METREX
The network of
European Metropolitan Regions and Areas

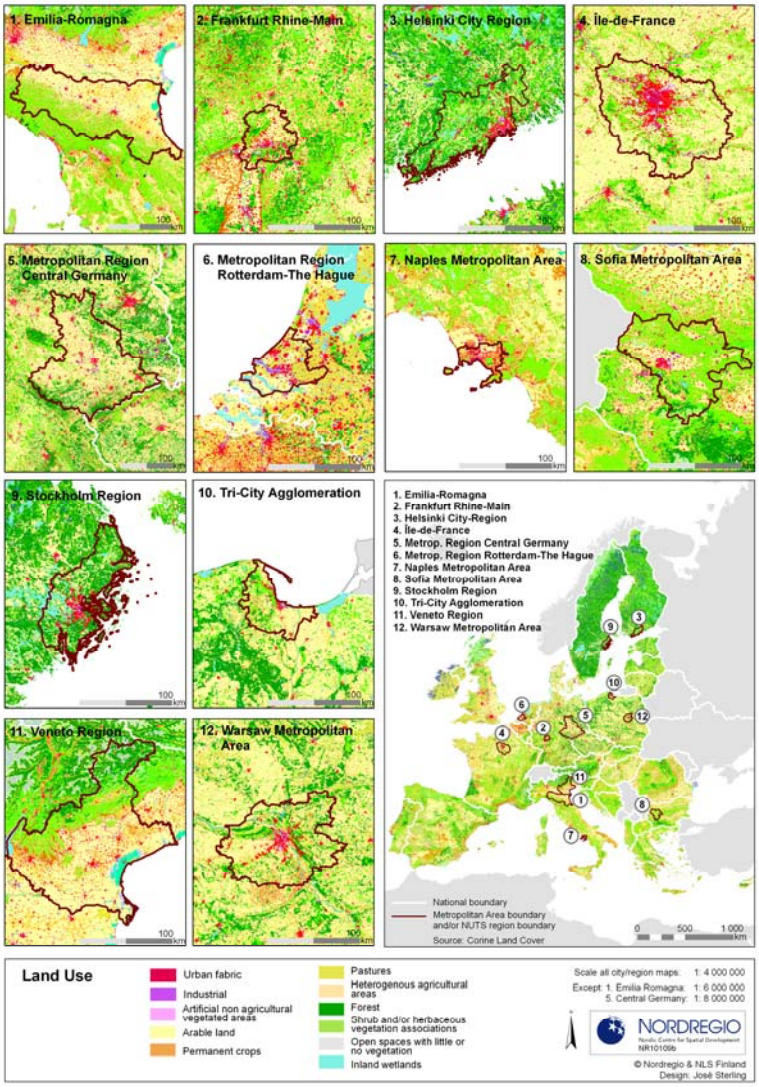
Intra-metropolitan polycentricity in practice -

Reflections, challenges and conclusions

from 12 European metropolitan areas

Final report of the METREX - Expert Group

on Intra-Metropolitan Polycentricity



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Preface

This report summarises the intense work undertaken over an 18-month period by the METREX Expert Group on Intra-Metropolitan Polycentricity (IMP) set up in early 2009 on the initiative of the Regional Planning Office, Stockholm County Council, to discuss the complex concept of polycentricity.

As chair of this group I must take this opportunity to express my gratitude to all parties who have been regular members of the Expert Group and who have spent a considerable amount of time sharing their knowledge of polycentricity. Either by filling in the questionnaires circulated or by enthusiastically taking part in the many discussions we have had in this group. You will find a list of participants, including contact details, appended to the report.

Our special thanks should go to Roger Read and METREX, who made it possible to set up the Expert Group and who also generously contributed financially. Others who have contributed financially include the City of Stockholm, the Regional Planning Office in Stockholm and Nordregio, the Nordic Centre for Spatial Development.

As the Expert Group grew to become much larger than originally anticipated Nordregio was contracted to lend their expertise and to act as facilitators. Our special thanks here go to Peter Schmitt and Susan Brockett for their professional input throughout the whole process of the Expert Group leading up to this report.

Finally thanks also to those who have hosted workshops as part of the METREX meetings (Paris, Vilnius, Berlin) or as extra meetings in between (Sofia, Leipzig).

No single understanding or interpretation of polycentricity exists. There are instead many different ways of understanding this concept. You will quickly see this when reading the report. The report itself reflects the diversity of the participating metropolitan regions. It is also important to understand that the report is not scientific in character but rather something that reflects the views of the participating practitioners.

Stockholm, September 2010
Hans Hede
Chair, METREX Expert Group Intra-Metropolitan Polycentricity

Some statements from members of the Expert Group:

"Intra-metropolitan polycentricity (IMP) can help to maintain urban settlements in a more efficient and sustainable way. However, across Europe, there are hardly any corresponding governance capacities in place in order to deal with IMP."

"We have learned to assess our spatial planning methodology from other European colleagues' points of view.

"Polycentric development is apparently a common public policy objective in European metropolitan areas today, but it means very different things, considering the original monocentric or already achieved polycentric structure, but also the pace of economic and demographic growth."

"We need to retain such differentiated views of our metropolitan areas as those adopted in our group due to their complex polycentric structures – also the EU should stop reducing such realties by promoting the static and problematic NUTS system."

"The work done inside the Expert Group has provided strong evidence for the concept of polycentricity within metropolitan areas not only connected to spatial planning, but also as a useful governance concept in order to better direct social, economic and institutional processes."

"Intra-metropolitan polycentricity tends to become more complex the more you discuss it in a context with other metropolitan regions."

"IMP is a multifaceted concept, as it can be interpreted and applied in different ways in different spatial settings."

"Its context sensitivity is particularly eye-catching when trying to compare IMP issues in metropolitan areas. Hence such Expert Groups are indispensable if one wants to organise meaningful knowledge transfer between spatial planners on this topic."

Executive Summary

- This report summarises the intense work undertaken over an 18-month period by the METREX Expert Group on Intra-Metropolitan Polycentricity (IMP) set up in early 2009 on the initiative of the Regional Planning Office, Stockholm County Council.
- Spatial planners from twelve metropolitan areas across Europe (Emilia-Romagna, Frankfurt Rhine-Main, Helsinki City-Region, Île-de-France, Metropolitan Region Central Germany, Metropolitan Region Rotterdam - The Hague, Naples Metropolitan Area, Sofia Metropolitan Area, Stockholm Region, Tri-City Agglomeration, Veneto Region, Warsaw Metropolitan Area) were gathered together to distinguish and further explore three thematic strands deemed to be closely related to the concept of polycentricity 'within' metropolitan areas. These were a) *Metropolitan Governance and the Implementation of Plans and Policies*, b) *Urban Sprawl and Climate Change Response* and c) *Economic Competitiveness and Functional Labour Division between Centres*.
- The central objective was to identify major challenges, to reflect current methods, practices, routines and debates and to share lessons and experiences with regard to the performance, applicability and implementation of the concept of polycentricty in the respective metropolitan areas represented in the group.
- A brief survey of the academic debate on 'intra-metropolitan polycentricity' has revealed that the available literature pinpoints what we need to know and what is difficult to assess or even to measure. There is however little hope for the emergence of a grand theory explaining specifically what intra-metropolitan polycentricity is and how it differs from monocentricity. What is clear however is that there are different dimensions associated with the notion of intra-metropolitan polycentricity along with the observation that the 12 metropolitan areas that we have studied have seen very different development-paths and dynamics (due to varying historical, geopolitical and socio-economic circumstances). This means that we have to deal with various types of intra-metropolitan polycentricity which present a challenge to both physical planning and the development and growth of appropriate governance systems.
- One of the Expert Group's major concerns has been the generation of a mutual level of understanding in respect of the specific and highly context-sensitive polycentric setting of each of the twelve metropolitan areas. As a consequence of this vital discussion within the group, and for the purposes of this report, twelve brief portraits, one for each of the participating metropolitan areas were elaborated (cf. Appendix C). Based on these portraits, the understandings that emerged from the academic debate on the notion of intra-metropolitan polycentricty (IMP) and the discussions we had in the context of this group, we have identified five basic characteristics (socio-economic dynamic, policy response, functional territorial layout, spatial scope and governance

system) for differentiating IMP. These have allowed us to develop three typologies for the respective metropolitan areas that are represented by the Expert Group. They have proved to be very useful in categorising their different qualities in order to understand these polycentric metropolitan areas as dynamic systems and to make it easier to undertake meaningful communication about them.

- The major conclusions of this report have been derived from the inputs generated by the members of the Expert Group through a number of questionnaires and mutual discussions in our, in total, five workshops. This means they are solely based on the spatial planners' perceptions, reflections and experiences.

In total they are <u>four central messages</u> that the group want to address:

1) There are **a number of key preconditions for the application of IMP**, such as to understand that IMP is a long-term strategy, which means that the involved stakeholders need to be patient. There is also a clear need to understand market mechanisms better, particularly their potential territorial impacts. In addition, commonly shared views in respect of key terms and concepts are required as well as better tools to communicate intentions in relation to what IMP is expected to deliver. In line with this the stakeholder's mental maps have to be enlarged in order to understand our polycentric metropolitan areas as networking urban configurations as well as the essential interplay between different levels (e.g. municipal ←→ city-regional ←→ national).
2) **The capacity of the governance system matters.** There is a need for clear strategies and solid instruments to manage the different interests/agendas/territorial logics of the many stakeholders involved. Since IMP is not only a spatial concept; it also entails a specific governance capacity and response. It requires cooperation, coordination and mutual understanding at different levels. Here it is central, however, to ensure that the entire metropolitan area develops consistently according to 'one single IMP concept'.
3) **IMP can help to combat urban sprawl and thus to respond to climate change in a positive manner.** Here there are three key issues to be considered: A further densification of some specific and carefully selected centres in accordance with the development and protection of the green structure ('polycentric compactness'). Secondly, higher densities must be linked with higher centralities (e.g. in terms of urban amenities, labour opportunities). Thirdly, as a kind of backbone for this picture, a polycentric transport system has to be developed that corresponds to the shape of the urban fabric and to the demand in terms of accessible centres along with solid transport axes and nodes in order to generate a reliable and efficient transport system that covers the entire functional metropolitan area.
4) **IMP can help to promote economic competitiveness and target-oriented labour divisions between centres.** In this sense it can be supportive in reconciling competitiveness and territorial cohesion policies within metropolitan areas by at the same time minimising agglomeration disadvantages (such as congestion and high land rents) through the decentralisation of economic activities. But if political and organisational coordination is lacking, IMP can lead to increasing transaction costs.

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A Intra-metropolitan polycentricty: Key issues and findings

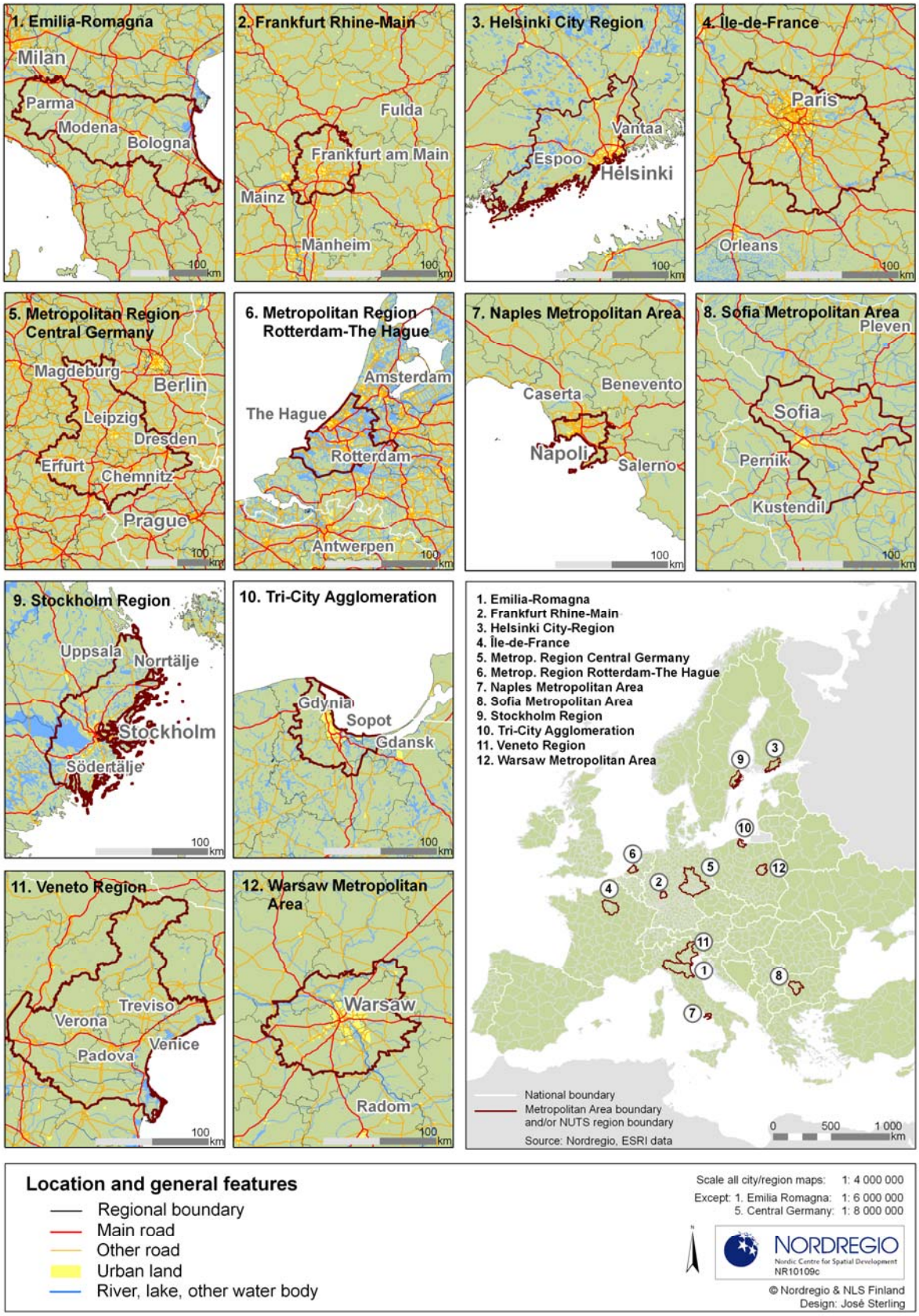
1 Introduction: Intention and working method of the Expert Group

Polycentricity is one of the key concepts coined by the European Spatial Development Perspective (ESDP) in 1999 and subsequently followed-up by the Territorial Agenda (TA, 2007) to frame strategic planning at the transnational level. In recent years, however, the concept of polycentricity – and its inherent expectations, diverse understandings and interests – can also be seen to have increasingly trickled down to the regional level, with a view to guiding spatial development 'within metropolitan areas'.

Intention and scope

On the initiative of the Office of Regional Planning of Stockholm County Council an Expert Group on intra-metropolitan polycentricity (which will be abbreviated in the following as '**IMP**') has been constituted within the METREX Network of European Metropolitan Regions and Areas to exchange current knowledge in this respect. Spatial planners from twelve metropolitan areas across Europe were gathered together to distinguish and further explore three thematic strands deemed to be closely related to the concept of polycentricity *within* metropolitan areas. The central objective of this group was to identify major challenges, to reflect current methods, practices, routines and debates and to share lessons and experiences with regard to the performance, applicability and implementation of the concept of polycentricty in the respective metropolitan areas represented in the group. The group included the following metropolitan areas:

- Emilia-Romagna
- Frankfurt Rhine-Main
- Helsinki City-Region
- Île-de-France
- Metropolitan Region Central Germany
- Metropolitan Region Rotterdam - The Hague
- Naples Metropolitan Area
- Sofia Metropolitan Area
- Stockholm Region
- Tri-City Agglomeration
- Veneto Region
- Warsaw Metropolitan Area


1. Emilia-Romagna
Milan
Parma
Modena
Bologna
2. Frankfurt Rhine-Main
Fulda
Frankfurt am Main
Mainz
Mannheim
3. Helsinki City Region
Vantaa
Espoo
Helsinki
4. Île-de-France
Paris
Orleans
5. Metropolitan Region Central Germany
Magdeburg
Berlin
Leipzig
Dresden
Erfurt
Chemnitz
Prague
6. Metropolitan Region Rotterdam-The Hague
Amsterdam
The Hague
Rotterdam
Antwerpen
7. Naples Metropolitan Area
Caserta
Benevento
Napoli
Salerno
8. Sofia Metropolitan Area
Pleven
Sofia
Pernik
Kustendil
9. Stockholm Region
Uppsala
Norrtälje
Stockholm
Södertälje
10. Tri-City Agglomeration
Gdynia
Sopot
Gdansk
11. Veneto Region
Treviso
Verona
Venice
Padova
12. Warsaw Metropolitan Area
Warsaw
Radom
100 km
1. Emilia-Romagna
2. Frankfurt Rhine-Main
3. Helsinki City-Region
4. Île-de-France
5. Metrop. Region Central Germany
6. Metrop. Region Rotterdam-The Hague
7. Naples Metropolitan Area
8. Sofia Metropolitan Area
9. Stockholm Region
10. Tri-City Agglomeration
11. Veneto Region
12. Warsaw Metropolitan Area
National boundary
Metropolitan Area boundary and/or NUTS region boundary
Source: Nordregio, ESRI data
0 500 1 000 km
Location and general features
Regional boundary
Main road
Other road
Urban land
River, lake, other water body
Scale all city/region maps: 1: 4 000 000
Except: 1. Emilia Romagna: 1: 6 000 000
5. Central Germany: 1: 8 000 000
NORDREGIO
Nordic Centre for Spatial Development
NR10109c
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Design: José Sterling

Working method

The group had an initial constitution-setting workshop in Stockholm in February 2009. Prior to this, a questionnaire had been sent to each participating metropolitan area. The general objective of this questionnaire was to gain a broad overview of the expectations and experiences of the group, the challenges and problems each partner was currently facing, and, finally, an idea of how each partner conceptualises and works with 'Intra-Metropolitan Polycentricity' (IMP). The results were presented and discussed during this first workshop. They also served as the basis for the brainstorming process and finally in the identification of the three thematic strands that were identified as being closely related to the concept of polycentricity *within* metropolitan areas and which should, as such, be further explored within this group. In addition, at this first meeting the working format, future time schedule and the general level of ambition were all agreed. For each of these thematic strands one specific workshop was organised and subsequently hosted by one of the members of the Expert Group.

- **Metropolitan Governance and the Implementation of Plans and Policies** (May 2009 in Paris)
- **Urban Sprawl and Climate Change Response** (November 2009 in Leipzig)
- **Economic Competitiveness and Functional Labour Division between Centres** (February 2010 in Sofia)

The discussions in respect of each workshop were framed by questionnaires sent to all partners prior to such meetings. Each theme was divided into the same set of three key questions. The members of the Expert Group were initially asked to illustrate their reflections on the particular thematic strand while paying attention to their rationales, expectations, and assessments in respect of why (and how far) intra-metropolitan polycentricity is a useful concept (or not) and what are the pros and cons in this respect. Secondly they were invited to provide possible examples and describe 'current' strategies, projects or programmes which might be illustrative. Finally, (if possible) they were asked to specify any experiences, 'lessons learned', or recommendations to the group.

The various activities undertaken by the Expert Group were supported and assisted by Peter Schmitt and Susan Brockett (Nordregio, the Nordic Centre for Spatial Development, Stockholm, Sweden).

Structure of the report

In Part A of this report we focus at first on the question of why intra-metropolitan polycentricty is now an issue debated so heavily across Europe (cf. chapter 2). After that the main dimensions of polycentricty and the different strands of ongoing research will be highlighted in order to gain a better understanding of what IMP might entail (cf. chapter 3). In chapter 4 the main characteristics and features of each of the twelve metropolitan areas that constituted our group will be introduced with the help of some maps and typologies (cf. chapter 4). Finally, the major observations and conclusions from our work will be summarised (cf. chapter 5).

In Part B the findings of the Expert Group are presented in a more in-depth manner in relation to the three chosen thematic strands (cf. chapters 6 to 8).

In Part C we will address all twelve metropolitan areas by outlining briefly their territorial scope and dynamics, their functional profiles and their operating governance and planning systems.

In Part D contact information for the Members of the Expert Group is given and, finally, in Part E the references referred to in this report are listed in full.

2 Why 'intra-metropolitan polycentricity'?

Metropolitan areas as drivers

In the current phase of globalisation it is easy to detect a view which argues for the growing appeal of 'metropolitan areas' as key places for economic growth, different kinds of infrastructures and breeding places for innovation (OECD 2006). The increasing economic weight of metropolitan areas in the European urban system can for the most part be attributed to the spatial logic and territorial needs of the knowledge-based economy though other industries, such as those associated with human capital, infrastructure developments, critical mass, cultural assets and creative *milieus,* are also important (Scott 2001, Hall/Pain 2006). As a result we can observe a gradual re-configuration of the various national urban systems followed by the growing dominance and spatial extension of a number of metropolitan areas. Consequently such metropolitan areas have become increasingly important in their roles as international competitiveness drivers and, more generally, in their role as buttressing socio-economic well-being across Europe.

The processes sketched out above challenge local, regional and state-level institutions as well as other public and private stakeholders to develop new modes of territorial governance, to define new mechanisms to allocate resources, to reconcile territorial competiveness and social cohesion at the national and city-regional level, and finally to identify robust strategies to make their metropolitan areas attractive to both investors and inhabitants (Ache *et. al* 2009). In recent years this has led to a resurgence of debates on territorial governance and strategic spatial planning in particular in respect of metropolitan areas (Jonas/Ward 2007).

The polycentric re-configuration of metropolitan areas

Since the 1980s, a re-configuration of metropolitan areas' physical urban forms has been increasingly debated among both theorists and practitioners. The monocentric model in which central city locations are considered as the sole functional focal point for all types of social and economic activity is no longer seen as the norm in the context of evolving spatial patterns across urban Europe. This is also the case in North America and indeed increasingly now in Asia. Central city locations are increasingly becoming components of a wider spatial functional entity which comprises headquarters complexes, back offices, airport cities, logistics management, different kinds of housing areas and entertainment facilities. In that sense cities (or even clusters of proximate cities) seem to be integrating more and more with their hinterlands to form, respectively, multi-centred, functional city-regions or metropolitan areas.

Current changes in metropolitan areas are not just taking place in 'inner cities', but also in their 'hinterlands'. There is increasing evidence that a new phase of development in terms of the 'urban periphery' is emerging which is no longer only characterised by quantitative growth in terms of population and an extension of the urban fabric. It is also represented by a wider array of economic functions and qualified jobs. The 'new spaces of growth poles' show a broad variety of spatial forms and functional specialisations forming, in line with infrastructural networks, 'new intermediate zones' with new centralities and peripheries. Such decentralisation processes can in some cases even lead to a hollowing-out of the traditional city (Knapp/Schmitt 2003).

In this sense one can state that almost all metropolitan areas, even so-called monocentric ones – though to different variations and degrees – can also be considered as polycentric urban configurations. This notion stems from the morphological and functional differentiations that are taking place in and between a number of neighbouring cities and towns within metropolitan areas. Thus the role of cities is embedded in a spatially wider, i.e. 'polycentric context' of the organisation of socio-economic activities. This is not inconsequential for spatial planning within metropolitan areas as it entails many challenges and thus calls for new trade-offs and tailor-made solutions. Those challenges and the experiences generated hitherto in dealing with such issues that can be linked to the notion of 'intra-metropolitan polycentricity' (i.e. polycentricity within metropolitan areas) have thus constituted the starting point for the work within the Expert Group.

3 A brief survey of the academic debate on 'intra-metropolitan polycentricity'

In a literal sense, the term 'polycentric' indicates that a spatial entity consists of multiple centres. The term, however, does not clarify what kinds of centres (centres of a transport axis, for housing, certain economic activities such as retail, industries etc.,) are in focus here, so that various notions and starting points are thinkable in particular when discussing polycentricity with spatial planners and policy makers.

This variety can easily be enlarged since the concept of polycentricity entails (at least) **four dimensions** each of which should be carefully distinguished. The **analytical-descriptive** dimension should be mentioned first, i.e. to describe, measure and characterise the current state of a spatial entity by pinpointing how far a country or a metropolitan area can, for instance, be said to be polycentric. Secondly, the concept can be understood in a **normative sense** which could help for instance in re-organising the spatial configuration of such an entity (i.e. either to promote/create polycentricity or to maintain/utilise the current polycentric setting). Thirdly, when talking about spatial entities one needs to clarify their **spatial scope** (e.g. the city-level, the city-regional, the mega-regional level or even the national or transnational level). In the context of the Expert Group, it was agreed from the outset that only the city-regional/mega-regional levels would figure in the context of this project. Since the intention was to address the notion of polycentricty *within* metropolitan areas, the title of this METREX Expert Group report has consequently been labelled **'intra-**metropolitan polycentricity**'** (→ **IMP**).

Today metropolitan areas usually comprise a central city and its semi-urban or rural hinterland. There are, however, a growing number of examples which include many cities, which are often of similar size or importance. The exact geographical scope of polycentric metropolitan areas in general can be defined based on several possible indicators (commuting patterns, spheres of planning and governance modes, catchment areas of centres/economic cores etc).

On closer inspection, the concept also challenges our understanding of centres within metropolitan areas as it can be related to either their roles or functional ties (i.e. their inter-relations) or their specific morphological forms (i.e. the structure of the urban fabric). This differentiation between a **functional and** a **morphological understanding** of polycentricity constitutes the fourth dimension that should be distinguished carefully.

