (improve capacity building, communication, information, cooperation etc., in order to foster the integration of different sectors and thus to engage in comprehensive thinking). Related to this, it is crucial to integrate policy fields at the local level, this is a recommendation for cases where there is no such thing or cross-sectoral planning is not yet developed. It is also important to stabilise existing or established governance networks and to ensure their long-term survival and flexible support; perpetuate structure where it makes sense, advocacy building for useful governance structures (also in times of financial constraints).

Relations with central government

National decision making and the political regulation system (federal, decentralised, centralised, etc.) have influenced the structure of power and institutional competences in their dealings with metropolitan development. Furthermore, national programmes and national investments remain crucial in the development potential of metropolises. Instruments like time-limited grants, subsidies, or programmes are appropriate means to generate an impulse for development in the less attractive parts of metropolitan areas.

7. Research recommendations

Suggested further research activities result from completed studies on the three metropolises. Based on the experience gathered under the Best Metropolises project it can be stated that there is definitely a need for further research on positioning and on the modes of functioning of contemporary metropolises in the European space. Future investigations should focus on the **financial aspects of the functioning of metropolises**. There are several strong arguments for this type of study provided in our report, e.g. the organisation and cost of public transport service provision, financial arrangements among local governments as an instrument for the implementation of common undertakings. Inter-governmental transfers and financial conditions of municipalities and larger administrative bodies and organisations created for the purpose of development management should be investigated. The efficiency of instruments that could support the common development efforts of both public and private entities could be another topic for future research. Secondly, it is essential for contemporary metropolis development to adapt proper **modes of devolution of power**, to facilitate decentralisation processes and to create appropriate institutional and organisational arrangements within the public administration structure. Thirdly, in our analysis we attempted to develop the **typology of living conditions for metropolises**. We faced several problems related to the lack of comparable and essential data (e.g. household incomes in the case of Warsaw). Moreover, some of the basic processes which influence living conditions were excluded from the scope of the Best Metropolises project, namely, the level of environmental quality and availability and accessibility of services of general interest. Therefore, further investigations should be structured in a way that allows for the preparation of a typology including the environmental dimension as well as the level of social infrastructure development. Furthermore, in cases where the data needs were satisfied, the proposed typology under the Best Metropolises should be verified or, based on new, comprehensive data sources, prepared again. These new data sources are, among other things, the results of national censuses, which should allow for the more detailed spatial analysis of processes and phenomena (even at the level of particular census tracts). The second option is to further develop the methodology of the EU-SILC questionnaire in a very detailed, spatially disaggregated manner. Additionally, the original datasets delivered by the EU-SILC survey could be

a base for positioning European metropolises in terms of living conditions, which could also be one future direction for the research effort. Moreover, there is a possibility to combine the research fields encompassed by the Best Metropolises and SeGI ESPON projects, particularly as regards comparing European metropolises using methodology developed within the SeGI project. Finally, **the impact of ecological conversion** has not yet been analysed in terms of urban management at a practical level. In addition, some crucial questions in respect of metropolis development remain, such as, to what extent the development of renewable energy would contribute to the evolution of contemporary urban structure and what would the likely influence be of sustainable transport on our metropolises' future development paths.