In sum, polycentricity is a multi-faceted concept which means different things to different people. Hence the perception of what polycentricity (or polycentric development) is (or

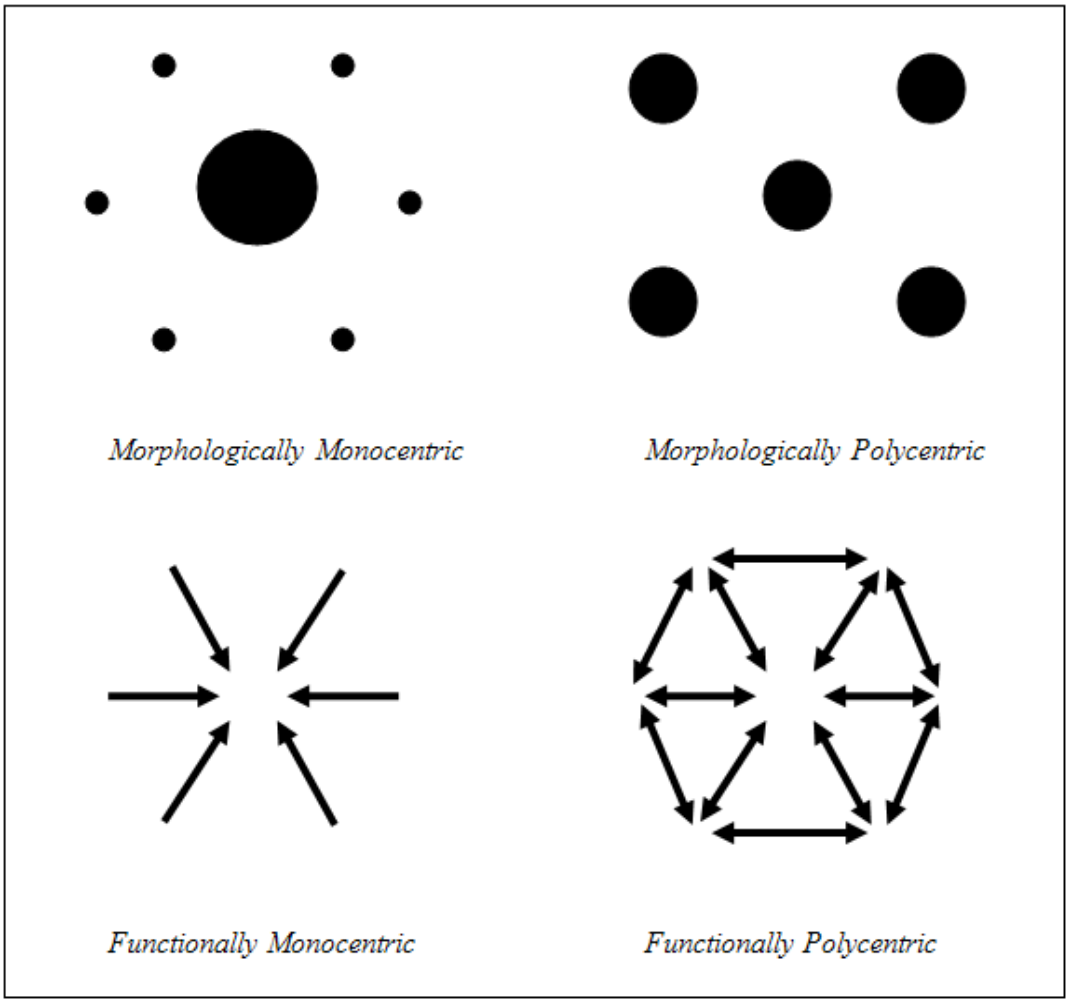
might be) is fuzzy due to the many dimensions and perspectives that are associated with it (Davoudi 2003). Kloosterman/Musterd (2001, 623), for instance, argue that *"cities (or rather city-regions) as rich, multifaceted and historically contextualised spatial phenomena encompass almost every aspect of social life and this means that polycentricity can, in principle, refer to the spatial of almost any human activity. The diversity in interpretations of polycentricity is, therefore, also a reflection of this inherent complexity."* When discussing the concept it is thus often difficult to clarify what dimension or human activity is being addressed or in what specific context it is being referred to. This may help to perpetuate the many uncertainties and connotations which are related to the concept of polycentricty.

Nevertheless, the intention of this report is to overcome some of these confusions by initially at least focusing primarily on polycentricity *within* metropolitan areas (i.e. IMP) and secondly to understand the concept of polycentricity in a normative way (i.e. to apply polycentricty). Regarding the first we still have to distinguish between two different territorial scopes within metropolitan areas, namely between the narrower city-regional level and the larger (what we have termed) mega-regional level. A strict differentiation between an analytical-descriptive and a normative understanding of IMP is however tricky insofar as the first is more or less the base for dealing with the second. In other words these two notions are very much interrelated. *In chapter 4 we will return to this issue in greater detail.*

Regarding the spatial scale which is relevant in our context, namely, the metropolitan area, one can distinguish between **five different lines of research** in the literature. The first concerns the **relevance, perception and the potential application / feasibility and policy design of the concept** as it relates to a number of selected regions (e.g. Ipenburg/Lambregts 2001, Meijers *et. al*. 2003 and the included case studies on the Randstad, Flemish Diamond, Central Scotland and Rhine-Ruhr in both volumes). The second line specifically addresses the issue of **institutional capacity-building and governance** in such city-regions (e.g. Meijers/Romein 2003, Knapp *et. al*. 2004, Gabi *et. al*. 2006). The third concerns **the role and function of centres, their potentials for networking with others** and finally the discussion about external economies and the question of whether, and how, several centres within a metropolitan area can complement each other. In other words, a *functional understanding of polycentricity* is at the centre of our discussion (Batten 1995, Capello 2000, Meijers 2007). The fourth approach is somewhat related to the third focusing on the discussion relating to the **measuring** (or partly just the anticipation) **of flows within polycentric urban configurations** in order to say something about their factual interactions (e.g. Hall/Pain

2006, Green 2007). The fifth strand of the literature on polycentricity deals with its more *morphological dimension*. This includes the debate on the **concrete shape of the urban form**, which is something of a precondition for the more functional and relational aspects just touched upon in the third and fourth strands of research (cf. Champion 2001, Mela 2008).

The latter two open up the discussion about the differences between monocentricty and polycentricty. Even though there is no clear classification to be found in the literature, one can say that the 12 metropolitan areas represented by our group fall somewhere in between the two extremes sketched out below. What should be added here is that the morphological urban pattern is of course (to some extent at least) the backbone of any functional relation between centres. Here the intensity and direction of relations (transport flows, cooperation, exchange of goods, knowledge etc.,) is decisive when it comes to assigning the degree of mono- or polycentricity of the metropolitan area at hand.



Source: Burger/Meijers (2010)

Nonetheless, the theoretical framework for understanding today's polycentric city-regions/metropolitan areas is still not well founded, since a clear systematic is still lacking (Klostermann/Musterd 2001, 623). Indeed Batty (2001), Hall/Pain (2006), Green (2007) and specifically Meijers (2007) have shown different ways to explore polycentricity at the city-regional or mega-regional level using different indicators and measurement methods. Most of these approaches are however based upon a more functional understanding of the concept and thus focus heavily on the (inter-)relations and the specific profiles of the centres within a polycentric urban configuration. Significant studies on the question, for instance, of whether (and if so, how far) the degree of polycentricity within e.g. a metropolitan area is related to its degree (or performance) of sustainability have not been carried out thus far.

The main reason for this is that both concepts (polycentricity and sustainability) are complex social constructs and thus, unsurprisingly, rather difficult to operationalise by means of solid indicators. There is, however, according to Parr (2004,237) a strong belief in the potential of the concept, at least among spatial planners and policy-makers since, *"some see the advocacy of PUR-based strategies* (PUR here stands for polycentric urban region) *as a distinctly European response, reflecting not simply the drive for greater competitiveness or improved economic performance, but also the desire to avoid certain of the North-American accompaniments to this, including urban sprawl, excessive dependence on the car, inner-city decline, and extreme social polarization*." Such beliefs among others can be confirmed by reference to our expert group of spatial planners and policy-makers (cf. Chapter 6 and in particular Part B).

An important contribution to a more 'dynamic' understanding of polycentric urban configurations has been provided by Champion (2001). He explains their emergence through a charting of changing demographic regimes over the past 40 years with regard to attitudes, lifestyles, and in-migrations to urban regions and in the composition of the urban population such as ageing, racial diversity and major developments in the household structure. Based on such dynamics and the concrete morphological starting point he derives three different development-paths for emerging 'polycentric urban configurations'. Champion (2001, 664-665) distinguishes between a centrifugal mode, an incorporation mode and finally a fusion mode.

The ***centrifugal mode*** is characterised by the continuing growth of a monocentric city that imposes such severe strains (e.g. escalating land rents in the CBD and growing problems of access to the central area from the ever more distant outer residential areas) that the most affected production and service activities are squeezed out to alternative

centres. In due course these centres may, in combination or indeed separately, come to rival the original centre in size. The ***incorporation mode*** relates to the case in which a large urban centre expands its urban fabric so that it incorporates smaller centres in the surrounding area that had previously been largely self-sufficient in terms of both employment and services. These other centres then form a more powerful catalyst in terms of attracting extra non-residential activities than the centres emerging through the centrifugal mode and they may perhaps provide an even stronger challenge to the main original centre. The ***fusion mode***, considers the case where several previously independent centres of similar size fuse as a result of their own separate growth both in overall size and lateral extent and particularly because of the improvement of transport links between them.

Even though his typology of such evolutionary modes appears initially to be quite theoretical the main message is of central importance to our understanding of 'intra-metropolitan polycentricty' (IMP). As such, Champion draws attention to the fact that today's polycentric urban regions have developed from different morphological points of departure. His work "also *makes it clear that polycentricism at the city-regional level not only refers to the outward diffusion from larger cities to smaller centres within their spheres of influence, but also to the kind of development in which the spheres of influence of several smaller or medium-sized cities start to interfere"* (Lambregts 2006, 116-117).

Champion's dynamic model is thus helpful not only in understanding the different starting points, but also the various development paths and finally also the different 'stages' of polycentric development of the respective metropolitan areas that are represented by the group (cf. chapter 4 and the brief portraits in part D). In addition it also provides a useful context for comprehending how planners and policy-makers in different polycentric urban regions reflect the concept in their daily practice and in how far they consider it a useful tool to cope with e.g. maintaining open space, congestion, economic imbalances or in combating urban sprawl.

As mentioned above, another strand of research has dealt with the question of analysing the required governance capacity within polycentric metropolitan areas (cf. for instance Meijers/Romein 2003, Schmitt 2007, Eggermann 2009). Here the basic argument is that this is a much more multifaceted and contested issue when compared to that of rather monocentric urban configurations. The main reason for this is the existence of the rather complex power-geography, which consists of more institutions/actors with different agendas and interests and thus 'more' key players such as (e.g. strong municipalities)

that have to agree upon specific policies, programmes or projects as compared to monocentric metropolitan areas which generally have a much more clearly defined hierarchy (i.e. distribution of power).

In sum, the available literature pinpoints what we need to know and what is difficult to assess or even to measure. There is however little hope for the emergence of a grand theory explaining specifically what intra-metropolitan polycentricity is and how it differs from monocentricity. What is clear however is that there are different dimensions associated with the notion of intra-metropolitan polycentricity along with the observation that our metropolitan areas today have seen very different development-paths and dynamics (due to varying historical, geo-political and socio-economic circumstances) which results in various challenges in terms of physical planning but also in the development and growth of appropriate governance systems. Hence the notion of intra-metropolitan polycentricity must be related to the specific context-sensitivity in which our metropolitan areas are embedded. This has been one of the major challenges facing the Expert Group (cf. chapter 4).

4 Our field of exploration: A dozen metropolitan areas in Europe

In addition to the fact that within this international Expert Group various planning and policy systems and cultures from eight European countries were represented, a major challenge remained the generation of a mutual level of understanding in respect of the specific and highly context sensitive polycentric setting of each of the twelve metropolitan areas, which can be at least partly seen from the maps contained in this report. As a consequence of this vital discussion within the group, and for the purposes of this report, 12 brief portraits, one for each of the participating metropolitan areas were elaborated (cf. part C).

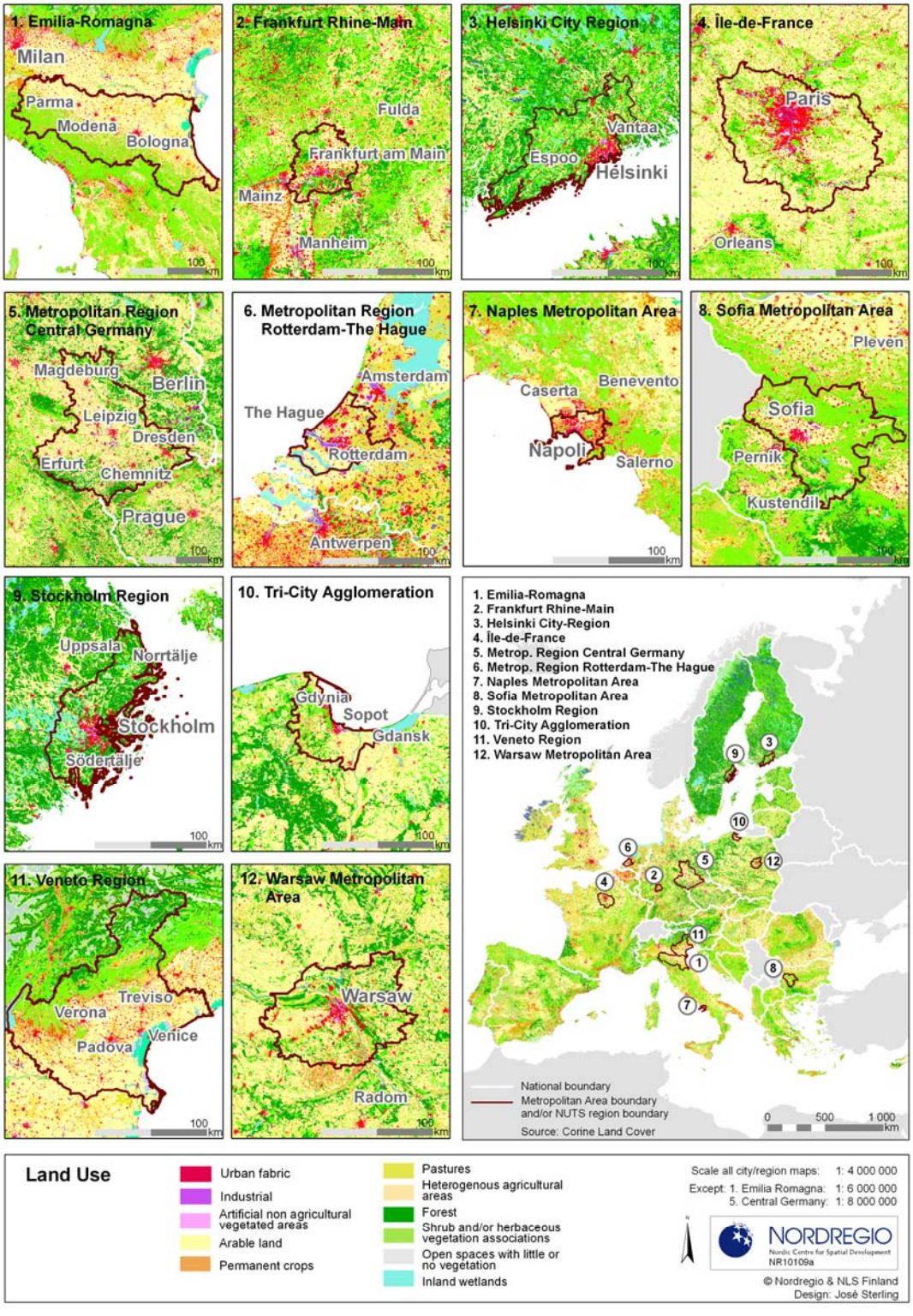
Based on these portraits, the understandings that emerged from the academic debate on the notion of intra-metropolitan polycentricty (IMP) (cf. chapter 3) and the discussions we had in the context of this group, we have identified five basic characteristics for differentiating IMP:

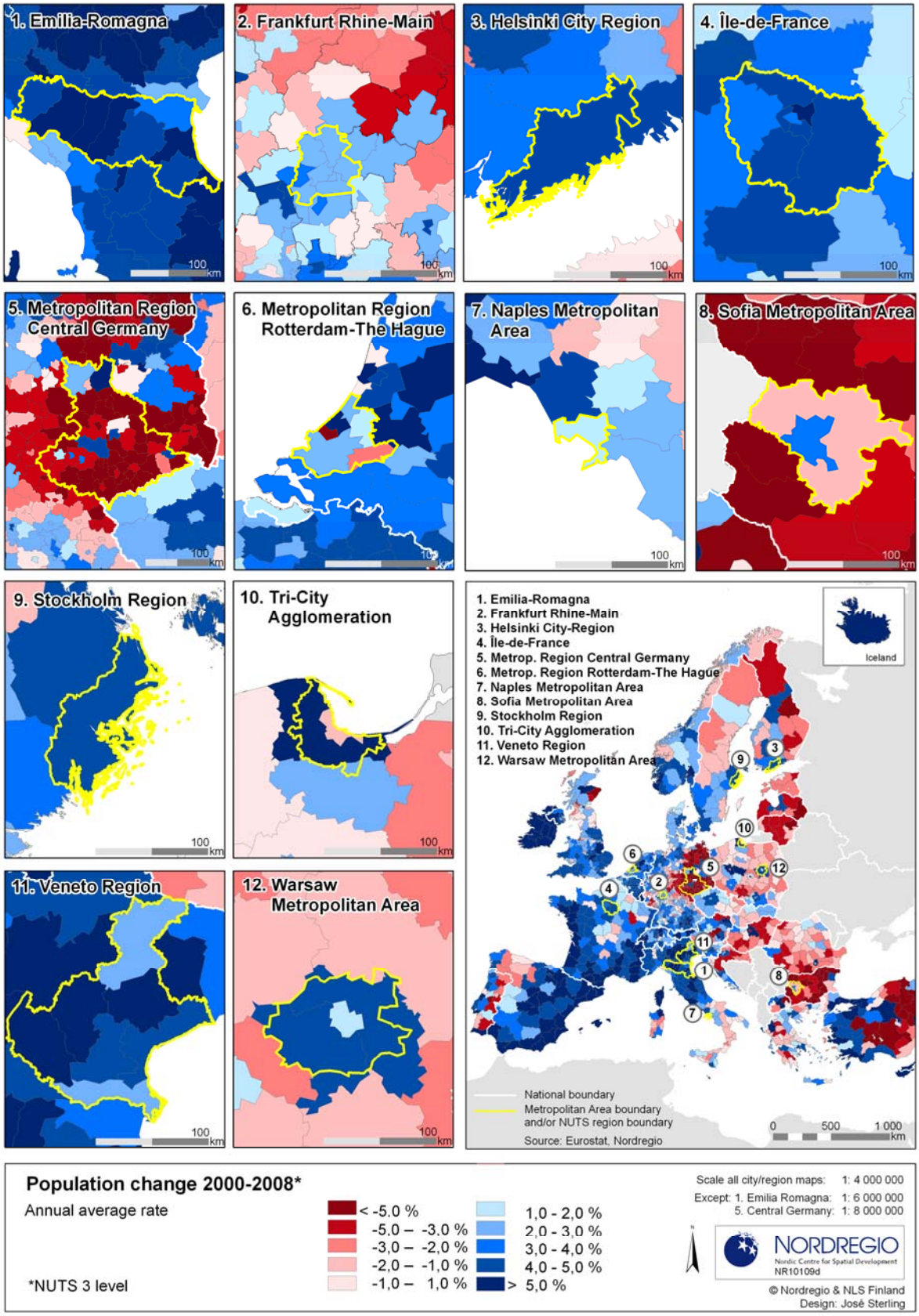
(a) The overall socio-economic dynamic: growth ←→ steady dev. ←→ decline/shrinkage
(b) The general policy response: 'creating' or 'maintaining' polycentricty
(c) The concrete territorial layout: the morphological pattern of the existing urban fabric and the functional inter-relations within the respective metropolitan area
(d) The spatial scale (i.e. the area that is in focus for the application of IMP): city-regional ←→ mega-regional
(e) The different points of departure in terms of existing governance systems

Understanding the overall socio-economic dynamic of a particular metropolitan area is critical in both the application of, and in determining, the meaningfulness of the concept of polycentricty within metropolitan areas **(a)**. On closer inspection we note that different dynamics exist within the metropolitan areas represented by the group (e.g. a rather steady overall dynamic (here in terms of the development of population and jobs) can, for instance, imply shrinking centres on the one hand and a growing periphery on the other. The following map gives some indication of this – at least in terms of demographic dynamics at a rather rough spatial scale (here NUTS 3).

This is often coupled with the policy response **(b)**, since it is more likely that in a 'growing metropolitan area' the normative agenda is primarily directed towards creating polycentricty, whereas within a less dynamic or even shrinking environment the focus is likely to be on maintaining, i.e. making better use of the existing polycentric structure. This is, however, dependent on the current degree of polycentricity (i.e. the concrete territorial layout), which is, of course, a result of historical urbanisation processes and

functional specialisation. Hence one needs to bear in mind that each metropolitan area illustrates, in its current state, a distinct territorial layout. Again, on closer inspection we can, due to the morphological pattern of the existing urban fabric and its functional geography (based on inter-relations between centres), derive different types of polycentricity **(c)**.




1. Emilia-Romagna
2. Frankfurt Rhine-Main
3. Helsinki City Region
4. Île-de-France
5. Metropolitan Region Central Germany
6. Metropolitan Region Rotterdam-The Hague
7. Naples Metropolitan Area
8. Sofia Metropolitan Area
9. Stockholm Region
10. Tri-City Agglomeration
11. Veneto Region
12. Warsaw Metropolitan Area
1. Emilia-Romagna
2. Frankfurt Rhine-Main
3. Helsinki City-Region
4. Île-de-France
5. Metrop. Region Central Germany
6. Metrop. Region Rotterdam-The Hague
7. Naples Metropolitan Area
8. Sofia Metropolitan Area
9. Stockholm Region
10. Tri-City Agglomeration
11. Veneto Region
12. Warsaw Metropolitan Area
Iceland
National boundary
Metropolitan Area boundary and/or NUTS region boundary
Source: Eurostat, Nordregio
0 500 1 000 km
100 km
Population change 2000-2008*
Annual average rate
*NUTS 3 level
< -5,0 %
-5,0 – -3,0 %
-3,0 – -2,0 %
-2,0 – -1,0 %
-1,0 – 1,0 %
1,0 - 2,0 %
2,0 - 3,0 %
3,0 - 4,0 %
4,0 - 5,0 %
> 5,0 %
Scale all city/region maps: 1: 4 000 000
Except: 1. Emilia Romagna: 1: 6 000 000
5. Central Germany: 1: 8 000 000
NORDREGIO
Nordic Centre for Spatial Development
NR10109d
© Nordregio & NLS Finland
Design: José Sterling

To make things even more complicated, the spatial scale for which a polycentric development strategy is being discussed in the metropolitan areas reviewed here is also very different. Here we can distinguish between a city-regional perspective, i.e. a rather, geographically speaking, narrowly defined metropolitan area (e.g. a central city with its commuter-hinterland) and, what we might call, a mega or supra-regional perspective **(d)**. The latter describes a rather larger area consisting of historically distinct cities/centres bundled together in the form of a network. Moreover, a few of the metropolitan areas addressed here even work with the concept of polycentricity at both spatial scales.

A final characteristic which is, at first glance, only indirectly linked to IMP is that of the different points of departure exhibited in terms of existing governance systems **(e)**. Here we can distinguish between 'Metro Governing Body with Considerable Powers', 'Metro Governing Body with Limited Powers' and finally, 'Negotiated Alliances that are characterised by non-Binding Agreements (for further characterisation of the three systems, cf. Figure 1). Here we acknowledge the fact that those governance systems are in general constituted by several modes of governance, which have their own specific logic in terms of interacting and bargaining among actors, applying instruments and different sorts of power (legal, financial or communicative/informative). But, since a detailed investigation would have gone beyond our original frame of reference we have chosen this rather simplistic typology to focus solely on the main spatial planning agency at the level of the respective metropolitan area.

A mode of governance can be understood as a concrete and intended form of interaction between different kinds of actors/institutions. The array of such modes which make-up the existing governance-system at hand can vary enormously in terms of available instruments/tools and different forms of power (e.g. statutory, communicative), the inclusion and exclusion of other stakeholders, the nature of decision-making processes, and finally formal and informal obligations and responsibilities.

The above-mentioned characteristics of IMP allow us to develop the following three typologies for the respective metropolitan areas that are represented by the Expert Group. These typologies are of course 'extreme' generalisations. One needs to stress here in particular the assumptions made in characterising the functional territorial layout. More in-depth investigations are however in order to present a more thorough understanding in this respect. Unfortunately, such investigations were well beyond the limited scope and the mandate of the current group. Such an issue could however be

tackled within the context of possible future activities. The morphological patterns of the existing urban fabric have also been neglected here, even though they are to some extent the backbone of the anticipated functional relations. They are however in part reflected in the 'brief portraits' that are to be found in part D of this report.

Table 1: Socio Economic Dynamic and Policy Response

Policy Response *Socio-Economic Dynamic*	**Creating polycentricity**	**Maintaining polycentricity**
Growth	Stockholm Region Helsinki City-Region Warsaw Metropolitan Area	Emilia-Romagna Veneto Region Île-de-France
Steady	Naples Metropolitan Area Sofia Metropolitan Area	Metropolitan Region Rotterdam - The Hague Frankfurt Rhine-Main Tri-City Agglomeration
Shrinkage		Metropolitan Region Central Germany

Table 2: Functional Territorial Layout and Spatial Scope

Spatial Scope 6.1 *Functional Territorial Layout*	**City-regional**	**Mega-regional**
one dominant core with a strong hierarchy: → predominately radial relations	Stockholm Region Helsinki City-Region Sofia Metropolitan Area	Île-de-France Warsaw Metropolitan Area
one dominant core with a moderate hierarchy: → criss-cross relations of different scope and intensity	Naples Metropolitan Area	Frankfurt Rhine-Main Emilia-Romagna Veneto Region
high degree of balanced polycentricity between the main (two or more) cores: → weak hierarchy, larger in-between areas without strong centres, almost balanced criss-cross relations	Metropolitan Region Rotterdam - The Hague Tri-City Agglomeration	Metropolitan Region Central Germany

Figure 1: Three different Governance Systems emerge from our twelve metropolitan areas

Type A	Type B	Type C
Metro Governing Body – 'Considerable' Powers	**Metro Governing Body – 'Limited' Powers**	**Negotiated Alliances – 'non-Binding'**
Frankfurt Rhine-Main Île-de-France	Stockholm Region Naples Metropolitan Area Veneto Region Sofia Metropolitan Area Emilia-Romagna Warsaw Metropolitan Area	Helsinki City-Region Metropolitan Region Central Germany Tri-City Agglomeration Metropolitan Region Rotterdam - The Hague
key characteristics: ▪ municipalities are important players in spatial planning ▪ **but** the regional plan and corresponding regional institutions are **'powerful' tools** in promoting and creating intra-metropolitan polycentricity	*key characteristics:* ▪ i.e. regional plan existing, but of a rather indicative and advisory nature ▪ municipalities remain the 'only' strong type of player	*key characteristics:* ▪ voluntary collaboration ▪ forming strategic alliances to activate synergies between centres

5 Major observations and conclusions

The major observations made and conclusions presented in the following have been derived from the inputs generated by the members of the Expert Group and their mutual discussions in our workshops. In other words, they are based on the spatial planners' perceptions, reflections and experiences. In most cases the empirical evidence for these observations is still rather weak, thus many uncertainties remain, further limiting our ability to easily generalise from these findings.

Major observations

When trying to link theory (here the brief analysis of the literature on polycentricity within metropolitan areas, cf. chapter 4) and the expectations, rationales and practices of spatial planners (cf. chapters 6 to 8) one can easily detect some common arguments. The first worthy of mention here is that the latter group generally puts forward more questions than answers. Members of the Expert Group have claimed many times that more 'evidence and knowledge' is needed in order to help place their expectations and strategies on a firmer footing, which is not surprising due to the weak empirical and theoretical underpinnings achieved thus far (cf. chapter 4). Another overlap between the two communities that could be observed here is the fact that polycentricity is indeed a multi-faceted notion since it entails very different dimensions and characteristics, but also views, expectations and experiences and unsurprisingly also various pros and cons which can be normatively associated with it.

Given the clearly discernable differences in term of expectations, rationales and practices/experiences among the members of the Expert Group the very different starting points became obvious in light of the various existing polycentric structures and growth dynamics on the one hand, and the specific historically or geo-politically given path-dependency experienced by each entity and, finally, the existing institutional, political or even cultural environment in the respective metropolitan area, on the other.

Even though the focus here has been on the normative dimension, and the related practices, experiences and expectations of these experts, the discussions within this group has clearly highlighted that this dimension is very much anchored in other dimensions (morphological, functional etc., cf. chapter 3) and characteristics as depicted above. However it has proved useful to reduce the various realities of the metropolitan areas that were represented by this group down to three basic typologies (cf. chapter 4) in order to understand these polycentric metropolitan areas as dynamic systems and to make it easier to undertake meaningful communication about them. In any case, such typologies (be they helpful or otherwise) should not hide the fact that the need remains

to develop commonly shared mindsets on key terms and concepts as discussed within the group and used throughout this report.

Another interesting observation is that the discussion on IMP brought us back several times to the controversial question of the scope and power of spatial planning. Is it today just reactive to or even simply an appendix to market forces or can the strategic concept of IMP be of help in (re-)constituting its regulatory, organisational and shaping power? It was also debated, in this context, how far IMP – and the various policies to either promote or maintain polycentricity – is consistent with our norms and values as responsible spatial planners.

Comparing the level of reflection between the three themes depicted here (cf. chapter 6 to 8) it has to be noted that in respect of the first two themes (governance and urban sprawl/climate change response) the experts seem to be able to give very distinct and well-grounded responses. It is the last theme (on how to promote economic competitiveness and functional labour divisions between centres) however which seems to be more difficult to discuss. Initially this problematic directed us to the underlying question of the pros and cons of IMP in general and as an objective for spatial planning in particular. More specifically, it has clearly been rather difficult for the experts to grasp relations between centres or to identify promising complementarities/synergies. In attempting this, a systemic understanding of the functional dimension of polycentric metropolitan areas is required backed-up by meaningful and robust theories, key terms and empirical data. This can also be understood as a claim directed to the research community to provide better and more comprehensible support.

Additionally, in a more general sense, it is clear that uncertainties undoubtedly remain in terms of the development of a fuller understanding of urban profiles and the critical interactions between centres. Another ambiguity remains in respect of the question of the degree to which polycentricity is most appropriate with regard to sustainable development or climate change response. Our normative policy agendas can often be seen to be overly reliant on assumptions and hopes. On the other hand a commonly shared consensus can be detected within the group that we have to enlarge our mental maps (from the municipal level to the level of larger polycentric metropolitan areas and their external relations) in order to fully grasp the functioning of our polycentric metropolitan areas today – in addition those that have been presented by the group do vary a lot in terms of their spatial scope. Hence it has been claimed many times that there is a need to identify tailor-made (multi-level) governance systems in order to render polycentric metropolitan areas capable of acting.

Conclusions

Issues that need to carefully revisited when applying IMP

- In order to estimate whether IMP is better than a more monocentric approach one needs to evaluate many decisions in planning and policy *(e.g. are three small theatres better than one big one?)*
- To fully explore the added-value of IMP one needs to delve deeper into a systemic understanding of the character of urban configurations today and the logics and inherent processes of spatial planning
- We feel that IMP should be viewed as something to be strived for, but further study is needed to identify and illustrate its advantages since we still do not know enough about it.

Preconditions for the application of IMP

- IMP is only successful if the stakeholders remain patient – it is a long-term strategy – particularly at the municipal level where a lack of long-term thinking can often be exhibited – to develop the necessary organisational capacity and to activate the required resources.
- Spatial Planners and policy-makers should try to understand market mechanisms better and their potential territorial impacts
- Spatial planners need convincing tools to transmit their analysis and their intended messages, since IMP means different things to different people. Hence a mutually perceived mindset is a central starting point for working with IMP. Images, sketches or more highly designed representations seem, in particular, to be much more useful than classical technical maps and cryptic spatial planning phrases in ensuring that these messages are effectively communicated.

The capacity of the governance system matters:

- IMP can be a meaningful concept if it is supported by an institutional framework that is able to adopt adequate and well-timed strategies in different fields of policies, since IMP is not only a spatial concept; it also entails a specific governance capacity and response.
- IMP claims cooperation and mutual understanding between local authorities (neighbouring municipalities) and between local and regional authorities as well as strong support from powerful sectoral stakeholders. It demands coordination at different levels with various stakeholders to ensure that the entire metropolitan area develops consistently according to 'a single IMP concept'
- IMP necessitates clear strategies and instruments to manage the different (diverse) interests of actors/institutions. Central here are the interactions and integration of various stakeholders (private and public, civil society) with their different interests, agendas and territorial logics at different spatial scales.
- Agreements to implement projects, polices or programmes become more likely if instruments are available that anticipate and manage the likelihood of unequally distributed benefits among such actors. As a pre-condition for this, the criteria and expected impacts of projects, polices or programmes are critical here in identifying 'what' such instruments need to balance and 'how' they should do it.
- Inter-municipal co-operation is certainly the key to making IMP work, but if the intention is to develop certain complementarities among the centres of a polycentric urban configuration, one needs also to think about specific financial schemes such as sharing the inflow of business tax among municipalities within a metropolitan area.

IMP can help to combat urban sprawl and thus to respond to climate change in a positive manner

- The concept of IMP is in particular meaningful for the purpose of 'densifying' certain centres in accordance with the development and protection of some green belts/wedges to structure the polycentric urban landscape (→ polycentric compactness).
- It can also be helpful in developing transport axes/nodes and a reliable and efficient transport system.
- With a view to shaping the urban fabric one has to bear in mind that higher densities must be linked to increasingly stronger and diversified centralities (e.g. in terms of centres for the labour market and the quality of urban amenities). Central to achieving this is the assured accessibility of such centres, only then it is possible to channel and thus minimise to some extent the flow of people and goods. This however demands the use of powerful spatial planning instruments.

IMP can help to promote economic competitiveness and target-oriented labour divisions between centres

- IMP can be helpful in reconciling competitiveness and territorial cohesion within metropolitan areas. Hence: it should address not only economic aspects, but also social issues with a view to improving the quality of life of the metropolitan area's inhabitants
- IMP can help to minimise agglomeration disadvantages (congestion, pressure on land-use, high land prices etc.,) by spreading urban services/amenities to distinct centres *and* by preserving the open space in-between.
- The development of local growth centres (that are not only retail centres or residential areas) requires a consequent spatial strategy of business development covering the entire metropolitan area with a corresponding mode of governance. The centres' profiles should not be defined too narrowly, since restructuring processes in the economy can happen very quickly after which such well defined policies become quickly redundant.
- The re-location of firms to non-integrated, but easily accessible locations by private car can only be avoided if policies focus solely on promoting centres with a good level of public transport - *"only then a polycentric metropolitan area becomes reality".*
- Striving for complementarities among centres also needs top-down incentives ('carrots and sticks') to help place this issue on the 'metropolitan area's agenda'. If political and organisational coordination is lacking, IMP can lead to increasing transaction costs and to a duplication of institutions with the same purpose (e.g. for economic development, cultural affairs).

B Exploring intra-metropolitan polycentricity: Three thematic strands

6 On governance and the implementation of plans and policies

The ability to manage intra-metropolitan polycentricity is the underlying prerequisite for the discussion of the more thematic aspects to be found in chapters 7 and 8. However, it has to be noted here that in this chapter we try to focus on the fundamental aspects of the existing governance systems and their capacity (e.g. in terms of implementing plans and policies) and the need for adaptation in view of promoting IMP. In the previous chapters (7 and 8) we dealt with such issues more concretely when discussing the various thematic aspects linked to IMP.

6.2 Major challenges and expectations

From a more general perspective one can structure the different challenges and expectations as follows:

- the need for multi-level coordination to cope with recurring conflicts
- the need to develop a mode of governance that matches the spatial scale required to promote polycentricity
- the question of organisational capacities and available instruments/tools to promote polycentricity

The need for multi-level coordination to cope with recurring conflicts

Here one can distinguish between different kinds of conflicts caused by the multi-level interplay between different kinds of actors/institutions. We want here to label them as challenges for coordination 'upwards', 'downwards' and 'sideways'. A clear example of the first case is that a strategy to enforce a polycentric metropolitan area can challenge any superior formal Government system (e.g. that of a Federal State or even the Nation State). In cases where a polycentric metropolitan area is about to develop a specific governance system to coordinate common issues of interest the area is often characterised by an enlargement of its spatial scale. In any case its political weight becomes more significant and it is thus perceived by the superior level as an 'emerging competitor'. The dilemma of the Nation/Federal State is to have (normally) an explicit interest in strong metropolitan areas (e.g. France, Germany, Netherlands, and Poland). The problem is, however, that if their political influence becomes too strong, e.g. through the development of a governance system for a larger polycentric metropolitan area, it is

feared that such metropolitan areas would then claim more political support or even try to undermine some of the Nation/Federal State's responsibilities. This problem is perhaps even greater within Nation States with a Federal structure as it is the case in Germany, since a metropolitan area can be of the same socio-economic (and thus even political) weight as a Federal State (*Bundesland*). Further examples of such recurring conflicts 'upwards' are however of a very different character. It has also been suggested here that the Nation State is too passive in supporting the development of the required governance system in order to make polycentric metropolitan areas capable of acting (e.g. Tri-City Agglomeration, Helsinki City-Region). Another point that has often been raised touches upon the other extreme concerning centralising Nation States. Here it is often suggested that the Nation State has a very different view compared to the responsible stakeholders on site of how a particular metropolitan area should develop and thus how it should cope with polycentricity (e.g. Île-de-France, Sofia Metropolitan Area).

A central challenge for coordination 'downwards' is for instance whether local economic interests should override the defined objectives in regional land-use plans promoting polycentricity. More generally it has been argued that the application of the concept of polycentricity within metropolitan areas demands intensive negotiation. The more centres concerned, the more coordination is needed, since many other authorities, 'quangos' (quasi-autonomous non-governmental organisations) or in some cases also private actors, are involved. This has a tremendous impact on transaction costs in general and demands enormous organisational and institutional capacity in particular (see below). It is also generally acknowledged that it makes any kind of activity (e.g. development of plans, programmes or projects) very time-consuming. Where a certain mode of governance has been established to coordinate and negotiate policies, programmes and projects helping to promote IMP, either to develop or maintain it for instance, the challenge of identifying trade-offs between overlapping interests and the competences of other actors/institutions thus emerges.

The need to develop a mode of governance that matches the spatial scale required to promote polycentricity

Besides the challenges of identifying the right balance of power and coordinating between different interests and agendas another dispute that has emerged is that of developing a mode of governance that corresponds to the functional geography of the polycentric metropolitan area (here in particular Metropolitan Region Central Germany, Helsinki City-Region, Tri-City Agglomeration, Metropolitan Region Rotterdam - The Hague). Indeed, in many cases the concept of polycentricity implies an enlargement of the mental map of spatial planners and policy-makers as they effectively offer a new scale for territorial

governance in this respect. In other words, what makes it difficult to establish a specific mode (or many modes) of governance for the scale of the polycentric metropolitan area is the fact that normally the rationale for defining this area follows a functional logic (economic integration, relations between different centres, labour markets etc). The relevant political stakeholders are, however, bounded to their territorial logics (i.e. the politico-administrative scope of municipalities, provinces, counties, districts etc.,) and their inherent institutional restrictions. This necessarily requires that a powerful discourse has to be established which suggests how to overcome these territorial and institutional limitations by promoting some convincing rationales to motivate stakeholders to invest their resources and capacities in bargaining for a new or better mode of governance at the scale of the polycentric metropolitan area.

The question of organisational capacities and available instruments/tools to promote polycentricity

In addition to these rather fundamental issues, a number of other challenges can also be identified that touch upon the question of organisational capacities and the available instruments/tools to promote polycentricity. Here in particular the role of the municipalities within metropolitan areas seems to be critical (here Frankfurt Rhine-Main, Naples Metropolitan Area, Veneto Region, Stockholm Region). They are, in general, very sensitive to changing political agendas, which has thus far made it rather problematic to promote polycentricty for a metropolitan area demanding the long-term commitment of all actors/institutions involved. From the municipalities' point of view this means that their engagement requires extra capabilities and resources as well as a fair amount of stamina, since *"there are drivers, but also free-riders and trouble-makers"*, which makes it rather difficult to implement policies, programmes or projects.

As touched upon above, in most of the metropolitan areas represented by the group only a weakly (or in some places none at all) established mode of governance exists which could be said to correspond to the local 'polycentric geography'. To compensate for this lack of power the existing level of organisational capacity is challenged by those actors/institutions with an interest in promoting IMP for this particular area. The only available tool is often that of 'communicative power', which concerns the framing of certain debates, trying to moderate between different stakeholders or using pointed images to highlight certain problems/issues (here Helsinki City-Region, Metropolitan Region Central Germany, Tri-City Agglomeration, Metropolitan Region Rotterdam - The Hague).

However, the scope of these activities is rather restricted as it is difficult to organise binding consensus and concerted actions. Thus, in order to develop a 'cooperative institutional network' beyond the formal planning/administrative structure the central challenge would be to activate interest and to bolster trust among the participating actors/institutions as well as to identify potential 'win-win' situations. This prove however rather tricky since, as a general rule, different perceptions tend to exist in respect of the potential synergies within a polycentric metropolitan area. In addition it has also been noted that any concrete projects/incentives etc., normally benefit only a few centres (and not all of them). In addition, there is also the risk that a mode of governance that integrates the polycentric geography of a particular area also promotes unfruitful rivalries, which can impede any kind of future collaboration. Another point that has been mentioned here is the quest to define a manageable agenda for creating a polycentric metropolitan area and the need to identify the stakeholders that are critical to its successful implementation.

6.3 Reflecting current practices

Having discussed the most eye-catching challenges that have been highlighted by the Expert Group, it is interesting also to shed some light on how some of the spatial planners belonging to our group try to compensate for the identified shortcomings and problems in this respect. The points raised here are both numerous and diverse thus it is rather difficult if not impossible to make any kind of grouping.

The current response displayed in three of the participating metropolitan areas discussed in this study (here Metropolitan Region Central Germany, Tri-City Agglomeration, Helsinki City-Region) on the above-mentioned dilemma of multi-level coordination is, for instance, to add a new, rather informal, mode of governance to the existing system in order to debate metropolitan development issues and to help respond to often unwanted national initiatives. This approach is designed to help overcome the complexity of the existing institutional system and to develop specific alliances between e.g. provinces and municipalities and other public organisations, landowners and private stakeholders. Another expected side-effect is to institutionalise agreements 'downwards' and 'upwards' to follow-up/maintain the intra-metropolitan strategy in the form of contracts with the respective institutions/actors. A further related approach here is to raise awareness regarding the polycentric metropolitan area and its challenges with a view to establishing a process of permanent dialogue and visioning between national, regional and local stakeholders plus neighbouring regions.

As regards the need for coordination downwards one example here is that of 'assisting' municipalities to develop certain 'growth centres' (e.g. by involving all relevant stakeholders, or to help launch specific development agencies for this purpose) in order to strengthen the polycentric shape of the metropolitan area (here Stockholm Region). Other practices here focus on, for instance, facilitating the learning process taking part in a 'project' initiated by the Nation State in which the existing governance system is being reviewed or by undertaking a risk analysis of the potential problems stemming from non-cooperation between centres (here Metropolitan Region Central Germany). Another response sees an increased focus on 'enlarging local mental maps' in order to raise awareness of the planning issues at the scale of the polycentric metropolitan area. This, it is hoped, shall pave the way for the elaboration of strategic spatial plans for the city-regional level and the opening up of debate on future modes of governance at this level (here Tri-City Agglomeration, Helsinki City-Region).

6.4 Lessons learned

The lessons that will be depicted here range from conceptual to organisational and coordination and, ultimately, to implementation issues.

Conceptual issues

An additional and rather general point here touches upon the difficulty of working with intra-metropolitan polycentricity *per se*, since the concept requires reflection and analysis as it challenges our systemic understanding of metropolitan areas and their dynamics. In other words, an approved understanding, well defined policy goals and political-level commitment to cooperation are the key ingredients in promoting IMP. This also necessitates clear strategies and instruments to manage the different (and often rather diverse) interests of the various partners. A tricky question here for instance concerns the potential assigned role of one or other centre/municipality in such a (new) polycentric network. In addition it has often been stated that a robust and agreed upon model of strategic centres and development axes is a pre-requisite before even beginning to tackle the planning goals connected with IMP.

Besides the need for a comprehensive understanding ('analytical dimension of IMP') and a robust strategy ('normative dimension of IMP'), it was often noted that communication in respect of these concerns remains a somewhat difficult task. At this point planners need convincing tools to transmit their analysis and their intended messages - sketches, drawings or rather more thoughtfully designed representations in particular seem to be much more useful here than classical technical maps. It has even been suggested in this context that planners need to work with communication experts, since such planning

concepts (on IMP) are often difficult to comprehend both at the level of local politicians and that of the general public.

Organisational and coordination issues

Since IMP is a multifaceted concept it requires strong coordination among the many actors/institutions involved. Due to its nature of bringing together various issues/sectors and territories/levels (i.e. the many actors and institutions and their different territorial logics as being responsible for a particular municipality, district etc.) 'IMP' entails diverse rationales and interests. The multi-level and cross-sectoral interplay can only be managed by communication, involvement and participation and through the fine adjustment of programmes/plans and instruments for implementation – only in this way can spatial planning leave its footprint on the promotion of IMP.

More concretely the role of the municipalities here has been highlighted by a number of experts. Their commitment as well as a thorough understanding of their complex problems and their various interests is a central pre-condition for the delivery of better results. Also the need for bottom-up initiatives has been put forward to address the 'hollowed out' nature of some existing governance systems that invariably emerge when dealing with IMP. On the other hand, it has also been noted that the current governance system is already highly complex. Instead of adding further to this complexity through the addition of a layer of informal modes of system governance it would perhaps be better to seek greater clarity in terms of the existing system in particular in respect of tasks, responsibilities and the various scopes of action. A strong message in this respect has thus emerged here: *"Avoid too many layers and modes of governance – a clear division of power is needed"*.

Implementation issues

In this section a number of pre-conditions and the more general role of spatial planning today are highlighted for discussion. One such issue is the claim to make spatial plans relevant when it comes also to their implementation – and not to sit back once the plan is approved. In other words it has been claimed that a metropolitan planning organisation/agency needs to involve itself more directly in the implementation process and should follow-up and assess very carefully the application of plans and strategies.

In view of the application of IMP, it has often been noted that it is rather difficult to realise 'win-win' situations in respect of all the actors involved. Consequently it is suggested that an agreement to implement projects, polices or programmes becomes more likely if instruments are available which anticipate and manage unequally distributed benefits among such actors. As a pre-condition for this, the criteria and

expected impacts of projects, polices or programmes are critical here in order to identify 'what' such instruments need to balance and 'how' they should do it.

Another even more far reaching proposal once again picks up the issue of the role of the municipalities. Inter-municipal co-operation is certainly the key to making IMP work, but if the intention here is to develop certain complementarities among the centres of a polycentric urban configuration, one needs also to think about specific financial schemes such as those designed to share the inflow of business tax among municipalities within a metropolitan area. Only then can the required support be secured to implement IMP as a planning concept. Some even claim – in respect of their experiences with current practices – that there is a need for a more formalised (e.g. more powerful) planning authority for the entire metropolitan area (*"only then can a polycentric agenda be implemented in the long run"*).

7 Responding to climate change and combating urban sprawl

This chapter reflects the discussions held on two themes that are apparently very much interrelated in view of the concept of polycentricity. The impression can even be gained that planning for polycentricity can be used as a driver in relation to two of the most prominent strategic goals in metropolitan spatial planning today, namely, 'to respond to climate change' and 'to combat urban sprawl'.

7.1 Major challenges and expectations

The expectations and rationales within the Expert Group have been quite similar here. As a common baseline one can say that IMP can play an essential role in terms of aiming for a carbon-zero society. The major expectation is that IMP can help to integrate this ambitious goal with other planning issues such as those designed to make cities more compact and dense and to develop high quality public transport systems. Within this context the group also emphasised that IMP functions as a means to enlarging the mental maps drawn of our metropolitan areas. In view of climate change response for instance it can help to understand them as 'regional' urban configurations, since only the regional scale is really appropriate for addressing efficient adaptation/mitigation policies.

Mitigation rather than adaptation

What is also remarkable here is that almost all expectations and rationales can be grouped under the headline 'mitigation' (i.e. issues touching upon 'adaptation' are hardly ever raised). The only issue that is raised in respect of adaption policies is that in a case of emergency (such as floods) a polycentric structure of 'First Aid' centres is more efficient than a monocentric one. Concerning those issues that touch upon mitigation policies, it seems that the sound interplay between a compact and dense urban fabric in the different centres that form a polycentric territorial layout and an efficient public transport system connecting these centres is the key issue here.

Joint regional strategy for densification

This is expected to reduce the overall level of energy consumption for two main reasons: IMP can help to develop dense and compact centres with a view to forming a critical mass with numerous functions to reduce (at least to some extent) travelling to other parts of the metropolitan area. In this sense it has been argued that IMP is a useful concept since it supports a 'joint regional' strategy for densification in some particular centres and can – at least in some metropolitan areas - also lead to a slight reduction in

the domination of the central core (e.g. Stockholm Region, Île-de-France, Naples Metropolitan Area). In any case firm regional commitment is required. Secondly, a system of such centres can help to reconfigure the otherwise rather dispersed mobility patterns which we see today (e.g. Warsaw Metropolitan Area, Veneto Region, Emilia-Romagna, Sofia Metropolitan Area).

IMP can help to develop a more efficient Public Transport System

This kind of reconfiguration or 'bundling' is only possible if these high-density centres are well integrated into the Public Transport System at the level of the entire metropolitan area (i.e. including all major centres). In other words, the seeming disadvantages of a polycentric structure, given its propensity to generate cross-town/tangential travelling, are to be compensated by a Public Transport System that corresponds to this particular structure and consequently turns it into an advantage. Such a system, according to the main strand of argumentation within the group can, however, only be a sustainable solution (also in terms of its economic resilience) if a certain critical mass of potential users can be achieved. This critical mass in terms of users shall be provided by these high-density centres/cores, which should ideally form the physical focal points of such a Public Transport System at the scale of the entire metropolitan area. If such a polycentric structure is established IMP can, in this way, also help to promote alternative transport modes (e.g. bicycles, electric cars) at least in terms of mobility within such centres.

In addition to the preference for high densities and the generation of a critical mass of users to feed a Public Transport System for the whole metropolitan area, other prerequisites include the provision of urban amenities and local services, which will in return attract further facilities/services. In other words, such centres (or urban cores) need to become distinct multi-functional focal points fed by a corresponding Public Transport System for the metropolitan area, only then can its carbon footprint be reduced.