Glossary

TERM	DEFINITION
accessibility	the "potential for interaction" through means of transport, in particular public transport; it determines the advantage of one location (city or district) over another and ability for individual mobility across the urban area
affordability of housing	ratio between economic indicators (e.g. housing costs) and the income per household; it is assumed that not more than 30% of the household' expenditures should be spent for housing
affordable housing	provision of housing for low income families
backcasting (roll-back)	answer to the question: what needs to be done to achieve a certain future development?
centrifugal movement of population	movement of population from the centre to the periphery (e.g. suburbanisation)
city	urban places in general, without reference to their functional position within (inter)national urban systems
city-region	city with functionally related hinterland (here criteria of limitation are not defined); term used to emphasise that an area is larger than the 'city' in its administrative borders
commuters	people who travel regularly between the place of residence and the place of work, e.g. in-commuters – those who travel from hinterland to workplace in core (central city); out-commuters – those who travel from core to workplace in hinterland
demographic change	evolution of population in terms of global amount (growth / stability / decline) being the result of natural increase (death and birth rates), fertility rates and net migration
peri-urbanisation governance	type of urbanisation taking place at a considerable distance from the city form of management containing policy making process, which engages different partners from public and other sectors as well as from different levels of governance who cooperate in order to reach consensus on issues related to development processes; based on partnership
job accessibility	spatial accessibility of workplaces dependent on transportation infrastructure
life quality	a multidimensional indicator reflecting physical, material, social and emotional wellbeing
living conditions	aspects of daily life affected by a variety of mostly physical, material and social factors, including housing conditions and housing environment
metropolis	big city of national, European, or global significance with enlarged functional urban area
metropolitan area	urban area of metropolis – analytical understanding
metropolitan attractiveness	characteristic of metropolis (metropolitan area) connected with the performance of metropolitan functions
metropolitan governance	form of governance applied to a complex, functionally integrated area where numerous local governments operate; based on innovative decision making process which brings together governments from the area and other actors (NGOs, representatives of private sector, etc.) in order to secure appropriate

metropolitan polycentrism	decisions concerning development of the whole area
Metropolitan Public Transport Management	metropolitan structure with a de-concentration of urban functions; existence of secondary (second order) centres within the urban area
metropolitan region	the way in which metropolitan public transportation infrastructure and services are managed by different operators
metropolitan suburban structuration	term used with focus on political-normative dimension, with reference to the coordinative, strategic and institutional characteristics within spatial planning; term usually referred to a city and its wide functional hinterland
metropolitan technical governance	formation of suburban areas around the core-city, emergence of lower level urban centres, which offer jobs, services and urban amenities for large suburban surroundings
Metropolitan Transportation System	management of services mainly connected with operation of technical and social infrastructure; exercised through collaboration of public and private entities in order to ensure a long term sustainable efficiency of services delivery
metropolisation	system with a multimodal, integrative and functional focus; integrates individual transport, subway, tram, bus and rail
mobility	continuous process of coining the functional (higher order, specialised functions) and morphological (structure of area) characteristics of metropolitan areas
modal split policy	capability of moving or being moved from place to place, measured by actual movement, either number of trips or total kilometres travelled
public participation	share of travellers using a particular type of transportation
urban regeneration	principle or rule to guide decisions and achieve rational outcomes; components of a strategy that allow to implement it
residential mobility	public engagement which involves citizens, private actors, associative, political, institutional and professional representatives, experts, etc. (special form: 'social participation' which concerns the engagement in local projects)
scenario	economic redevelopment connected with improvements of urban fabrics, continuous adjustment to changing economic and social development conditions; result of technical obsolescence and multidimensional urban degradation
social housing	displacement of population aimed at permanent relocation; takes the form of construction or purchase of flat (house)
socio-spatial differentiation	quantitative or qualitative presentation of an imagined future development of a city, metropolitan area or region
spatial segregation	housing provided by government agencies or non-profit organisations for population with low incomes or particular needs; its provision and institutions vary according to country and city
strategic document	spatial distribution of social groups within a metropolitan area
strategic planning	physical separation of inhabitants associated primarily with their social and economic status, nationality, ethnicity or religion; reflected in spatial concentration of inhabitants with the same specific social or economic characteristics, may contribute to social exclusion
suburbanisation	official publication of a city, metropolitan area, region or country on planned strategies
transportation sustainability	long-term, comprehensive planning concept, as opposed to short-term, incremental decision making
urban development urban policy	type of urbanisation manifesting itself by relatively rapid development and growing importance of the suburban zone
	condition in which the overall benefits generated by the transportation system exceed the overall costs, contributing to balanced socio-economic development and environmental issues
	development of cities and their intra-urban structures
	term used to describe policy implemented at regional and/or national level concerning urban issues

urban renewal	complex process of functional and technical adjustment of urban infrastructure initiated by public authorities in order to solve economic and social problems and to facilitate development processes
urban sprawl	type of suburbanisation consisting of a chaotic (irregular), spontaneous spread of various types of buildings (mostly residential and service facilities) in a centrifugal direction from the city borders, often along the major roads and on natural and rural areas
urbanisation vision	growth of urban areas; (also) change of share of urban areas in the total area desired future urban development, in particular visual or verbal presentation of such development