How many centres are reasonable?

An interesting point has however been raised here. In relation to these metropolitan areas the question remains one of, "how many centres of which size and function shall be developed": A few large ones or rather a micro-polycentric structure with many smaller centres? The latter would be far more expensive and difficult to organise. It has also been argued by a number of experts in the group that such strategic objectives are of course desirable, but hardly achievable, given that extending rather than densifying metropolitan areas remains the cheaper option in most cases (e.g. Helsinki City-Region, Sofia Metropolitan Area, Warsaw Metropolitan Area, Naples Metropolitan Area, Veneto

Region, Emilia-Romagna). Consequently the image of an 'ideal and functioning case of IMP' sketched out above contradicts the reality of current urban development processes since they still primarily follow the trends in the all pervasive land price gradients from the centre to the hinterland. Some voices in the group have thus argued that to promote IMP in this sense is only meaningful in those metropolitan areas that can afford to steer against this 'logic'.

7.2 Reflecting current practices

A commonly shared rationale and objective within the group in relation to current practices can readily be identified. The concrete approaches utilised are, however, rather different. The aforementioned strategic objective of maintaining or even creating a polycentric structure linked by a regional Public Transport System is about to be supported by numerous accompanying measures. Worthy of mention here are those targeted to better accessibility, quality and the reliability of the Public Transport System (here in particular Warsaw Metropolitan Area, Metropolitan Region Rotterdam - The Hague) as well as to the upgrading of the cycling network, particularly within the centres (e.g. Stockholm Region). Both incentives are expected to help in the reduction of car usage. Other projects or policies focus for instance on improving regional logistics systems and on preserving high housing densities in the central core areas (e.g. Emilia-Romagna, Naples Metropolitan Area).

In line with what has been outlined under the headline of 'expectations and rationales' (cf. chapter 6.1), some experts have reported on approaches to further densify (some) centres and to upgrade them in terms of new local services coupled with better Public Transport access and modern district heating/cooling systems (e.g. Stockholm Region). Here again it was highlighted by various members of the group that though the densification approach is labelled as an explicit goal in the respective plans and programmes they are fully aware of the fact that this planning approach is often pitched against the logic of market actors, since "*capitalism and its inherent market mechanisms (so far) has worked through the spatial expansion of the city*".

The question of scale and scope

What has to be reflected here with a certain care is the question of scale and the respective current interventions which are often treated very differently in the metropolitan areas represented by the group. Some have emphasised that a regional fast train system would help to maintain a polycentric structure at the level of the 'mega-region' (Île-de-France, Metropolitan Region Central Germany) or that new centres are to be created within the next 30 years in order to achieve a better land-use balance within

the 'city-region' (Sofia Metropolitan Area, Warsaw Metropolitan Area). Others have stressed current incentives at a more local scale, such as the intensification of land-use within existing cores (i.e. maintaining IMP, here e.g. Emilia-Romagna, Frankfurt Rhine-Main) or to reinforce IMP around small centres by building new settlements along railway axes (here Naples Metropolitan Area, Veneto Region). Other practices outlined by the group in this respect include, for instance, the concentration of industrial development in a few specific and easily accessible areas (Tri-City Agglomeration) or the reuse of brownfield sites and post-industrial/post– military areas in order to reduce overall land consumption (Warsaw Metropolitan Area).

Some of the other reported current practices are of a rather 'preparatory' character such as the identification and zoning of the most valuable natural areas in spatial development plans (Metropolitan Region Rotterdam - The Hague) or the assigning of protected green belts/open spaces to preserve some distinct urban areas (Emilia-Romagna, Naples Metropolitan Area). Additional practices targeted using the green belts as a means of structuring the polycentric landscape while also restricting the detrimental activities related to their climatic and cooling effects. Here so-called 'green fingers' or 'wedges' can function as breeze pathways to counteract the urban heat island effect. This is an adaptation element in the territorial layout of polycentric metropolitan areas (Frankfurt Rhine-Main).

7.3 Lessons learned

Since, in a literal sense, the question of how to respond to climate change is still rather new in terms of the agendas of Europe's metropolitan areas – in particular in connection with IMP – unsurprisingly the lessons learned identified here focus primarily on how IMP can help to combat urban sprawl. However, as mentioned above, these two challenges and their respective reflexes in terms of concrete initiatives and interventions can cross-fertilize each other. In other words, most of those targeted on using IMP to combat urban sprawl, can – it is expected – also help to respond to climate change. In addition, it became clear that most of the recommendations that are shared by the group are at least implicitly included in the 'expectations and rationales' (cf. chapter 7.1). As such, we can clearly discern 'between the lines' here opinions on 'what is good and what *should* be done', opinions which are, however, not only based on long-standing experiences. As mentioned above, another observation here is that in view of 'IMP and climate change response' the discussion within the group was much more focused on mitigation than on adaptation strategies. Apparently the reason for this lies in the nature of the concept of polycentricity, which, at least in its application, is rather more focused on

changing/maintaining physical structures (urban fabric, transport networks) than on changing/maintaining processes or institutional reflexes.

The blueprint - Densification plus an efficient transport system is required in order to make IMP work (?)

Nevertheless, in terms of common ground one can easily detect that the concept of IMP is here coupled with the goal of densifying certain centres together with the development and protection of some green belt areas in order to structure the polycentric urban landscape in a particular fashion. This has to be considered in line with developing transport axes/nodes and a reliable and efficient transport system. The two plainest lessons in this respect that have been identified by the group are the following: In view of shaping the urban fabric one has to bear in mind that higher densities must be linked to increase stronger and diversified centralities (e.g. in terms of centres for the labour market and the quality of urban amenities). This, however, demands powerful planning instruments. In terms of preserving open space and thus contributing to the limiting of urban sprawl it has also been argued that green corridors/belts and the idea of linking them together into so-called regional parks has proved to be a successful instrument in this respect.

Cooperation between various stakeholders is required

Other 'lessons learned' emphasise, for instance, organisational issues and how specific modes of governance should be re-shaped in this respect. It was quickly noted that cooperation with various actors/institutions is needed (e.g. transport companies/providers, brownfield site landowners) once one tries to apply the IMP concept to combat urban sprawl and to respond to climate change as it was described in the chapter on 'expectation and rationales'. In order to maintain or even create IMP in a morphological and functional manner a strong 'regional' self-government system is required that is also able to facilitate an intra-regional dialogue. This is required in order to raise awareness and understanding of the issues at hand. In addition, consistency in planning activities at all levels is central, since to promote/apply IMP with a view to responding to the challenges discussed above undoubtedly requires a 'long-term' strategic approach.

8 Promoting economic competitiveness and functional labour divisions between centres

In this chapter we reflect on the concept of IMP in terms of its potential to enhance economic competitiveness which, in our discussion, brought us closer to an understanding of the basic concept's general pros and cons. The chapter also reflects on another fundamental characteristic of IMP, namely, that of the inter-relations and labour divisions between centres and how this can be tackled through strategic spatial planning.

8.1 Major challenges and expectations

Worthy of particular mention here is the fact that some members of the group remain rather doubtful of whether a polycentric metropolitan area offers better pre-conditions for regional competitiveness or a greater economic restructuring capacity as compared to a monocentric one (e.g. Metropolitan Region Rotterdam - The Hague). One exemplary argument here notes that any attempt to strive for more polycentricty generally reduces the potential to exploit the available critical mass in terms of agglomeration advantages. What has been admitted, however, is that a polycentric metropolitan area might be advantageous in economic crises if the responsible actors and institutions have managed to develop a diverse economic structure (something which a monocentric metropolitan area can also, of course, develop).

Better spatial balance

Others have argued that IMP can indeed be helpful in respect of reducing the disadvantages of agglomeration in the central city as well as in diverting its concentric expansion towards specific centres beyond the central area (e.g. Île-de-France, Naples Metropolitan Area, and Warsaw Metropolitan Area). In cases where metropolitan areas retain a rather monocentric territorial layout, it is expected that IMP may even be the key to creating a better spatial balance between the major centre and the rest of the metropolitan area, while continuing to recognise and protect the economically and culturally special roles that the centre provides (Helsinki City-Region, Sofia Metropolitan Area, Stockholm Region). In this context it has also been noted by these experts representing the aforementioned metropolitan areas that urban functions such as jobs, health centres, social services, leisure and culture can all be decentralised successfully without undermining the role of the centre.

It has also been stressed that developing attractive growth centres can help to strengthen overall regional competitiveness and can thus support the ongoing restructuring processes (Tri-City, Rotterdam/The Hague, and Stockholm Region). Their

concern is also that by developing 'distinct' centres firms can more easily tap into the metropolitan area's agglomeration advantages (such as a larger potential labour force and a better match between supply and demand, a more diversified economy/cultural attractions/residential and business environments and, finally, better amenities and transportation facilities). Consequently it is expected to make *"the existing 'economic profile' of the different centres more visible and robust"*. In that sense IMP could help to promote regional competitiveness as well as territorial cohesion within a metropolitan area.

Diversified economic structure

In general a strong belief exists in the group that IMP offers the opportunity to promote a diversified and innovative economic structure that can strengthen the metropolitan area's capacity to compete against other areas. A few individual experts even stated that a 'polycentric economic system' composed of different sectors/clusters can better resist the vagaries of the current economic crisis and is likely to be more flexible in respect of the inevitable changes that such a crisis brings about (e.g. Emilia-Romagna, Stockholm Region, and Frankfurt Rhine-Main). Another fundamental expectation here is that IMP can positively trigger competition between regional institutions and therefore leads to an efficient use of infrastructure capacities (here Metropolitan Region Central Germany). Especially at times of downturn in the economy inter-municipal cooperation (e.g. for providing/maintaining infrastructures) can be a vital tool to save money. If a good level of intra-metropolitan co-operation is achieved (i.e. between centres/municipalities) IMP could thus help to generate a higher critical mass enabling the area in question to become attractive for major transport infrastructures (High-Speed-Trains, airports) or other flagship-projects (international museums, culture/sports events). This has been pointed out by all Members of the Expert Group.

A number of specific additional challenges exist in this respect: One such being that the share of costs and benefits has to be clarified within the metropolitan area – in particular if the medium-size level is missing, since small centres are usually quite reticent about simply being subordinated to decisions taken in the 'central city' (e.g. Île-de-France, Sofia Metropolitan Area). Another point raised here is that either to empower the existing multi-functional centres or to develop new ones demands a complex multi-sectoral policy approach and thus a broad commitment from numerous stakeholders within and partly even beyond the metropolitan area (e.g. at the national level such as Tri-City Agglomeration and Warsaw Metropolitan Area).

IMP: How useful a concept is it?

The rather controversial issue of whether IMP is at all a useful concept in the promotion of functional labour divisions between centres has also been discussed within the group. Some think that IMP offers a broader choice of locations for economic activities and thus better responds to investors' needs. In that sense it can stimulate competition, specialisation and finally a clustering of economic activities, which makes the entire metropolitan area more competitive (e.g. Emilia-Romagna, Frankfurt Rhine-Main, Metropolitan Region Central Germany, and Metropolitan Region Rotterdam - The Hague). A further positive expectation in this respect is that IMP can help to strengthen distinct centres, i.e. to widen their functional profile and to make them more attractive for investors/households helping them become more competitive in relation to the uncontested regional centre, or the central city in this case (e.g. Stockholm Region, Helsinki City-Region).

Regarding the latter point a rather sceptical voice rightly however stressed that to assume that 'binding agreements' on the special profiles/functions for each centre could be voluntarily reached and that public stakeholders are routinely able 'to influence market forces' is rather naive (Frankfurt Rhine-Main). Among the sceptical members of the group are those whose agenda is primarily focused on maintaining IMP. *"A functional division of labour is not what we explicitly strive for – it is reality and we do not need to enforce it even more – rather we want to emphasise the differences within our metropolitan area such as diverse business and residential environments."* Hence it is felt to be more appropriate just to advertise existing economic profiles or clusters of different centres as 'the metropolitan area's' competitive assets (here Metropolitan Region Rotterdam - The Hague, Metropolitan Region Central Germany).

8.2 Reflecting current practices

With regard to the question of viewing IMP as a useful concept through which to promote economic competitiveness several current approaches were highlighted by the expert group. In particular numerous differences can be identified among those metropolitan areas that seek 'to create IMP'. For instance one expert stressed that the new action programme being developed in cooperation with the municipalities aims at increasing the general attractiveness of the urban growth centres that are to be developed in 'their territories'. This also includes developing those functions which currently only exist in the 'uncontested central city' (Stockholm Region). A further approach from another metropolitan area motivated by its own new strategic spatial plan utilises the IMP concept to promote a more spatially cohesive development corridor 'east-west' to act as a balance to the strong northern territory investment corridor at present (Helsinki City-

Region). A rather different current reflex by local actors and landlords is to bundle together activities in some specific centres by making efforts to improve public transport and services, and by promoting a better mix of housing and economic activities. This is necessary due to the spatial re-location of more and more back-office activities (and partly also headquarters) to the outskirts (Île-de-France, Sofia Metropolitan Area).

Promoting functional labour divisions

On the issue of promoting functional labour divisions between centres very different realities, contexts and stages of application are to be found in the twelve metropolitan areas that constitute our expert group. Indeed a few of our areas felt the need to clarify their situations by noting that although IMP is not an explicit objective in the current strategic spatial plan for the metropolitan area a sectoral clustering of firms is recognisable thus forming a polycentric pattern (e.g. Warsaw Metropolitan Area). Others have stated here that strategic spatial plans at the municipal and at the city-regional level have only recently been launched to promote IMP. Therefore it is rather difficult to reflect here any current practices. A more specific characteristic has however been forwarded by another expert. The regional plan there does not highlight 'special and distinctive profiles' for the eight urban growth centres outside the central city that are to be further developed in the next two decades or so, rather, it seeks to stimulate a 'wider functional mix' in each of them (such as Stockholm Region).

Related to this the group debated quite intensively the question of how far IMP can be said to be 'simply' market driven or whether it is also a result of strategic spatial planning. Here we agreed to distinguish between those initiatives (such as cluster activities, new business parks or industrial zones) that are initiated through public incentives and those that are almost solely market driven. *"In our daily work we are keen to support clustering activities that appear to be market driven".*

Further rather concrete examples of the utilisation of the polycentric assets of a metropolitan area include cooperation between airports (e.g. to bring the two existing city-regional airports within one holding) or to strive for more distinguishable profiles between the metropolitan area's Higher Education Institutions (HEIs).

8.3 Lessons learned

Concerning the question of whether IMP is indeed a useful concept in the promotion of economic competitiveness to begin with a rather fundamental statement shall be reflected upon, which brings us once again back to the question of the pros and cons of polycentric metropolitan areas as compared to monocentric ones. Here one expert has

drawn upon some recent research findings that have shown that polycentric metropolitan areas seem to be less able to exploit their critical mass compared to monocentric ones. On the other hand, the balance between agglomeration advantages and disadvantages appears to be better in polycentric metropolitan areas. If we feel that IMP should be considered as something to be strived for, then more research is needed to show that it is advantageous, since we still do not know enough about it.

The bundling of different interests - walking a tightrope

An almost globally shared experience across the group here is that *"the more polycentric a metropolitan area is the greater likelihood that different interests exist"*. Hence cooperation cannot be imposed, but needs incentives and other forms of support (carrots). In addition, coordination is needed to ensure that the entire metropolitan area is developed consistently in relation to a 'single concept of IMP': *"The most successful experiences in creating new centres in our metropolitan area are those of the 'new towns' due to the comprehensive long-term strategy that has been applied there"*. Others noted that strong coordination in particular is needed in view of land-use policies. Otherwise the risk remains of a 'race to the bottom' by offering dumping prices (low taxes and/or land prices), which would not be of any benefit in the long run to anywhere in the metropolitan area as a whole.

A lack of coordination has also been highlighted in a similar situation where a more 'mature' model of IMP is currently being promoted. Here the different municipalities invite companies to locate their businesses in specific centres. Unfortunately, thus far the experiences gained are rather negative due to the observable competition in respect of these same clusters or firms which often ends up in a zero-sum game instead of making the centres more diverse. More specifically, in terms of 'economic transformation', the development of local growth centres (that are not only retail centres) has been highlighted, something which requires a consequent spatial strategy of business development covering the entire metropolitan area with a corresponding mode of governance. Here it has also been noted that in such cases the centres' profiles should not be defined too narrowly, since restructuring processes in the economy can occur very rapidly and such well-defined policies thus become quickly redundant.

On the limited power and scope of spatial planning

Further discussion within the group brought us again to the question of the power and scope of strategic spatial planning. The dilemma in view of promoting IMP can be described as follows: Although 'markets' are the main, and uncontested, determining factor four key tools remain to strategic spatial planning – understood at least in a

broader sense and certainly with strong variations across different countries and metropolitan areas - namely, to regulate or at least influence land-use, levels of taxation and other inducements, land-markets and public transport. It was also emphasised here that the need to try to play within the rules of market forces not against them and to plan with market forces 'in mind' remains paramount.

Greater consensus could be found among the group in respect of another statement, namely, that spatial planning lacks any tools for instance to avoid the current re-location of headquarters of multi-national firms from the centre to the outskirts of the metropolitan area. In this context it has also been argued that public investments in the transport sector, made to balance regional development, have only a minor effect on the location strategies of firms: *"they tend rather to exploit potential synergies with other firms in more prestigious locations".*

One expert also reminded us that the question of labour division between centres as it relates to polycentricity is primarily a result of historically distinct urbanisation and industrialisation processes (and thus different kinds of markets), and not necessarily that of strategic spatial planning. In particular voices from those metropolitan areas that are – more or less – still in the transformation phase from a 'planned' to a 'market' economy have described the difficulty in balancing the planners' interests and the interests of pure market actors.

It should also be noted here that market forces can change the centres' profiles within a polycentric urban configuration, which also has an effect on the labour division among them. At times of economic crisis however the majority of the group argued that the existing strong labour division and the specialisation of centres are valuable, but disadvantageous in respect of reacting to economic change.

Further viewpoints

Other voices stated that the most important issue here is to develop a structure with attractive growth centres that can attract new investment and thus can adapt to changing market needs – here a good urban environment, good public transport and regional/sub-regional accessibility are the key ingredients.

In a fairly comparable context the interplay with a efficient public transport system has been taken up again as experience shows that the re-location of firms to non-integrated, but easily accessible locations by private car can only be avoided if policies focus solely on promoting centres with a good level of public transport - *"only then a polycentric*

metropolitan area becomes reality". Other lessons and experiences emphasised the role of 'transport corridors', since they can impede the 'bundling' of functions (i.e. creation of centres) in cases where they are not linked by such corridors. It is also generally recognised in this context that market-driven clustering often occurs in locations with poor Public Transport accessibility.

Another rather negative point here is that the application of IMP has not avoided a general re-hierarchisation within the metropolitan area in favour of the central city, since the old pattern still prevails with prestigious knowledge-intensive business services (KIBS) there and back-office-functions in the 'new towns'/'second or third-tier centres'. It has also been reported that previous attempts to develop more complementarities within the metropolitan area have failed, but the different municipalities (with their centres) have understood the lesson here and now actively try to avoid duplicating each other. This may however, over time, lead to a more functional division of labour.

Unsurprisingly in this context the question of the appropriate governance-style has been taken up again, due to some rather negative experiences such as describing the current division of labour as a 'win-lose situation' with little hope that there will be any voluntary cooperation in the future. Here it has been argued that recent research (interviews with lord mayors etc.,) reveals that functional labour divisions are desirable but hard to achieve. Other experiences show that striving for complementarities also needs 'top-down' incentives ('carrots and sticks') to help place this issue squarely on the 'metropolitan area's agenda'. Otherwise, i.e. if political and organisational coordination is lacking, IMP can easily lead to increasing transaction costs and the duplication of similarly-focused institutions (e.g. for economic development, cultural affairs).

C Visiting the participating metropolitan areas - 12 'brief portraits'

Please note: The basic information for the following 12 'brief portraits' has been provided by the members of the Expert Group and edited by Peter Schmitt (Nordregio). The editor, however, cannot take responsibility for the correctness of the contents and the figures presented in what follows.

1. Emilia-Romagna

Size:
22 124 km2

Population:
4' 337 966

Population Density:
196 inhab/km²

2. Frankfurt Rhine-Main

Size:
2 459 km²

Population:
2' 202 231

Population Density:
896 inhab/km²

3. Helsinki City-Region

Size:
6 730 km² (Uusimaa)

Population:
1´ 442 000

Population Density:
212 inhab/km²

4. Île-de-France

Size:
12 011 km²

Population:
11' 400 000

Population Density:
964 inhab/km²

5. Metropolitan Region Central Germany

Size:
54 105 km2

Population:
9' 500 000

Population Density:
175 inhab/km²

6. Metropolitan Region Rotterdam-The Hague

Size:
2 818 km² (Zuid-Holland)

Population:
3' 458 875

Population Density:
1 227 inhab/km²

7. Naples Metropolitan Area

Size:
1 171 km²

Population:
3' 083 060

Population Density:
2 632 inhab/km²

8. Sofia Metropolitan Area

Size:
6 299 km²

Population:
1' 453 000

Population Density:
230 inhab/km²

9. Stockholm Region

Size:
6 500 km²

Population:
2' 011 047

Population Density:
310 inhab/km²

10. Tri-City Agglomeration

Size:
3 077 km²

Population:
1' 213 000

Population Density:
394 inhab/km²

11. Veneto Region

Size:
18 391 km²

Population:
4' 910 170

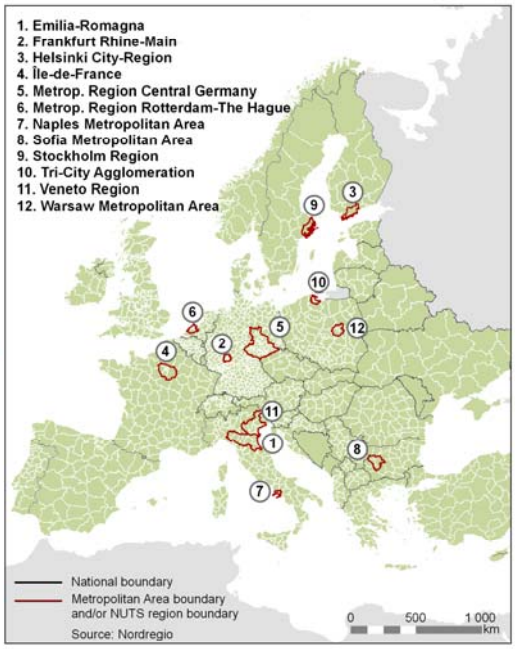
Population Density:
266 inhab/km²

12. Warsaw Metropolitan Area

Size:
6 205 km²

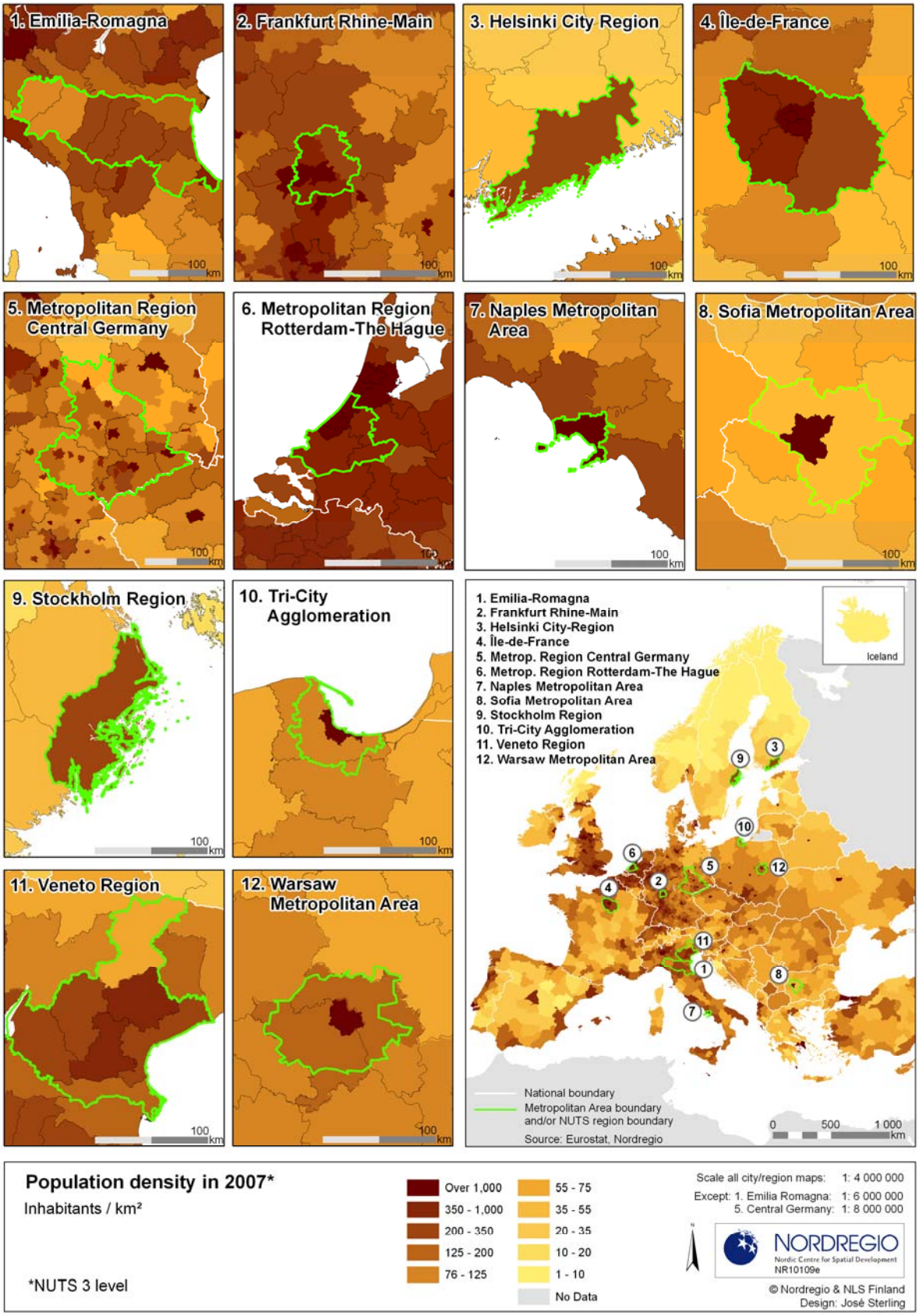
Population:
2' 981 771

Population Density:
481 inhab/km²



General facts

NORDREGIO
Nordic Centre for Spatial Development



Population density in 2007*

Inhabitants / km²

*NUTS 3 level

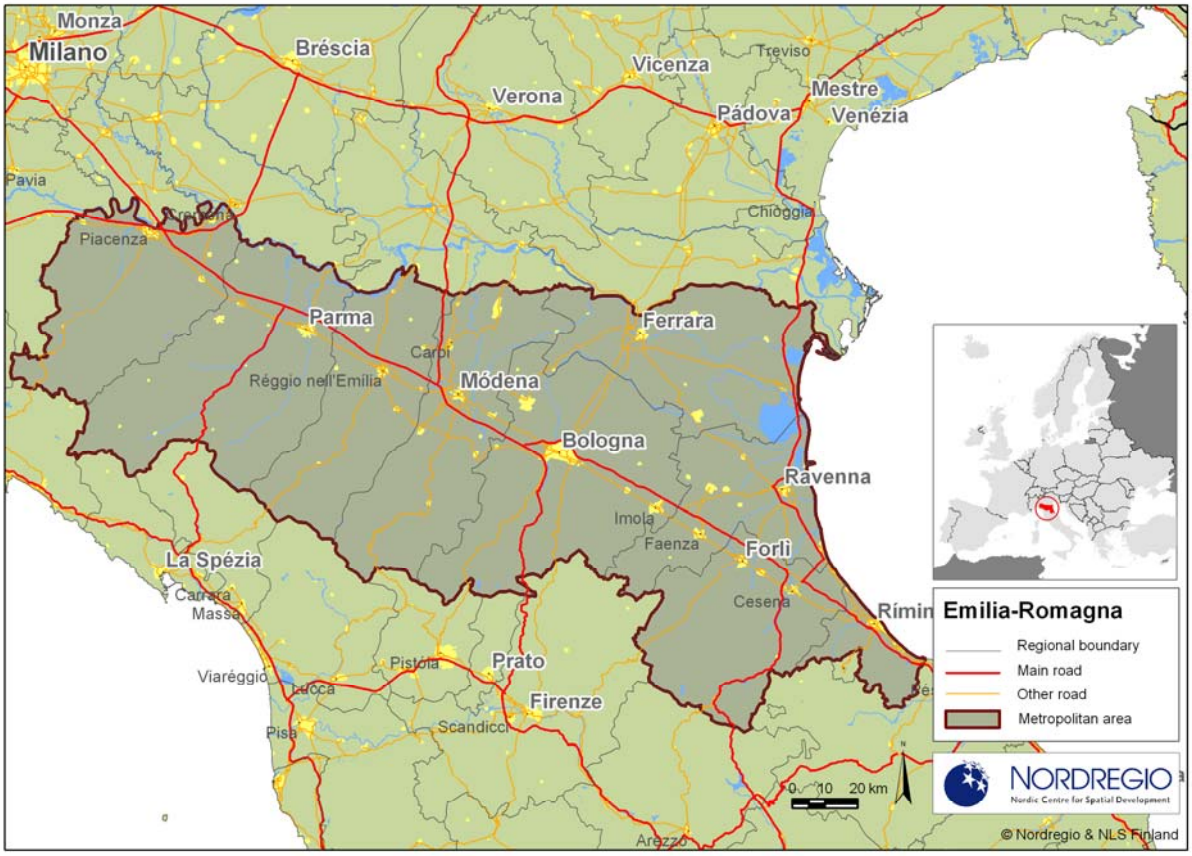
Over 1,000	55 - 75
350 - 1,000	35 - 55
200 - 350	20 - 35
125 - 200	10 - 20
76 - 125	1 - 10
	No Data

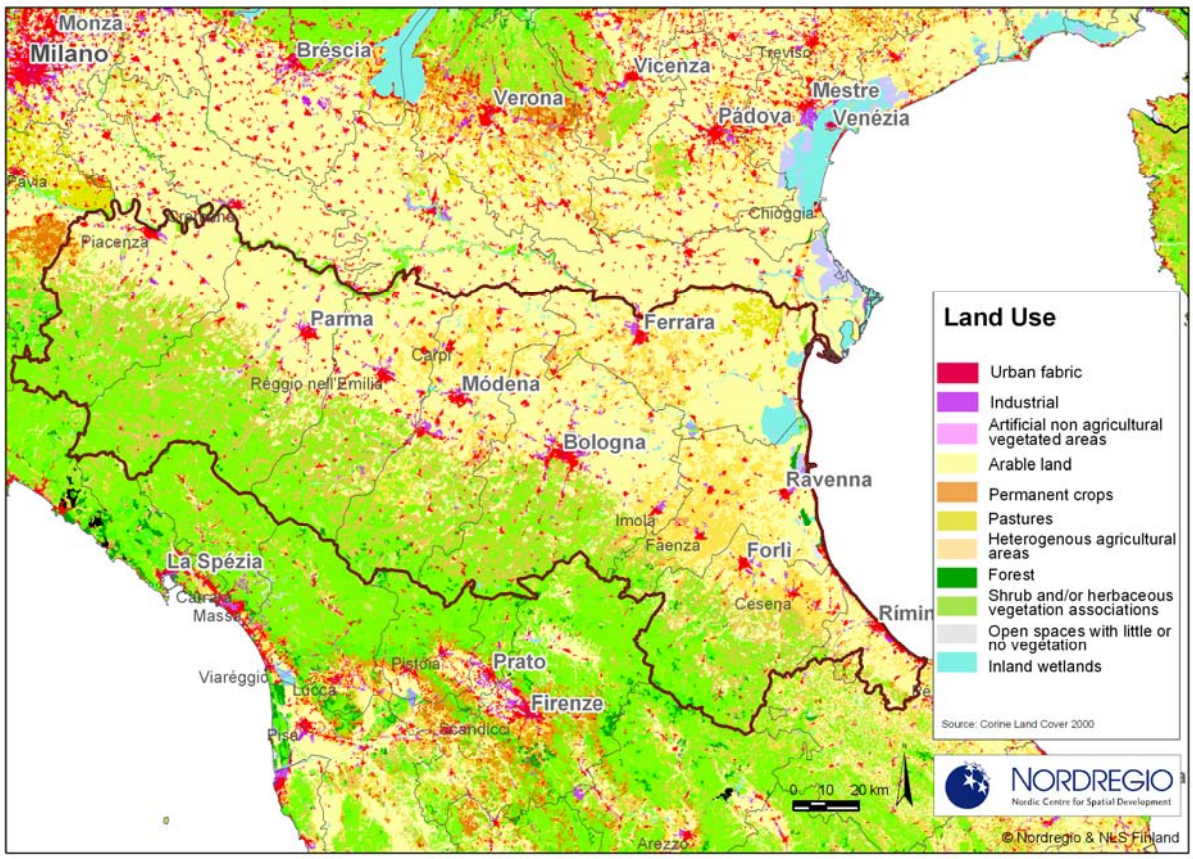
Scale all city/region maps: 1: 4 000 000
Except: 1. Emilia Romagna: 1: 6 000 000
5. Central Germany: 1: 8 000 000

NORDREGIO
Nordic Centre for Spatial Development
NR10109e

Design: José Sterling

1. Emilia-Romagna





Territorial Dynamics

The Emilia-Romagna metropolitan area encompasses a large polycentric urban pattern organised around 16 medium-sized cities and approximately 30 small towns which is similar to the Emilia Romagna region (*Regione*). It is a fast growing metropolitan area (+8% inhabitants between 2000 and 2009) and today has 4.34 million inhabitants. That increase is basically due to immigration, which has a significant impact on the demand for housing and has led to the subsequent expansion of the urbanised area.

Functional profile

The functional urban structure of Emilia-Romagna is constituted by 16 main cities. In the following the dominant branches are highlighted:

- Bologna (metropolitan area: 585 659 inh.): capital of the region with administrative function, finance, logistics, agricultural product trade, trade fair, university, hospitals and medical services of a high level (transplant, research, etc.), international airport. Important industrial sectors include mechanics, machine tools, packaging machines, industrial electronic devices.
- Parma (182 389 inh.): food processing, food industry or machinery, university, specialised hospital
- Modena (181 807 inh.): automotive, mechanics, university, specialised hospital.
- Reggio-Emilia (165 503 inh.): agricultural machinery
- Ferrara (134 464 inh.): agriculture, chemical industry, culture, university.
- Forlì (116 208 inh.): food industry, furniture
- Piacenza (101 778 inh.): mechanics, automatic production systems, logistics.
- Cesena (95 525 inh.): food industry, information technologies, specialised hospital.
- Imola (68 019 inh.): mechanics
- Carpi (67 203 inh.): textiles, mechanics
- Sassuolo (41 506 inh.): ceramic tiles
- Fidenza (25 318 inh.): glass and chemical industry

In Emilia-Romagna we can distinguish between different levels of polycentricity. Around Bologna there are a number of small towns, with residential and productive functions. Together they form the Bologna metropolitan area. The provinces of Modena, Reggio Emilia and Parma constitute a polycentric area organised around these three medium-sized towns plus some additional small towns (such as Carpi, Sassuolo). Romagna (the eastern part of the region, near the Adriatic Sea shore) is characterised by several urban patterns with many closely related towns (such as Rimini, Cesena, Forlì, Ravenna, Lugo and Faenza), a sort of urbanised rural area, with a very high quality of life.

Planning and governance structure

By law the Region (*Regione*) is the body enabled to promote interactions between various administrative planning levels (regional, provincial and municipal). This favours cooperation between local bodies as well as consultation with economic and social authorities in respect of spatial planning policies.

Levels of competence and main responsibilities in spatial planning

Administrative body	Name of the plans	Main Responsibilities
State		sets out regulatory and financing laws, strategic planning at the national level
The Emilia-Romagna Region	Regional Territorial Plan (PTR)	regional territorial planning, projection of large-scale infrastructures, regulations and directives for the PTCP (see below), urban policies
Provinces	Territorial Plan for Provincial Coordination (PTCP)	proposals, directives and regulations for land use and the preservation and careful management of the environment and of natural areas and resources; the conservation of natural landscape and historical heritage; landslide and flood risk prevention.
Municipalities	Municipal Structural Plan (PSC), Operative Municipal Plan (POC), Town Building Regulation (RUE)	urban/local planning, urban regeneration

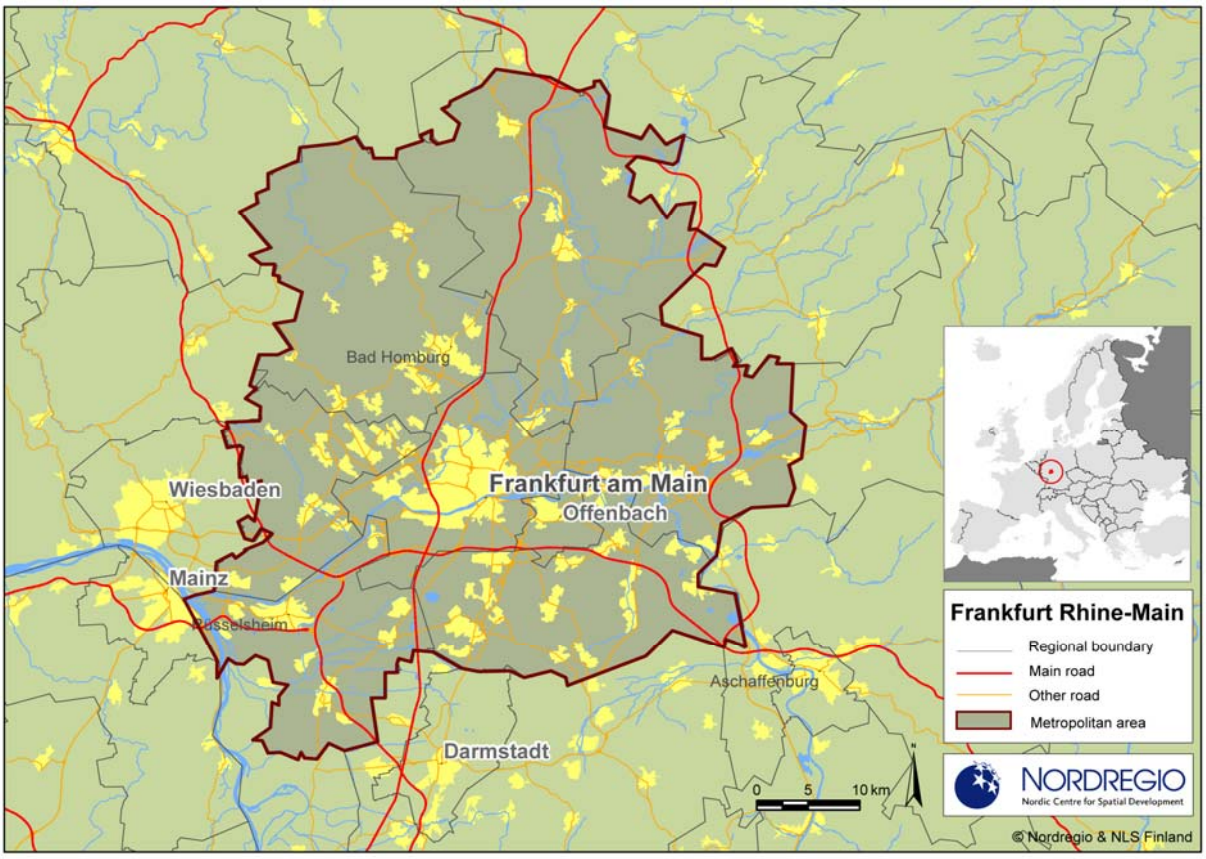
Content of planning tools at regional/local levels

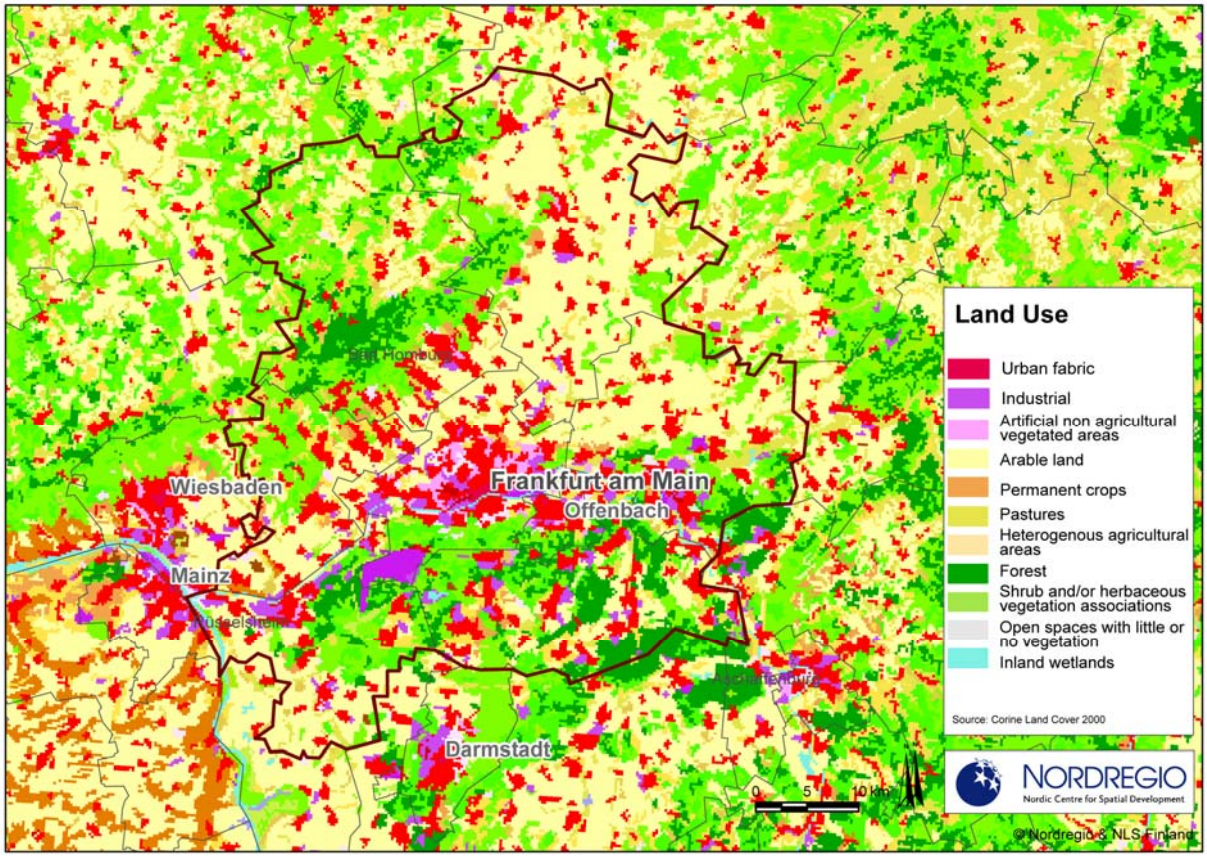
Tool	Body	Responsibilities	Parties involved	Territorial scope
Regional Territorial Plan (PTR)	Emilia-Romagna Region	regional territorial programming, large-scale infrastructural works, proposals and directives for the PTCP, regional laws	provinces, municipalities, mountain communities	entire region
Territorial Plan for Provincial Coordination (PTCP)	Provinces	proposals, directives and regulations for the use and protection of land, assimilation of planned interventions from the regional and national level	regions, bordering provinces, municipalities, mountain communities	entire province
Municipal Structural Planning (PSC)	Municipalities	strategic urban planning, identification of urban regeneration areas, identification of physical interventions to be actualised by the POC	provinces, bordering municipalities, mountain communities, bodies managing protected natural areas	entire municipality
Operative Municipal Planning (POC)	Municipalities	operative urban planning, urban building regulations	planning meetings open for districts and parties recognised by municipal statute or municipal regulations	parts of the municipal territory identified in the PSC

The informal multi-level governance structure

In the elaboration of spatial and urban plans, the region, the provinces and the municipalities consult other local public authorities. Institutional consultation tools include such things as conferences and various types of agreements including territorial agreements. The aim of such conferences is to create a mutually shared information report covering the territory and the subsequent limits and conditions of sustainable development, as well as to make preliminary assessments regarding the intended objectives and options proposed in the preliminary document of the plan. All territorial bodies, administrative levels and interested stakeholders involved in (or effected by) the plan are encouraged to participate.

2. Frankfurt Rhine-Main





Territorial Dynamics

The Frankfurt/Rhein-Main metropolitan region as agreed upon by the National Standing Conference of Ministers Responsible for Spatial Planning (*Ministerkonferenz für Raumordnung*, MKRO) incorporates a number of cities with more than 100,000 inhabitants, such as, Frankfurt, Wiesbaden, Mainz, Darmstadt and parts of three Federal States (*Bundesländer*), namely Hessen, Rhineland-Palatinate (Rheinland-Pfalz) and Bavaria (Bayern). The area of the Planning Association (*Planungsverband*) Frankfurt/Rhein-Main (the Regional Planning Association) however, only covers the central area of that metropolitan region (including the main cities Frankfurt am Main, Offenbach am Main and Hanau – all located in the Federal State of Hessen). The statements in this report refer to the core of this region, defined by the law of the *Land* of Hessen with the *Planungsverband Ballungsraum Frankfurt/Rhein-Main* as its Planning Authority.

The area within the Frankfurt/Rhein-Main Planning Association saw relatively strong growth in its population between 1987 and 2006 (9.3%), due to in-migration, partly resulting from the political changes in the East. This growth will slow in the future to 2.2% between 2002 and 2020. The ongoing ageing of population will continue – and it is foreseen that in 2020 the share of inhabitants aged 65 and older will be 24%. The current fertility rate is rather low (1.4 children per woman). There are some signs of a 'back into

the cities' trend ('re-urbanisation') due to the desirability of urban lifestyles, ease of access to different kinds of infrastructure etc., which might affect not only Frankfurt, but also some of the other main cities. In addition we can observe other motives for intra-regional moves, such that even the more peripheral towns and cities can expect moderate growth rates.

Functional profile

Frankfurt of course dominates the metropolitan region in terms of attracting major headquarters (for instance of banks) and other knowledge-intensive services. In addition it is Germany's main hub in the aviation network, as well as boasting a number of excellent universities and a high-tech chemical industries cluster. Other important centres include Offenbach am Main with its renowned University of Arts (*Hochschule für Gestaltung*), Hanau (high-tech chemicals), Rüsselsheim (Opel car factory) and Eschborn (back offices of banks and related industries). Due to the polycentric nature of this region in its wider definition (see above), there is no clear periphery. In addition landscape quality also plays a role here for instance with regard to the slopes of the Taunus Mountains and the Wetterau Basin, both of which are popular locations for high-quality homes and businesses.

A formal hierarchy exists through the definitions given within the Land Development Plan (*Landesentwicklungsplan*), with Frankfurt, Offenbach and Hanau being high-level centres (*Oberzentren*) with different kinds of infrastructures and services of regional, national and international importance and some 25 middle-level centres (*Mittelzentren*), with high-level establishments for the economic, cultural, social and political sectors and for private services. This systematisation, however, reflects reality only in the broadest sense.

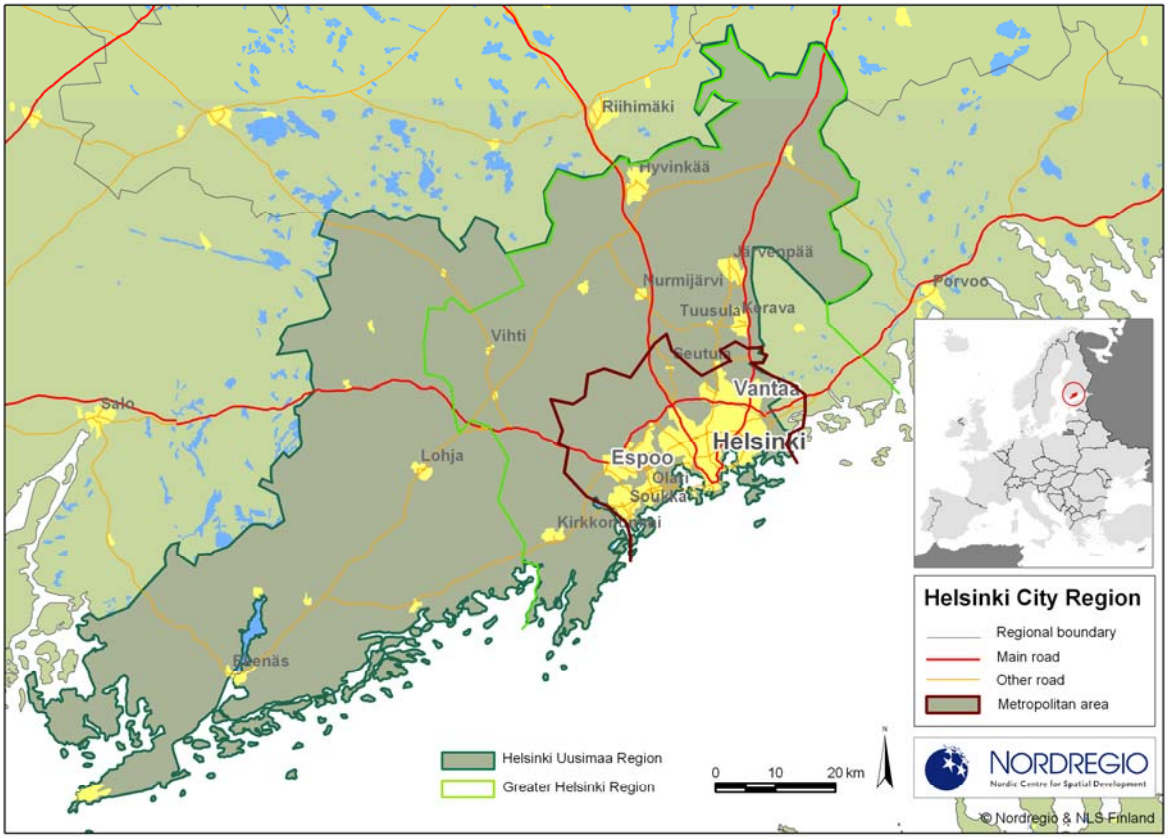
Planning and governance structure

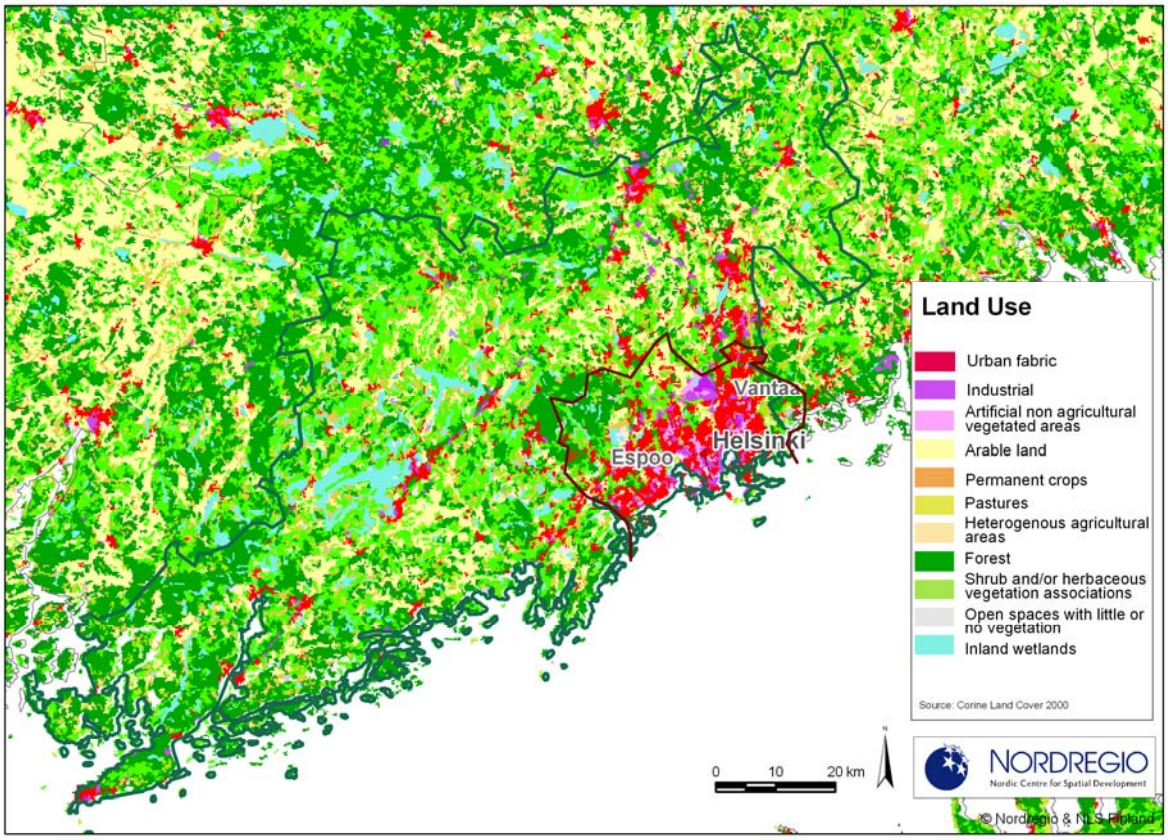
The complex setting and interplay of these structures can best be explained by describing the different layers that constitute them.