Abbreviations / acronyms used

AIGP	Atelier International du Grand Paris (international Grand Paris workshop)
ANRU	Agence National de Rénovation Urbaine (National Agency for Urban Renewal)
AFL	Allocation de logement familial (housing benefit for families)
ALS	Allocation de logement sociale (social housing benefit)
ANAH	Agence Nationale pour l'Amélioration de l'Habitat (National Agency for Housing Improvement)
APL	Aide personnalisée au logement (housing allowance)
APS	Advanced Producer Services
APUR	Atelier Parisien d'Urbanisme (Paris City Planning Agency)
BBI	Berlin-Brandenburg International (airport Berlin-Schönefeld)
BRIC	Brasilia, Russia, India and China
BVG	Berliner Verkehrsbetriebe (Berlin Transport Company)
CAEE	ESPON project: The case for agglomeration economies in Europe
CDC	Caisse des Dépôts et Consignations (public bank)
CDT	Contrat de Développement Territorial (Contract for Territorial Development)
CSO	Główny Urząd Statystyczny (Central Statistical Office)
CTP	Common Transport Policy
DALO	Droit au Logement Opposable (Enforceable Right to Housing)
DATAR	Délégation à l'Aménagement du Territoire et de l'Action Régionale (National Agency for Territorial Management and Regional Action)
DB	Deutsche Bahn (German Railway)
DGCL	Direction Générale des Collectivités Locales (French National Department for Territorial Institutions)
DDR	Deutsche Demokratische Republik (former East Germany)
DTA	Directive Territoriale d'Aménagement (Territorial Planning Directive)
Dz.U.	Dziennik Ustaw (Journal of Laws of the Republic of Poland)
EDF	Electricité de France (French electricity public firm)
ENL	Enquête Nationale Logement (national housing inquiry)
EPA	Établissement Public d'Aménagement (Urban Management Public Body)
EPCI	Etablissement Public de Coopération Intercommunale (Public Establishment for Inter-municipal Cooperation)
EPFIF	Établissement Public Foncier d'Île-de-France (Île-de-France Public Land-buyer Establishment)
ESH	Entreprises Sociales pour l'Habitat (Social Enterprises for Housing)
EU-SILC	EU-Statistics on Income and Living Conditions
FMI	Fonds Monétaire International (International Monetary Fund)
FRG	Federal Republic of Germany
FUA	Functional Urban Area
GaWC	Globalization and World City Study Group and Network
GDP	Gross Domestic Product
GDR	German Democratic Republic
GHG	greenhouse gas
GNC	global network connectivity
GPRU	Grand Project de Renouvellement Urbain (Large Urban Renewal Programme of Paris city)
HLM	Habitation à Loyer Modéré (low rent social housing)
HWWI	Hamburgisches WeltWirtschafts Institut (Hamburg Institute of International Economics)
IAU IDF	Institut d'Aménagement et d'Urbanisme Île-de-France (Île-de-France <i>Institute</i> of territorial planning)
IBA	Internationale BauAusstellung (international building exhibition)
IDF	Île-de-France
IFTGS	Île-de-France Transport Global Survey
IKM	Initiativkreise Europäische Metropolregionen (Network of European Metropolitan Regions in

	Germany)
INSEE	Institut National de la Statistique et des Études Économiques (National Institute for Statistics and Economic Studies)
KM	Koleje Mazowieckie (Mazovian Railways)
LEP	Landesentwicklungsplan (State Development plan) or Landesentwicklungsprogramm (State Development Programme)
MDM	Marszałkowska Dzielnica Mieszkaniowa (Marszałkowska Housing District)
METREX	Network of European Metropolitan Regions and Areas
METROBORDER	ESPO Project: Cross-Border Polycentric Metropolitan Regions
MORP	Mazovia operational regional programme
MOS	Mode d'occupation du sol (land use map)
NIMBY	Not in my back yard
NQU	Nouveau Quartier Urbain (sustainable new neighbourhood, only in IDF)
OIN	Opération d'Intérêt National (national interest area)
ÖPNV	Öffentlicher Personennahverkehr (Public local passenger transport)
OREAM	Organisation d'Etudes d'Aménagement des Aires Métropolitaines (Study agency on metropolitan areas urban management)
ORS	Observatoire Régional de la Santé (regional health observatory)
PADD	Programme d'Aménagement et de Développement Durable (sustainable planning and development programme)
PADOG	Plan d'Aménagement et d'Organisation Générale de la Région Parisienne (urban planning and comprehensive organization document)
PDUIF	<i>Plan de Déplacements Urbains</i> d'IDF (Urban Mobility Plan for IDF)
PKP	Polskie Koleje Państwowe (Polish Public Railways)
PLAI	Prêt locatif aidé d'intégration (rental loan aimed at social integration)
PLH	Programme Local de l'Habitat (housing local programme)
PLI	Prêt Locatif Intermédiaire (intermediate rental loans)
PLS	Prêt locatif social (rental social housing loan)
PLU	Plan Local d'Urbanisme (local urban planning document)
PLUS	Prêt locatif à usage social (rental loan for social purpose)
POLYCE	ESPO project: Metropolisation and Polycentric Development in Central Europe: Evidence Based Strategic Options
PPP	public-private partnership
PPS	Purchasing Power Standard
PZT	Prêt à taux zero (free interest loan)
R&D	research and development
RATP	Régie Autonome des Transports Parisiens (autonomous public operator of Parisian transports)
RER	Réseau Express Régional (regional high speed transport network)
RP	Recensement de la Population (population census)
RER	Réseau Express Régional (high speed regional transport network)
RIS	Regional Innovation Strategy
RUL	Région Urbaine de Lyon (Lyon urban regional area)
SCOT	Schéma de cohérence territoriale (intermunicipal strategic planning document)
SDAU	Schéma Directeur d'Aménagement et d'Urbanisme (Strategic Urban and Regional Planning Scheme)
SDRIF	Schéma Directeur de la Région Ile-de-France (Strategic Regional Scheme for IDF)
SEM	Société d'Économie Mixte (public-private society for urban planning management and implementation)
SGP	Société du Grand Paris (Grand Paris Society)
SME	Small and Medium-Sized Enterprises
SNCF	Société Nationale des Chemins de Fer Français (French National Railway Corporation)
SRU Law	Loi Solidarité et Renouvellement Urbain (Solidarity and urban renewal Law)
StEP	Stadtentwicklungsplan Berlin (urban development plan of Berlin)
STIF	Syndicat des Transports d'Ile-de-France (Transport Regional Trade or Syndicate)
TA2020	Territorial Agenda 2020
TRACC	ESPO project: Transport Accessibility at Regional/Local Scale and Patterns in Europe
UMP	Unia Metropolii Polskich (Union of Polish metropolises)
UMZ	Urban Morphological Zone
URBAN	EU programme for revitalisation of cities and neighbourhoods in crisis
URSS	Union des Républiques Socialistes Soviétiques (Union of Soviet Socialist Republics- USSR)
VAT	Value Added Tax
VBB	Verkehrsverbund Berlin-Brandenburg (Transport Association of Berlin-Brandenburg)
VEFA	Vente en l'état Futur d'Achèvement (housing sale on plans)
VRS	Verband Region Stuttgart (Union of Stuttgart Region)
WKD	Warszawska Kolej Dojazdowa (Warsaw Commuter Railway)
WMS	Wirtschaftsförderung Region Stuttgart (regional economic assistance of Stuttgart Region)

ZFU	Zone Franche Urbaine (Urban Free Zone)
ZRU	Zone de Redynamisation Urbaine (Urban Redevelopment Area)
ZTM	Zarząd Transportu Miejskiego (Public Transport Authority of Warsaw)
ZUS	Zone Urbaine Sensible (Sensitive Urban Area)

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The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ISBN 978-2-919777-08-2