- **Layer 0:** The autonomy of German municipalities is guaranteed by the Federal constitution. Co-operation cannot be enforced (with some exceptions), and local planning issues cannot be imposed by higher levels of government.
- **Layer 1:** The territory of the Frankfurt/Rhein-Main Planning Association has been legally defined by the *land* of Hessen (the '*Ballungsraumgesetz*'). This demarcation is reflected in the numerous maps throughout the report. It consists of the territories of 75 municipalities, including Frankfurt am Main. The *raison d'être* of the Planning Association is the following: German municipalities usually have two central planning instruments: the land use plan (*Flächennutzungsplan*), for the territory of the entire municipality and the local detailed plan (*Bebauungsplan*), at the neighbourhood level. The crucial point here is that the Local Plans have to follow the demands of the land use plan, and as a matter of territorial coordination, in this region the responsibility for land use planning has been taken away from the municipalities and assigned to the *Planungsverband* which produces *one* unitary Land Use Plan for all 75 of its member municipalities. As a matter of innovation, this plan is now being combined with the Regional Plan, originally (and outside the *Planungsverband's* area still) an instrument of the *Regierungsbezirk*, a province-style body of decentralised *Land* administration, which should be counted as **Layer 2**.

- **Layer 3a** is the Federal State of Hessen with the Land Development Plan (*Landesentwicklungsplan*) as the core instrument in respect of spatial planning.
- **Layer 3b**: As noted previously the Frankfurt/Rhein-Main metropolitan region (the grey area in the map above) extends well beyond the borders of the Planning Association and also covers parts of the Federal States of Bavaria (Bayern) and Rhineland-Palatinate (Rheinland-Pfalz). Although the Planning Association acts on behalf of this metropolitan region it does not formally represent it. Its delimitation is based on an agreement with the chambers of industry and commerce and is a reasonable representation of the functional urban region of Frankfurt/Rhein-Main.
- **Layer 4**: At the federal level there is no explicit planning competence (only an advisory function in terms of developing spatial visions and assigning basic principles).

3. Helsinki City-Region





Territorial Dynamics

The larger Helsinki region consists of three layers: a) the wider Uusimaa region (with 21 municipalities and a total of 1.442 million inhabitants in 2009), as illustrated in the map above, b) the Greater Helsinki region (with 14 municipalities and a total of 1.320 million inhabitants in 2009), and c) the Helsinki City-Region (with four municipalities, Helsinki, Espoo, Vantaa and Kauniainen and a total population of 1.022 million inhabitants). This latter area has witnessed considerable growth in recent years as in 1980 for instance it was only home to 760 000 inhabitants.

Helsinki's future is also based around a growth scenario. It is expected that by 2030 the city of Helsinki will have grown to include over 600,000 inhabitants while the Greater Helsinki region (14 municipalities) is also expected to grow to well over one and a half million inhabitants. The recent Helsinki Strategic Spatial Plan (2008) forecasts that the Greater Helsinki region is likely to double its volume by 2050, suggesting that some 80 million m^2 of new housing and office space is likely to be built over the next 30 to 40 years.

Functional profile

Within the Helsinki City-Region, the City centre is surrounded by eight significant centres and two lesser centres with future potential. The aim is to strengthen the city centre and at the same time decentralise certain functions to stabilise and strengthen the periphery to create spatial cohesion.

Key Centres of the Helsinki Metropolitan Area:

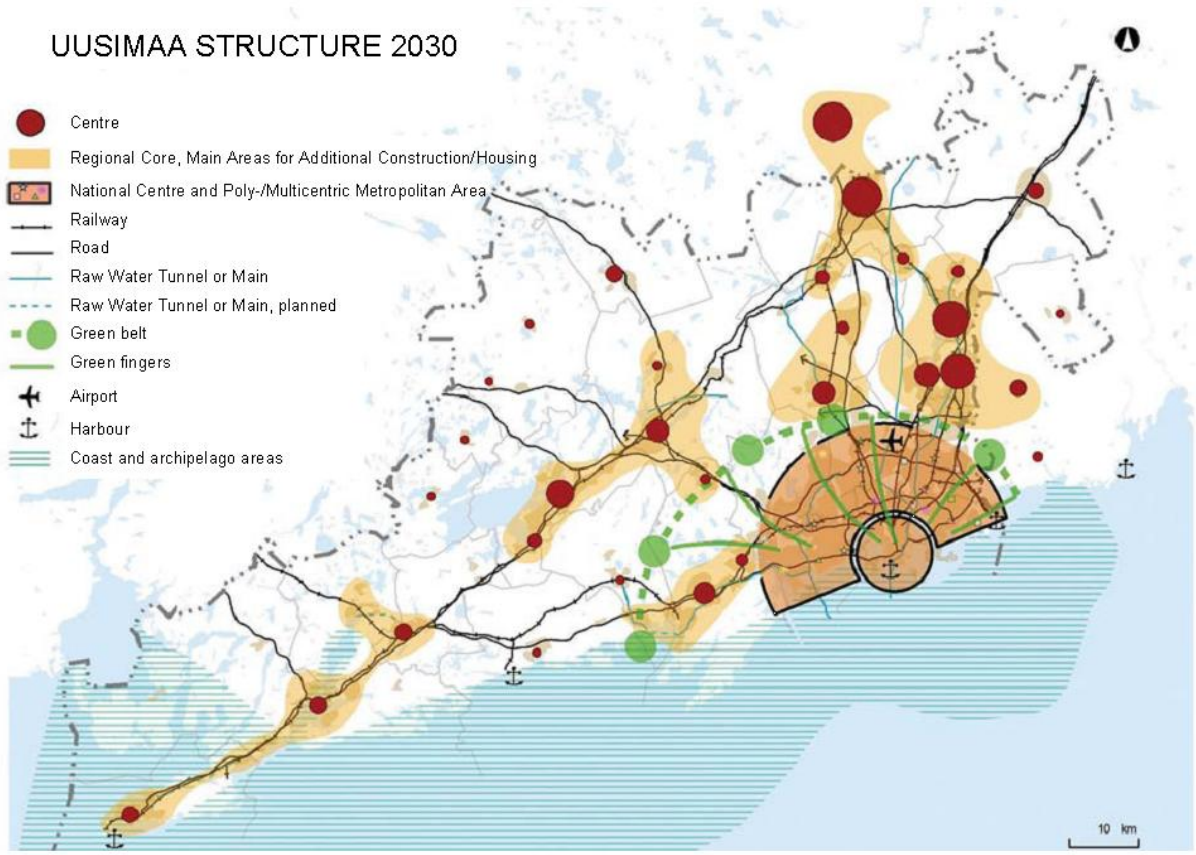
City Centre:	CBD, Finland's cultural centre & university campuses, all rail connections, main-line, metro and trams.
Pasila (3km):	CBD extension, main-line rail, metro planned
Eastern Centre (9km):	regional district centre, retail, culture and housing. metro
Malmi (11km):	retail and offices. Main-line rail
Aviapolis (16km):	City airport hub, IT and retail centre, planned metro/rail
Tikkurila (17km):	Vantaa's administrative centre, main-line rail
Myyrmäki (12km):	Secondary district centre, administration/retail centre, main-line rail
Leppävaara (11km):	Business, culture & retail centre, main-line rail
Tapiola/Keilaniemi (10km):	Espoo's hi-tech, cultural/university and retail centre, metro under construction
Espoo Centre (20km):	Espoo administrative centre, main-line rail

The Strategic Spatial Plan (2008) for the Helsinki Metropolitan Area identifies key centres of future growth to the east, north-west and east-west along the shoreline. The forthcoming City-Regional Plan, incorporating Helsinki, Espoo, Vantaa, Kauniainen and part of Sipoo, will identify in more detailed manner, an agreed set of growth centres for the metropolitan area as a whole. The key here will be locating the potential centres around public transport rail interchanges while aiming to arrest urban sprawl and provide better spatial balance regionally.

Overall, the idea is to form a 'rainbow arc' stretching west to east in order to guarantee a sense of spatial balance (see map below). The anticipated massive new growth by 2050 is expected to widen this arc, eastwards towards Sipoo (20km) and northwest towards Klaukkala (30km) and into a western development wedge towards Hista (30km), all

requiring main-line or new metro connections in order to maintain a cohesive spatial balance as the city-region grows.

The aforementioned expected growth will place considerable pressure on the need to control development positively in order to restrain urban sprawl and concentrate new investments into high density development corridors running west to east along the shoreline. Emphasis will be on developing new areas in a compact and dense configuration, in order that the metropolitan area will become integrated and urbanised, thereby enabling new investments for new metro and tram public transport connectivity to be created towards the periphery of the Helsinki metropolitan area.



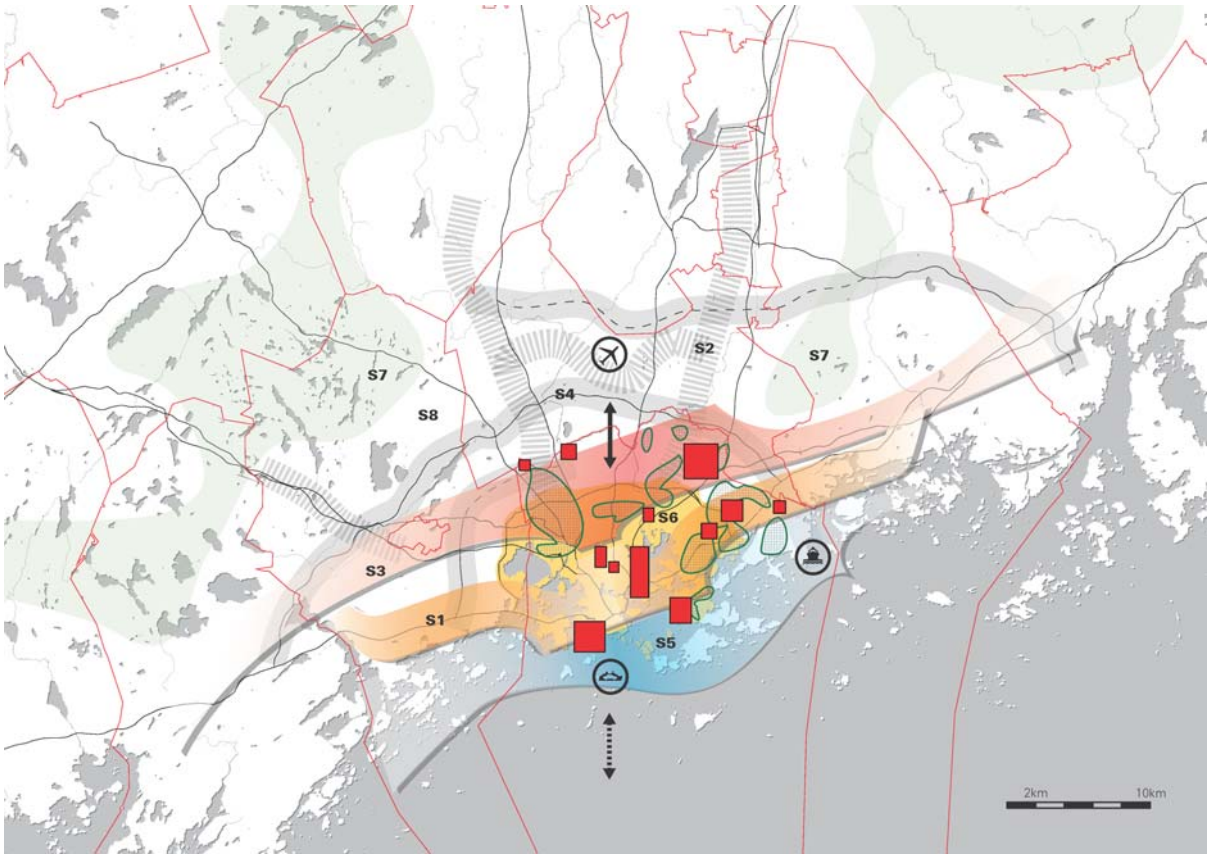
Helsinki-Uusimaa Regional Structure Map 2030

Planning and governance structure

- The Planning system is hierarchical; the higher level plans steer their lower counterparts. The National Government defines land-use guidelines, which are implemented mainly through regional plans.
- The three tiers of plans are: Regional Plan, City Master Plan, and Local Detailed Plan, the latter two are prepared and approved by the local authority. The Regional plan is drawn up and approved by the Regional Council, and confirmed by the Ministry of the Environment.
- The process is strictly hierarchical in nature. In practice, this translates into each of the higher levels needing to govern the next planning stage, as well as the lower plan having to be in agreement with the higher plan.
- For the Helsinki region the overall formal plan is thus the regional plan (*maakuntakaava*) prepared by Uusimaa Regional Council. The regional plan includes

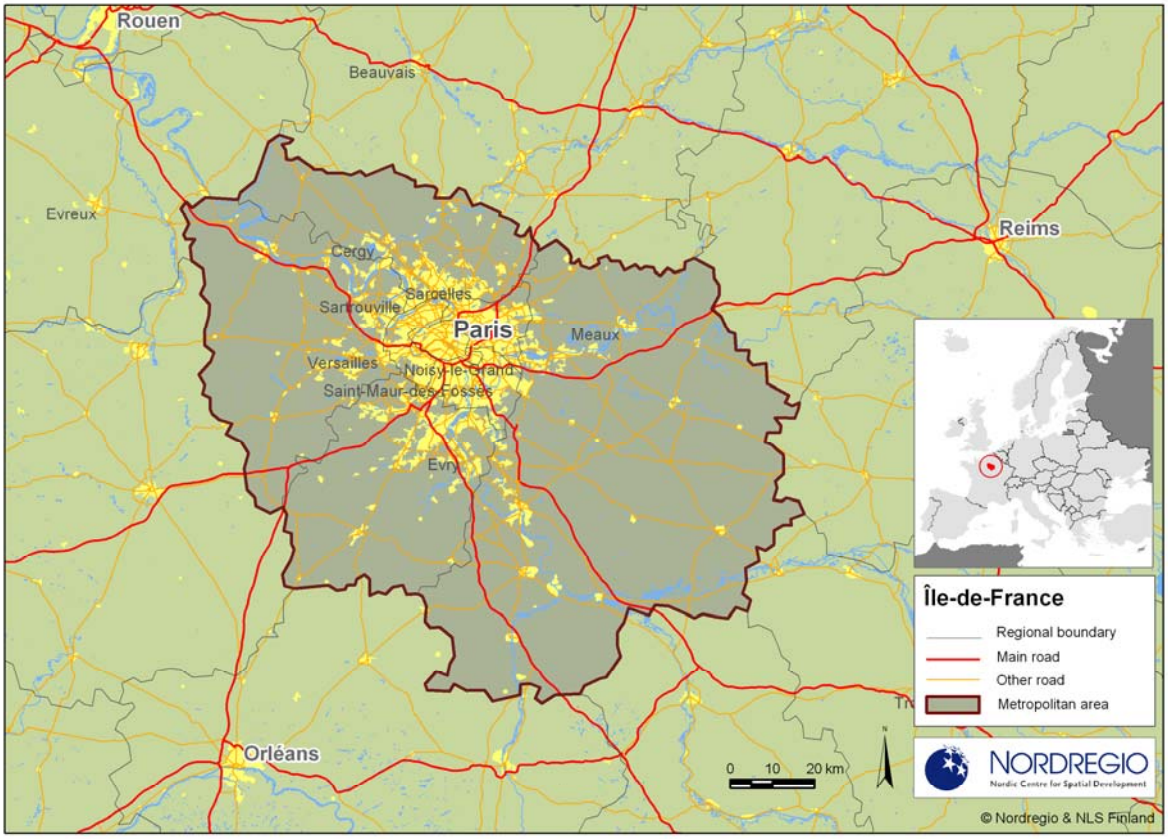
a set of structural guidelines that are legally binding. The Ministry of the Environment has to ratify the Plan. The Ministry expects that the City of Helsinki's development strategy should broadly compliment the regional plan.

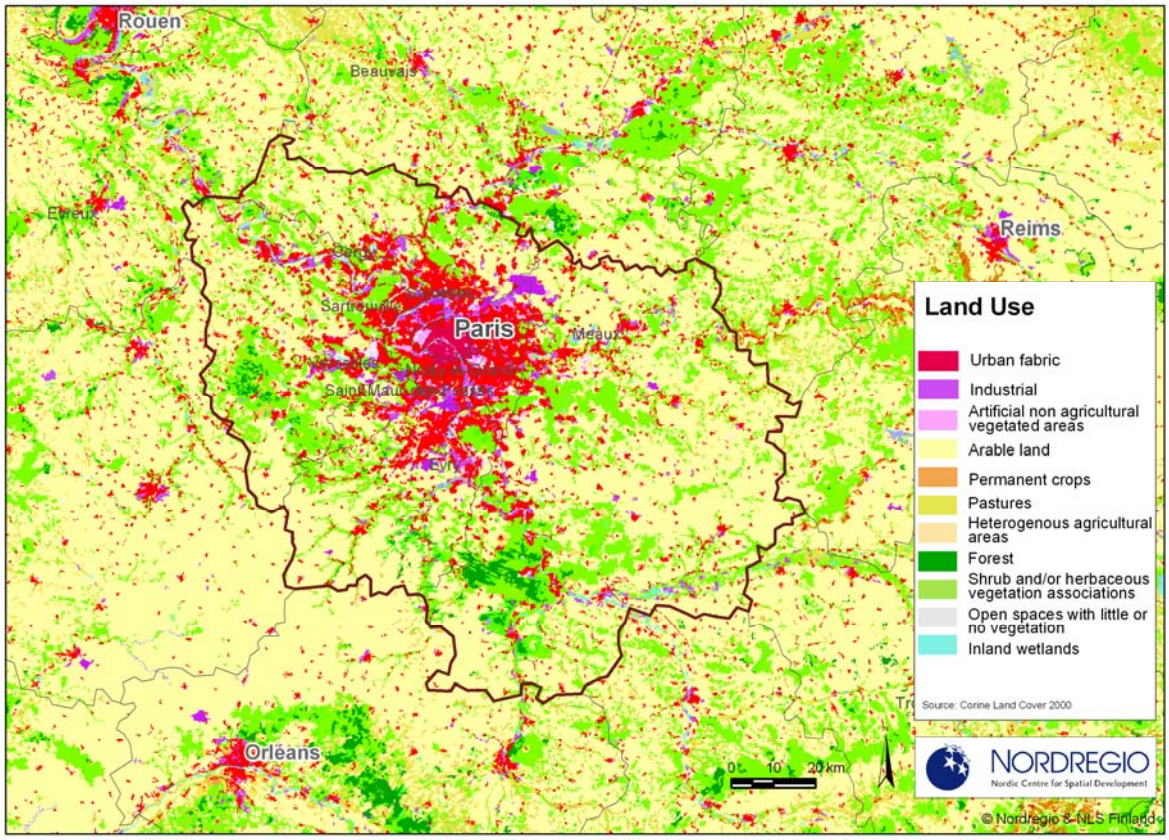
- The Greater Helsinki Region consists of the closest spatial set of local authorities surrounding the City of Helsinki. This loose-knit set of 14 municipalities formed a single totally informal cohesive whole to undertake an International Competition – A Vision – in 2008 for the wider regional development. It was the first time that the 14 municipalities co-signed an agreement; in this case to create a long term strategic Vision for 2050.
- The Helsinki Metropolitan Area Council, known formally as YTV, was divided into two new separate organisations in 2010: The HSY, the Helsinki Region Environmental Services Authority which deals with water and waste management and the HSL - Helsinki Region Transport, which is responsible for public transport in the Helsinki metropolitan region.
- The City of Helsinki's 2002 master plan (*yleiskaava*) covers the entire city. It is a land-use zoning map designating areas of land in terms of five broad categories (mixed metropolitan uses, housing, public utilities and technical services, commercial and recreation and parks). The main traffic network and future plans form a material part of the master plan. The provisions contained within the city-wide plan are legally binding for the city of Helsinki. The Land Use Act has given planning authorities delegated powers to decide whether or not their plan will be a statutory or non-statutory plan. In addition the city of Helsinki has elaborated a strategic plan for the Helsinki City-Region.
- In 2009, the Ministry of the Environment reformed its land use planning system, while at the same time stipulating the need for the four municipalities comprising the Helsinki City-Region to prepare a joint city-region development plan.



City of Helsinki Strategic Plan: City-Region

4. Île-de-France



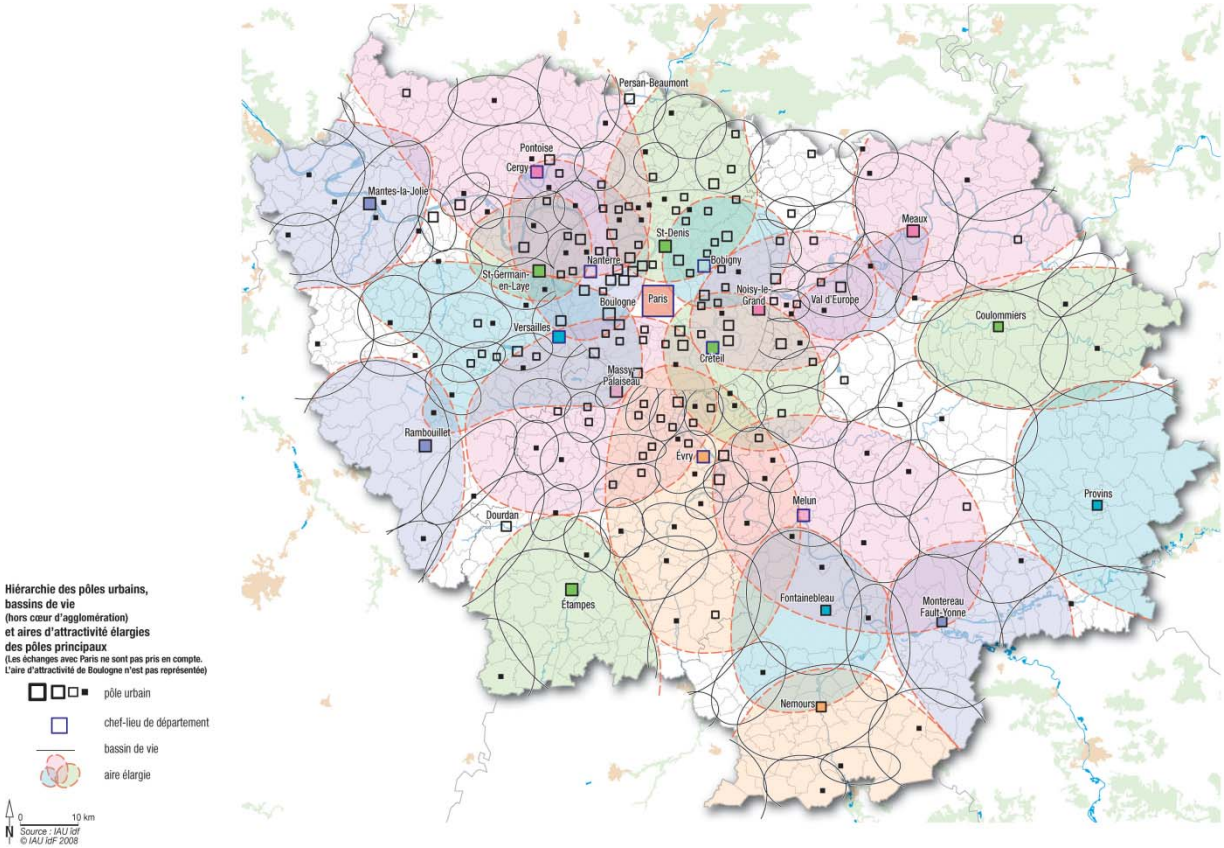


Territorial Dynamics

The Paris/Île-de-France metropolitan area covers 11.4 million inhabitants and 5.35 million jobs which equates to 19% of the total national population and 29% of national GDP. This area has seen a population increase of over 870 000 between 1990 and 2006. Since 2006, its overall development has however been rather stable. Over the last 35 years the population has increased mostly in the metropolitan periphery (in new towns) but primarily, in recent years, in the core area which has resulted in a significant drop in the density from the centre to the outskirts. The spatial distribution of jobs however follows an opposite trend: here we can instead see a decline in the centre and an increase in the metropolitan periphery.

Functional profile

Planning in Paris/Ile-de-France has long aimed to shape a polycentric region with strong urban poles outside of the city of Paris. While the new Regional Master Plan (*Schéma directeur de la région Ile-de-France*, SDRIF) continues this heritage, it also emphasises the importance of a compact metropolitan area and places renewed attention on the historically dense central urban core of the agglomeration. The SDRIF promotes higher density in existing urban spaces and prioritises those areas that have decent accessibility via public transport. As a prescriptive land-use document the plan defines minimum densities for new urbanisation and assigns specific conditions for the urbanisation of certain areas.



The urban poles' hierarchies and their areas of influence within the Paris/Île-de-France metropolitan area

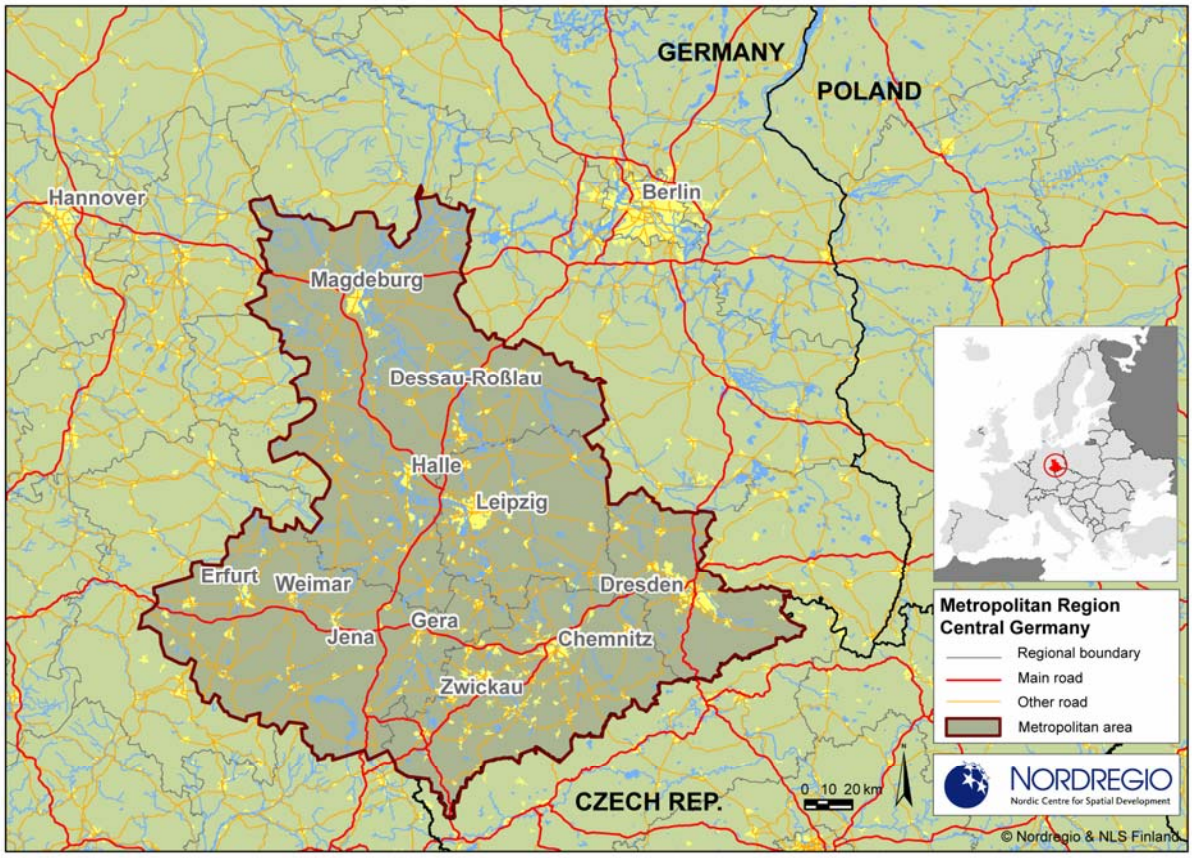
The focus on densification represents a significant change in the planning habits of the Paris/Île-de-France. It is interesting to note that the principle of densification is now generally well accepted at the regional scale, but the level of ambition and the local application of this principle are difficult to share. The counterpart of this *ville compacte approach* is the plan's attempt to preserve and mobilise the region's open spaces, whose various economic, environmental, and public uses are now better acknowledged. Finally, the new SDRIF continues longstanding efforts to develop the metropolitan area around a network of strong, structured centres. The plan's ambitious transportation programme plays a key role in this effort; it will help structure the region's urban core providing a boost to the new dense neighbourhoods called for in the SDRIF. In addition to reinforcing the region's historically 'radial' transportation system, which spans outward from Paris, the new SDRIF calls for a number of new high-capacity lines running around the Parisian centre.

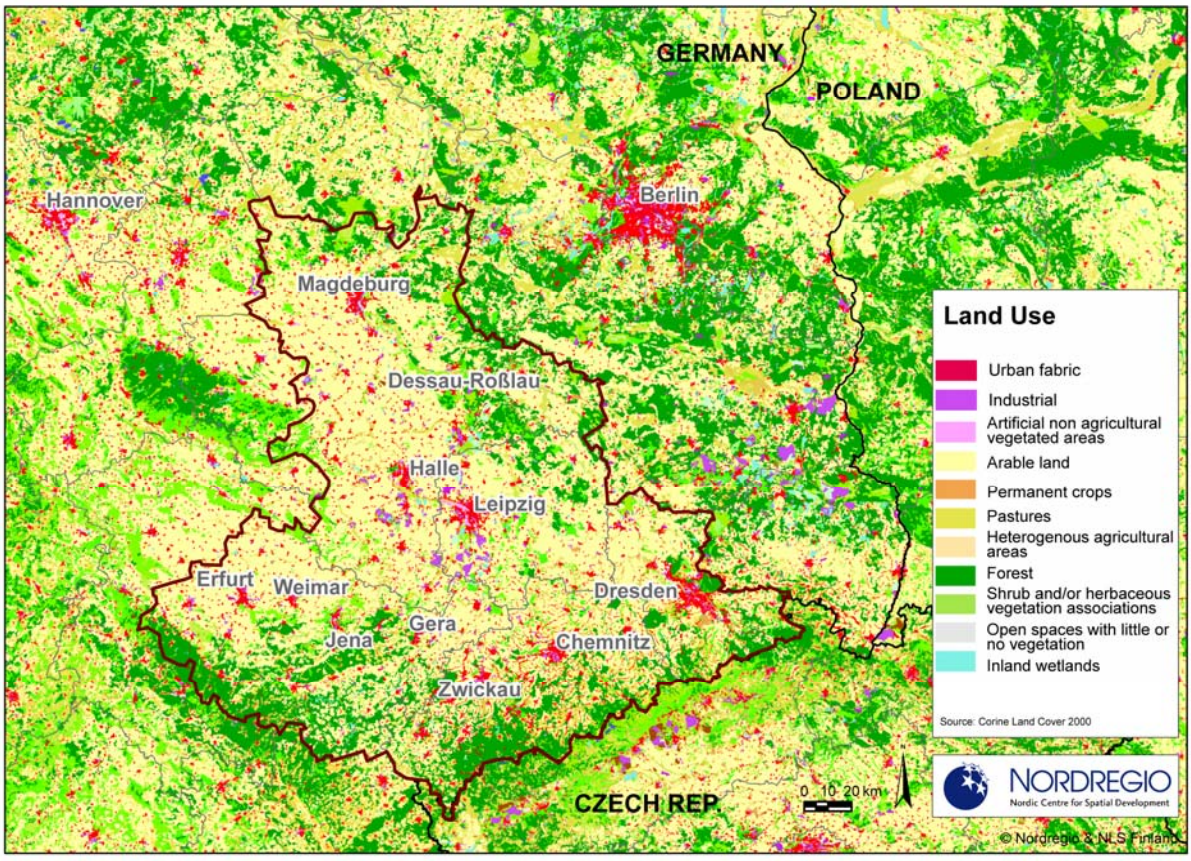
As such, the plan reasserts the principle of a reinforced polycentric organisation across the whole region. It aims, however, at a more compact spatial form with a fine-tuned hierarchy and greater autonomy for services and commercial development around urban poles based on the principle of rebalancing between the Eastern and the Western parts of the region.

Planning and governance structure

The Paris/Île-de-France metropolitan area is divided into 1300 municipalities (each with a mayor in charge of urban planning and a local plan) and eight county councils (*départements*). The Paris/Île-de-France metropolitan area as illustrated in the maps forms one administrative region, which represents relatively well the functional metropolitan area. It possesses a planning document that is unique in France. Its Regional Master Plan (*Schéma directeur de la région Île-de-France*, SDRIF)- is not only a long-term strategic framework for coordinating a broad range of public policies and private actors; more remarkably for a region the size of Paris/Île-de-France, it is also a land-use document that regulates local master plans. This 'regional master plan' is in the hands of the Regional council, in association with the National State, which must be considered for municipal planning at the local level.

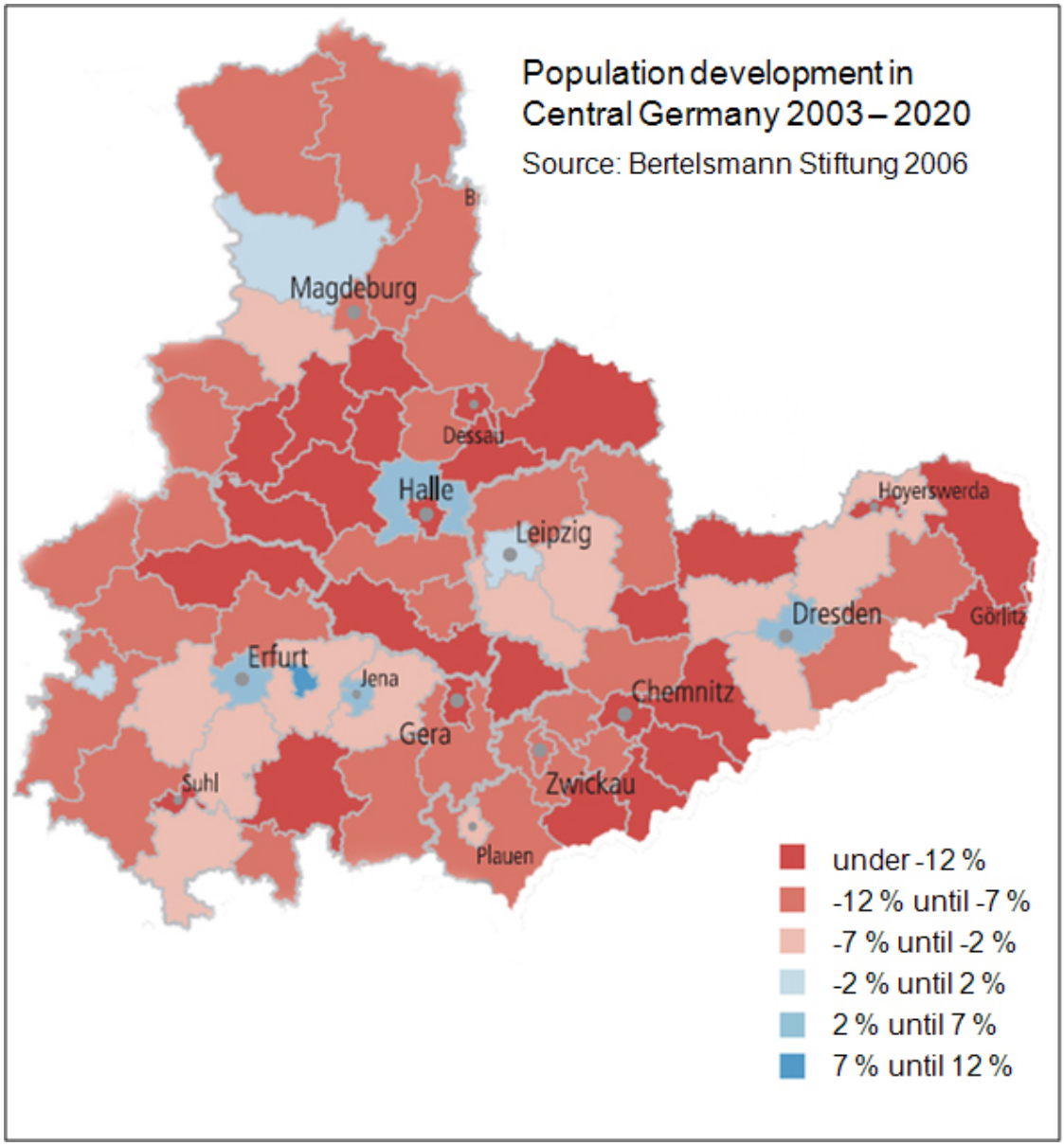
5. Metropolitan Region Central Germany





Territorial Dynamics

The Metropolitan Region Central Germany is a partnership of eleven cities located in the federal states of Saxony, Saxony-Anhalt and Thuringia. These cities are (inhabitants in 2008 in brackets), Chemnitz (243 000), Dessau-Roßlau (88 000), Dresden (512 000), Erfurt (203 000), Gera (100 000), Halle (233 000), Jena (103 000), Leipzig 515 000), Magdeburg (230 000), Weimar (64 000) and Zwickau (94 000). They bring together, in total, a population of 2.4 Million inhabitants. Adding the counties 'in between' sees the total figure rise to around 7 million inhabitants for an area which is generally characterised by a patchwork of cities and counties some of which are shrinking and/or stagnating while others show signs of growth. The larger urban areas, primarily, Dresden, Leipzig, Erfurt, Jena and Weimar, remain either stable or exhibiting marginal growth (see map below). In general however the Metropolitan Region Central Germany is shrinking. The reasons for the population shrinkage displayed by the region as a whole are very complex and include a low fertility rate, the as yet incomplete process of restructuring undertaken by local economies after the transition to the market economy in the early 1990s and finally out-migration of many young and well-educated people in particular.



Functional profile

The Metropolitan Region Central Germany shows a diverse economic profile. The most important clusters include automobiles, chemicals and synthetics, renewable energy – especially photovoltaic, optics, microelectronics, biotechnology and life sciences.

Renewable energy is a multi-faceted economic field and a significant regional strength. The photovoltaic industry is located in several parts of all three of the federal states that make up the region. The main centres are Bitterfeld-Wolfen (e.g. Q-cells), Erfurt, Freiberg and Jena. The largest photovoltaic power plant in the world is in Brandis near Leipzig.

The generation of power and heat from solid and liquid biomass is another component of alternative energy production in the metropolitan region with several plants already up and running and several more currently at the planning stage. The German Biomass Research Centre is located in Leipzig.

The development and production of engines for wind power plants with outputs between 1.5 and 5.4 megawatts is located in Dresden. The production of the world's largest wind power plants takes place in Magdeburg.

The major centres of the automobile industry in the metropolitan region are Chemnitz/Zwickau (VW), Dresden (VW), Eisenach (Opel) and Halle/Leipzig (BMW/Porsche).

The focal points of the biotech industry in the metropolitan region are biopharmaceuticals, protein engineering, (nano) medical engineering, diagnostics, neurosciences, regenerative biology, drug discovery, nanomedicine, plant biotechnology, life science instruments and white biotechnology. Enterprises and research activities in these fields are primarily located in Dresden, Erfurt, Gera, Jena, Halle, Ilm-Kreis and Leipzig.

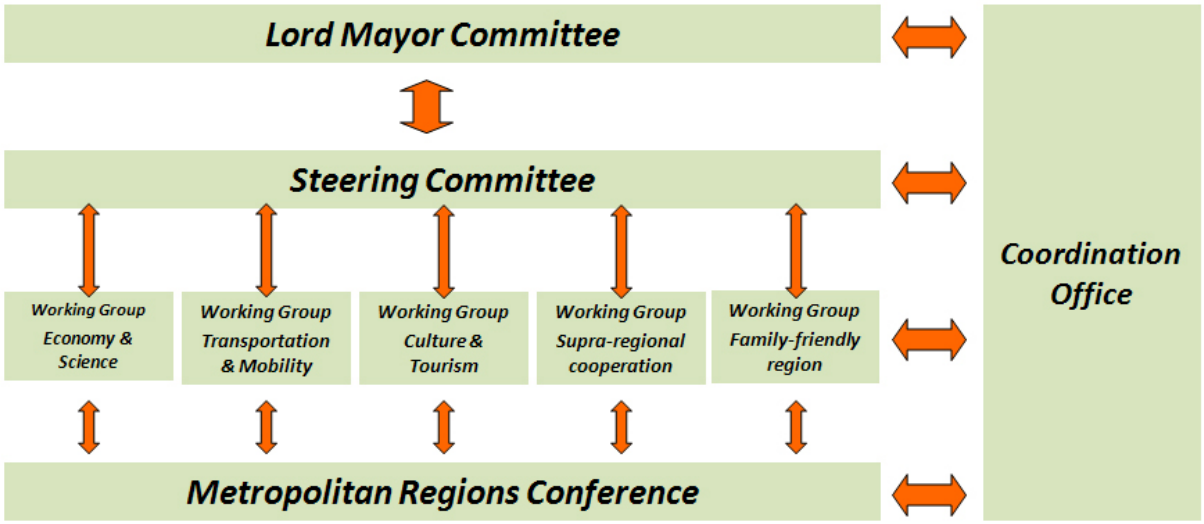
The Dresden area is the primary centre for microelectronics in the Metropolitan Region Central Germany with established relations to cities nearby such as Freiberg and Chemnitz. Here the focus is on circuits, circuit design, photomasks, semiconductor material, general electronic equipment, telecommunications and automobile electronics. The region around Leipzig specialises in telecommunications, computers (hardware and software) and communication and media technology. The 'technology triangle' of Erfurt, Jena and Ilmenau focuses on the development and manufacturing of optoelectronic and electromechanical sensors and microsystems, optoelectronic modules and components, and also specialises in RFID technology, semiconductor circuit design, microtechnology and nanotechnology. Traditionally, the southern part of Saxony-Anhalt around the city of Halle is a centre for the chemical industry and synthetics.

The main objective of the partnership is to enhance the competitiveness of the entire region. It thus aims to create an effective system of networking, a more positive external perception of the region, an innovative and knowledge-oriented economy and a higher quality of life.

Planning and governance structure

The Metropolitan Region Central Germany is an example of informal cooperation based on a declaration between the lord mayors of the eleven cities. The metropolitan region has no legal power. Cooperation is financed through yearly contributions from the cities, supported by funds from the Federal States of Saxony, Saxony-Anhalt and Thuringia. Cooperation is organised on the basis of a lord mayors committee, a steering committee, working and project groups and a coordination unit. Every year a high level metropolitan regions conference is addressed to all public and private stakeholders and possible partners in the metropolitan region.

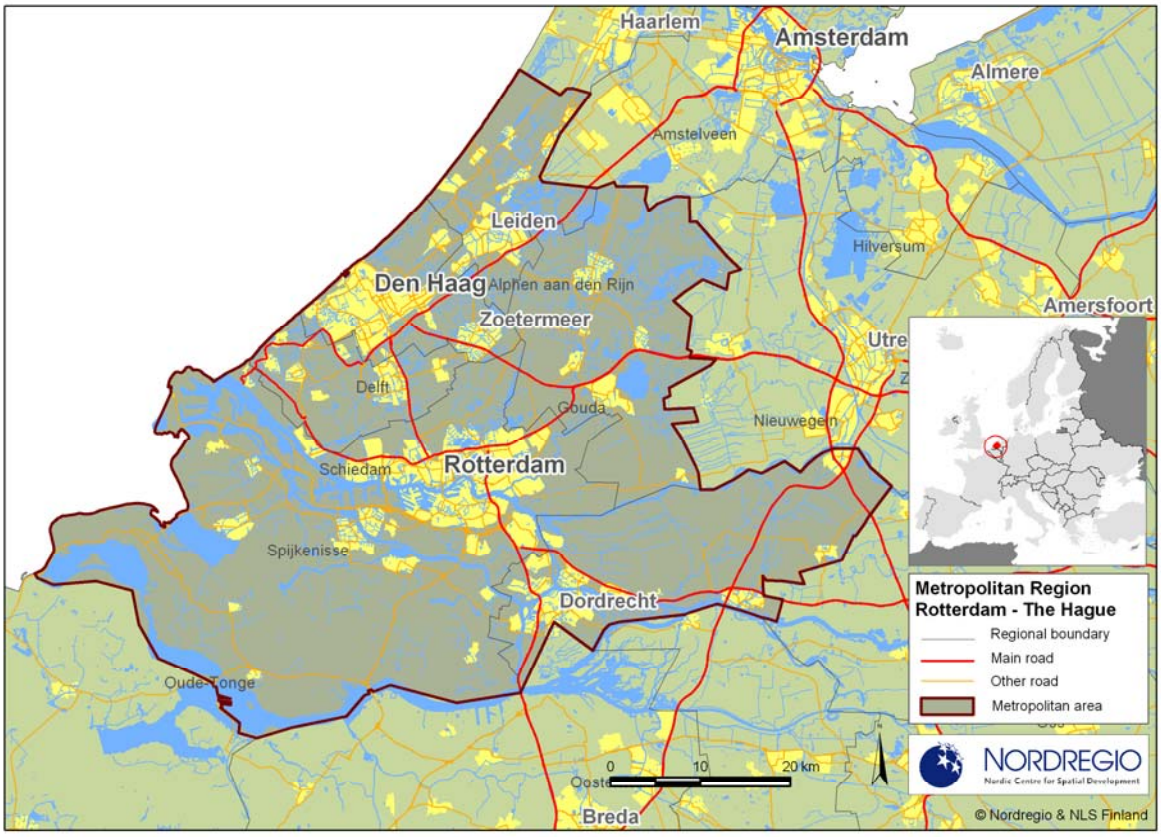
The basic idea of this partnership is to work within a flexible geometry framework. While the lord mayors of the main cities (see above) generally take the political lead, working groups and project teams can include representatives from medium-sized and smaller cities as well as from rural areas from across the entire territory of the three federal states.

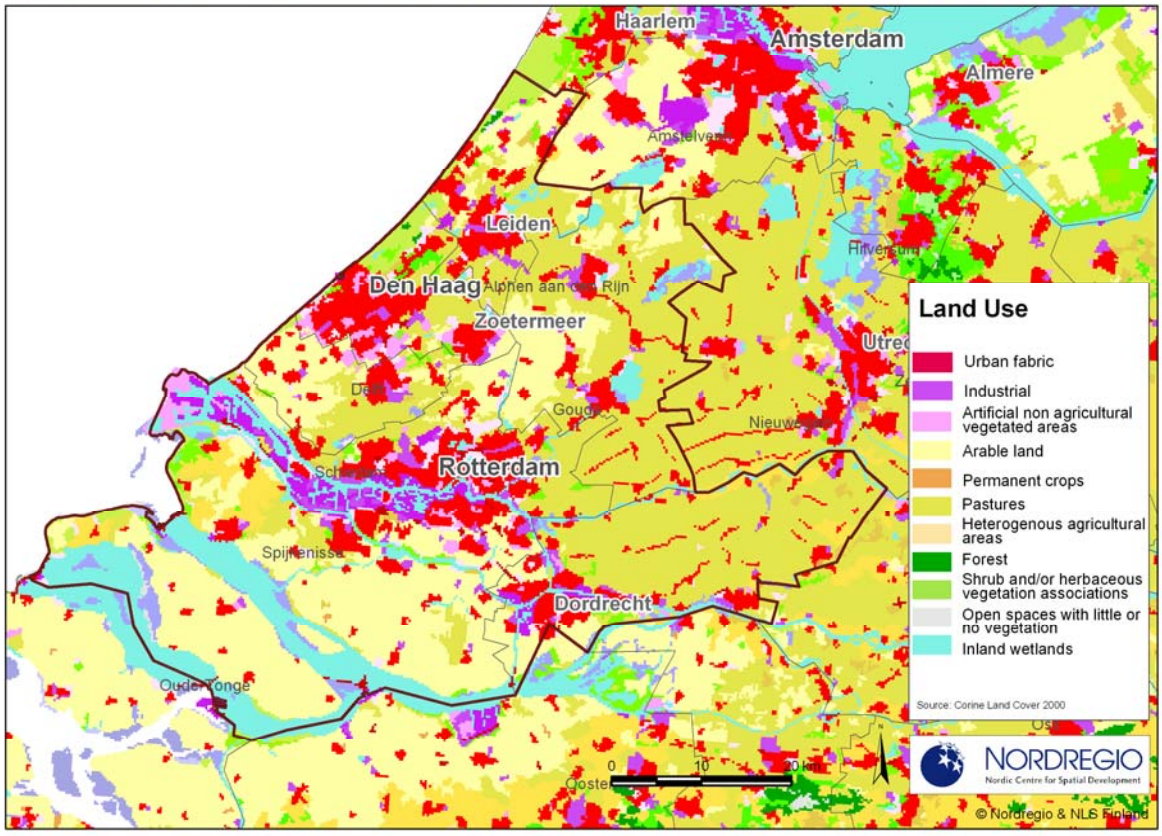


Source: Egermann 2010, based on Metropolitan Region Central Germany

More information on the specificities of the German Planning system can be found in the section on Frankfurt/Rhein-Main.

6. Metropolitan Region Rotterdam - The Hague





Territorial Dynamics

Taken together the Rotterdam and The Hague 'COROP regions' hold 13.6% of the jobs in the Netherlands. As separate regions, Rotterdam and The Hague rank third and fourth respectively on the list of regions with the largest number of jobs in the Netherlands and have each seen relatively modest growth in terms of population and jobs in recent years.

COROP	Number of employees jobs (x1,000)	national share	Number of Inhabitants	Number of jobs per 1000 inhabitants
R'dam The Hague Metrop. Region	**951.3**	**13.6%**	**2,140,815**	**444**
Greater Amsterdam	726.5	10.4%	1,213,535	599
Utrecht	581.5	8.3%	1,190,604	488
Greater Rijnmond	**580.2**	**8.3%**	**1,360,608**	**426**
The Hague metrop. area	**371.1**	**5.3%**	**780,207**	**476**

Source: CBS, edited by Decisio

Functional profile

For centuries, Dutch towns and villages have enjoyed a finely meshed and hierarchical structure of service-producing centres. Depending on the size of the population, a range of smaller or larger centres (neighbourhood, district, urban district and city centres) existed. In the past decade the process of scaling has taken place, resulting in the rapid disappearance of the smaller centres. All municipalities in the region strive for the preservation and enhancement of at least their own city/town or village centre. Neighbourhood centres disappear; district centres shrink both in terms of function and size, and urban district centres take over the function of local facilities centres. The Rotterdam Urban Region and the city of Rotterdam, for instance, aim at concentrating facilities as much as possible in the most easily accessible places in the urban area. These are the new node areas, in addition to the central areas which are the result of historical development.

The Rotterdam/The Hague metropolitan region is characterised by a mix of superior functions such as the international maritime cluster, an international airport, the national seat of government, a strong cluster of international (legal) institutions, an attractive riverside and seaside boulevard and a University of Technology etc., all shared by the main cities and partly also by other surrounding towns.

There is clearly a strong living-working tie between Rotterdam and The Hague when compared to Amsterdam and Utrecht. Moreover, the regional function of both cities is proved by the number of commuters' moving from the surrounding municipalities to The Hague and Rotterdam. The Hague and Rotterdam are however rather less reciprocally related than expected as far as shopping and consumer flows are concerned, in spite of their vicinity, size of the population and retail trade facilities on offer. With regard to the contacts businesses have with suppliers and consumers it appears that they occur mainly within the four large cities (Amsterdam, Utrecht, Rotterdam and The Hague). When compared to the flows between the four, the number of relations within the cities is large.

At the inter-regional level many criss-cross relations exist outside the regional centres. Relations between Rotterdam and The Hague are not particularly intense. Both cities have more intense relations with Amsterdam than with each other. In the region of The Hague, the business community retains significant relations with Delft, Zoetermeer, Leiden and the Westland. In this context The Hague municipality acts as a regional centre, the majority of flows within the regional network having a relation with The Hague. The Rotterdam region displays a more criss-cross pattern of relations. Businesses in Rotterdam retain a significant level of relations with businesses in Schiedam and Ridderkerk (Decisio BV 2007).

The Rotterdam Region Spatial Plan 2020, for instance, defines nodes as locations with a high transport and functional value. The 'transport value' is determined by the number of converging modalities (public transport in the form of train, metro, tram, (water) bus and car) as well as the possibility to change modalities, including *Park & Ride* schemes. The presence of mobility-generating functions, housing and offices, determines the 'functional value'. In the ideal situation, the transport value and the functional value are in balance.

The Polycentric Rotterdam/The Hague metropolitan region

Planning and governance structure

National government
Strategic national policy; structural concepts; a major financier of public investments; authorised to lay down land-use plans if municipalities fail to do that.

Provincial authorities
Provincial structural concepts for the entire province or parts thereof, such as the Rotterdam Region 2020 plan; influencing and steering the municipal policy by means of prior consultations; limited financial means.

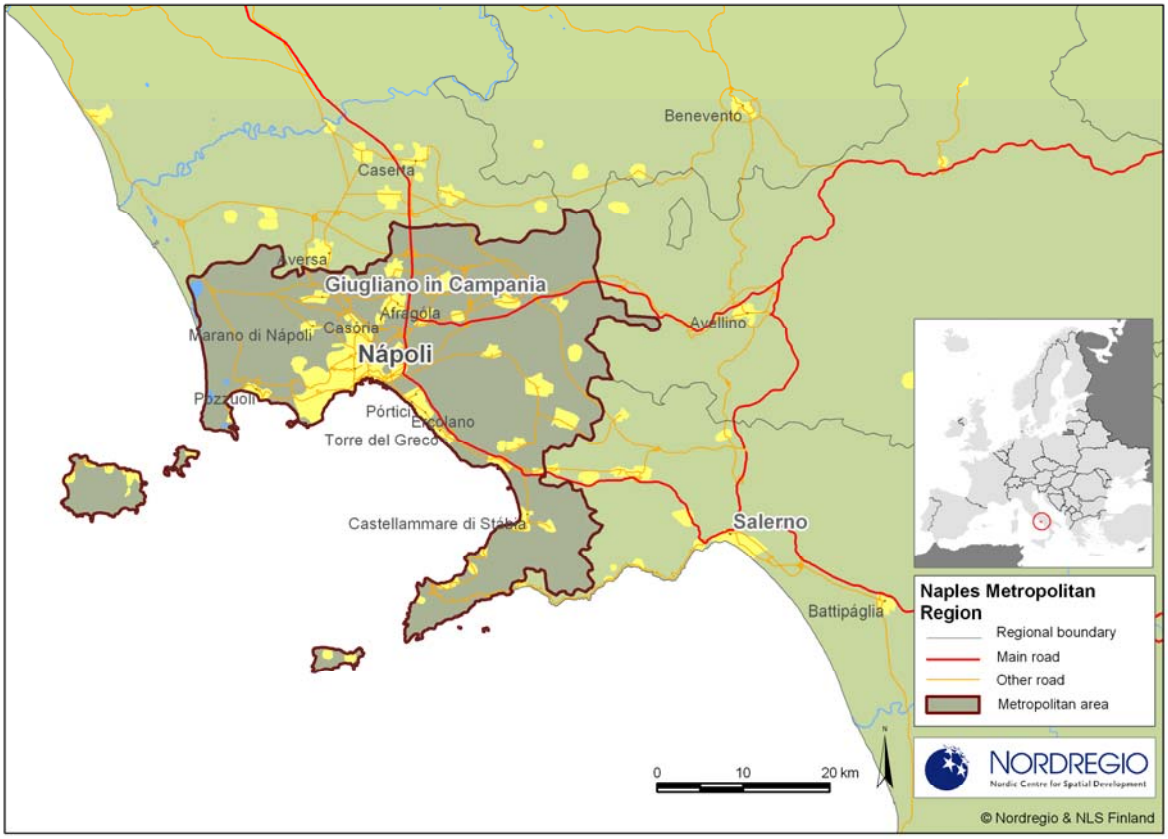
Urban regions
No legal powers; cooperation on a voluntary basis; entering into administrative agreements; providing advice and expertise, organising consultations among stakeholders.

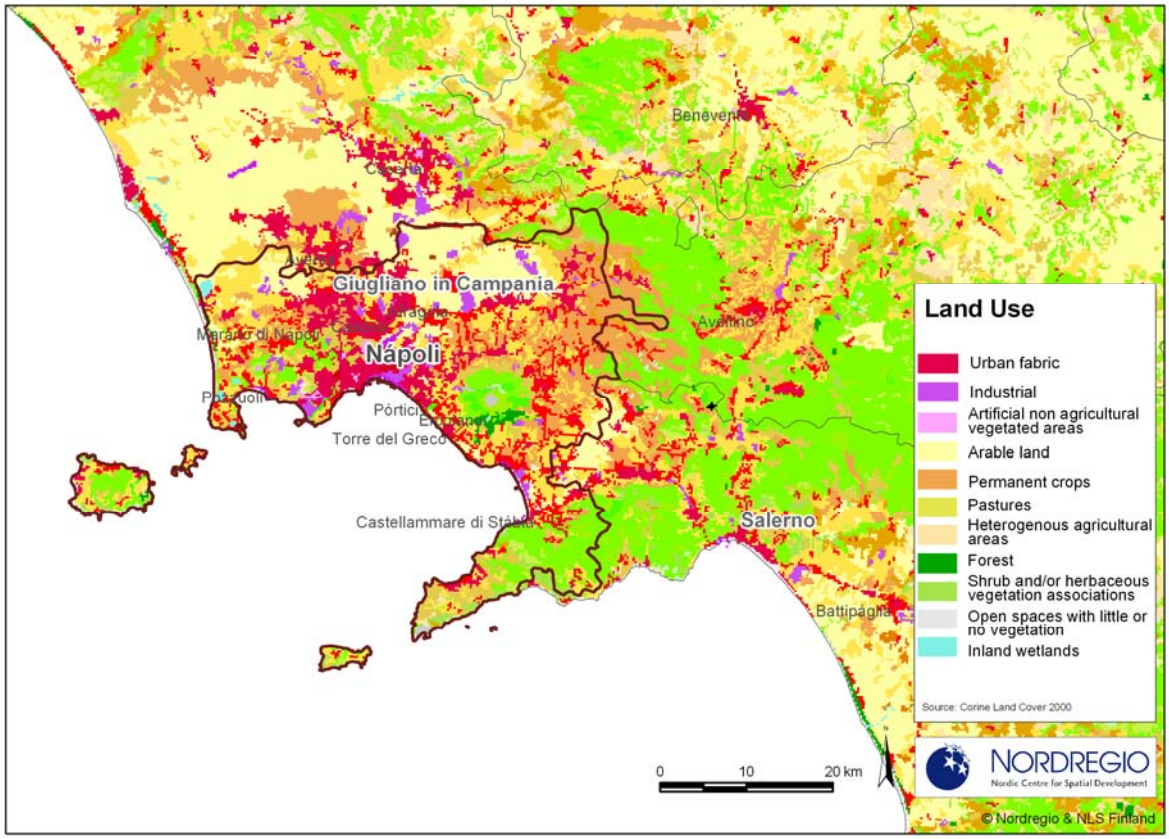
Municipalities
Municipal structural concepts (spatial policy in general terms); the most important administrative level in terms of laying down land-use plans; furthering the policies of higher administrative tiers by means of consultation and, if necessary, issuing directions; limited own budget for public financing of area-based development; its most important sources of funding are: land development and the subsidies from the national and provincial authorities.

The cities of Rotterdam and The Hague have taken the lead by deciding, on 5th December 2008, on the informal existence of the Metropolitan Region Rotterdam -The Hague with a focus on the international attractiveness. A number of projects will help here to bolster the perception of the region, for inhabitants as well as for investors. The idea is to strengthen existing regional cooperation in the 'South wing' of the *Randstad*. In the longer term, a good base should be created upon which to organise a strong vision for the future, with all partners (public and private).

The Rotterdam Urban Region, for instance (as does the Hague Urban Region, *Haaglanden*), forms an administrative between the province and the municipalities. It is managed by an indirectly elected regional board which, in turn, appoints the Executive Committee. The members of the board are managers from the regional municipalities. The municipalities enjoy a considerable degree of autonomy. Cooperation within the Rotterdam Urban Region is undertaken on a voluntary basis. As far as spatial planning is concerned, the powers of the Rotterdam Urban Region have been restricted even further since the new Spatial Planning Act was adopted on 1 July 2008. In fact, the Rotterdam Urban Region no longer has legal authority and policy is now developed through making agreements with the province and the regional municipalities; all of this based on consultation and persuasion. As far as other policy areas are concerned, such as housing, traffic and transport and regional policy on green spaces, the Rotterdam Urban Region has more policy management tools at its disposal because it manages its own budget.

7. Naples Metropolitan Area





Territorial Dynamics

The Province of Naples is divided into 92 municipalities, the biggest being Naples itself, with more than 1 million inhabitants and a high concentration of functions and services. The Province of Naples covers an area of 1171 km^2 and has almost 3.1 million inhabitants (in 2008). The population of the province represents about 53.4% of the region of Campania while the surface is only 9% of the total area.

The city of Naples numbers third in population terms in Italy and is one of the most densely populated areas in Europe. It is, however, undergoing a process of 'emptying out' as residents move to outlying towns. Galeone (2009) even characterises the Naples metropolitan area as a distinctive example of large scale counter-urbanisation.

The overall population of the Naples region has been quite stable over the last decade, even though one can discern a slight reduction in numbers since 2005. The employment rate is, from a European perspective (average in EU-27 in 2009: 64.6%), extremely low at 34.05% (in 2007).

Functional profile

The PTC (Spatial Coordination Plan for the Province of Naples) identifies 10 sub-areas (so-called Local Development Systems, STS). These sub-areas, in addition to social, geographical and cultural aspects, share common productive features and shall be strengthened in the future.

Manufacturing production predominates in the area of Nola with particular strength in the textile and food sectors. This area is also characterised by having the main freight hub, the most important in the Campania Region. The Campi Flegrei area is home to quaysides where pleasure craft are berthed, a traditional activity and strongly connected to the tourism sector. The area of Stabia, near the Vesuvio volcano, is characterised by a wide range of activities, such as manufacturing, building materials, and quaysides. In the area of Giugliano agricultural and manufacturing activities predominate while there are also a number of larger retail centres.

STS areas	***inhabitants in 2008***
Napoli	973 132
Flegrea area	162 955
Islands	85 261
Nola area	140 603
Sorrento Peninsula	80 901
North Vesuvio area	135 282
San Giuseppe area	126 041
Stabia area	515 609
Giugliano area	272 965
North area of Naples	282 373
North east area of Naples	307 938

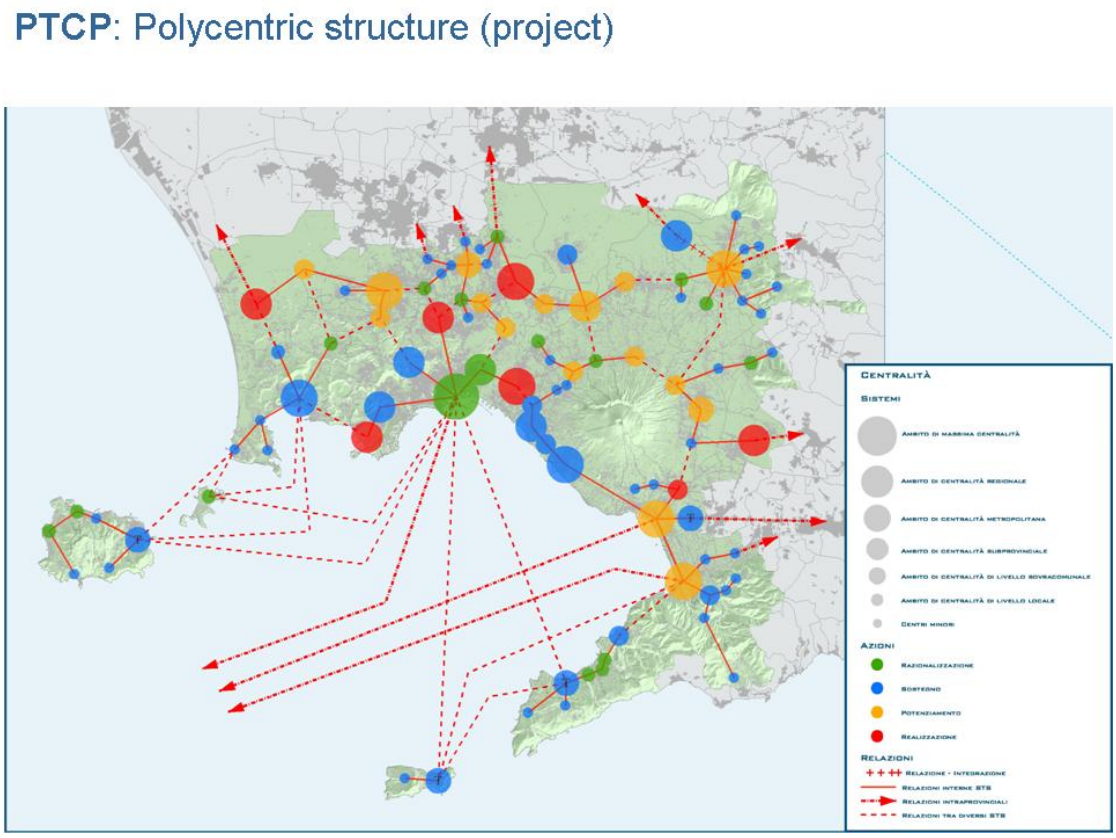
Planning and governance structure

Italy has a four-tiered system with national, regional, provincial and local/municipal levels (cf. the explanations in the portrait of Emilia-Romagna).

The regional spatial plan (PTR) covers the entire territory of the Campania Region in which the Province of Naples is situated. The plan pinpoints some binding guidelines for lower levels of spatial planning and functions at the same time as stipulating a landscape plan.

The Provincial Spatial Co-ordination Plan (PTCP) currently moving towards final approval has a duel role to play in the spatial planning system: on the one hand it produces the guidelines for municipal plans and, on the other hand, it plays an implementation role of its own in terms of policies and programmes. It also includes a distinct differentiation of some centres within the Naples metropolitan area and thus seeks to promote a more balanced future polycentric layout (cf. map below).

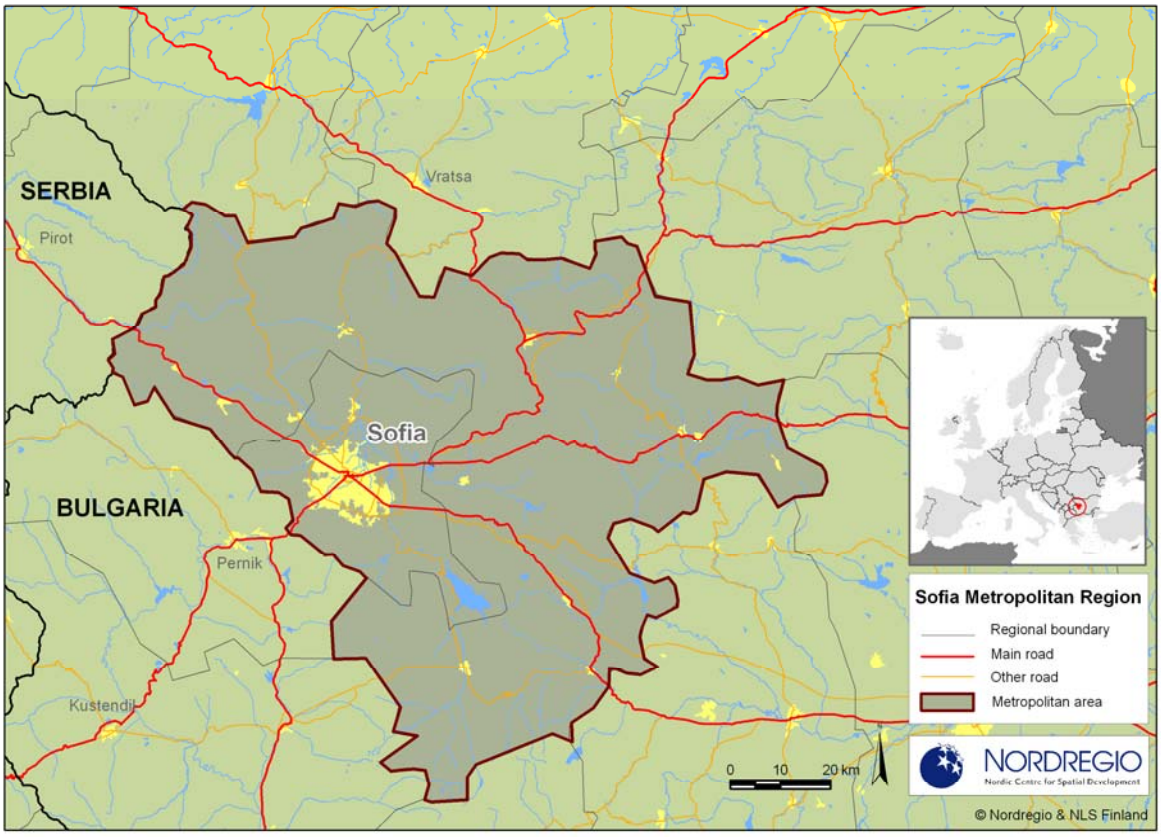
A major concern within the PTCP is to re-articulate and enhance the existing urban system into a more polycentric network. The strategy works on several aspects: empowering the existing nodes, developing new nodes, connecting them in a network, reducing the polarity of Naples and developing a mix of functions in some distinct centres. The PTCP identifies five new areas where new housing will be allowed (due to significant environmental risks building is forbidden across many parts of the territory); two areas where research and high education centres will be developed, two major university hospitals, two new hubs to be connected with the high speed railway, six new trade and industrial centres, and finally two new integrated multi-functional centres.

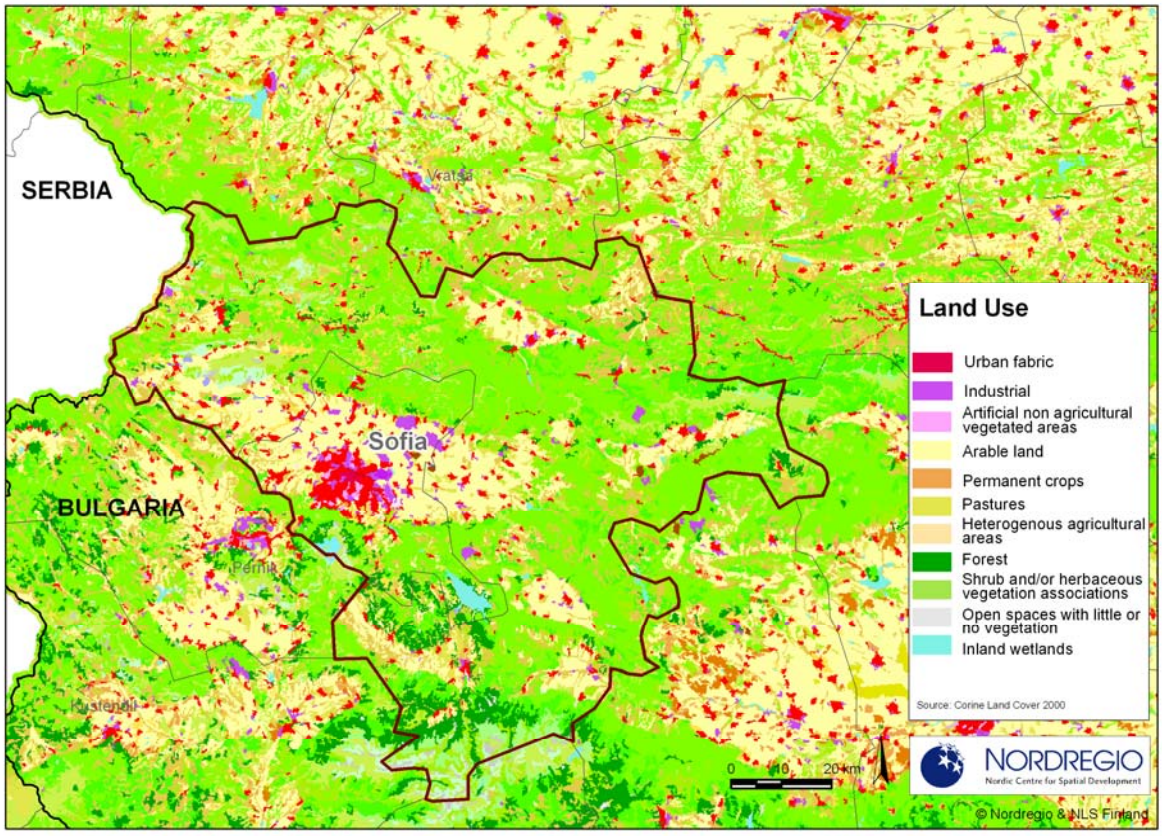


Promoting a polycentric structure for the Naples metropolitan area in accordance with the PTCP

One of the most important purposes of the plan is to create small growth centres with high urban quality and foster them while working together within an appropriate infrastructural system. The Province and the municipalities involved have to cooperate to carry out feasibility studies or projects in this respect, following the guidelines of the PTCP. Other public organisations and even the landowners and other private stakeholders can also become involved in this process. The central challenge here is to organise a new balance within the territory of the Naples metropolitan area by developing multi-functional urban nodes which also integrate the area's cultural identity and heritage which is evidently a key factor in attracting new functions and private/public investment.

8. Sofia Metropolitan Area





Territorial Dynamics

The Sofia Metropolitan Area comprises 11 municipalities with a total area of 6 299.3 km^2 and permanent population of almost 1.5 million, of which 76% live in the City of Sofia. Since 2001, the comparatively low level of unemployment there has attracted a significant migration flow from the smaller settlements within the Sofia Metropolitan Area and indeed from across the entire country. In 2007, the average level of unemployment in the country was 6.9% (Sofia 2.4%, in mid-2008). The population of the city of Sofia grew consequently from 1.174 million inhabitants (in 2001) to 1.381 in 2009. According to the data from 2007, Sofia municipality creates 33.4% of national GDP (7 778 Euro GDP *per capita* – 69% of the EU average). The city's economic profile is dominated by the service sector with 74% of overall employment in this sector.

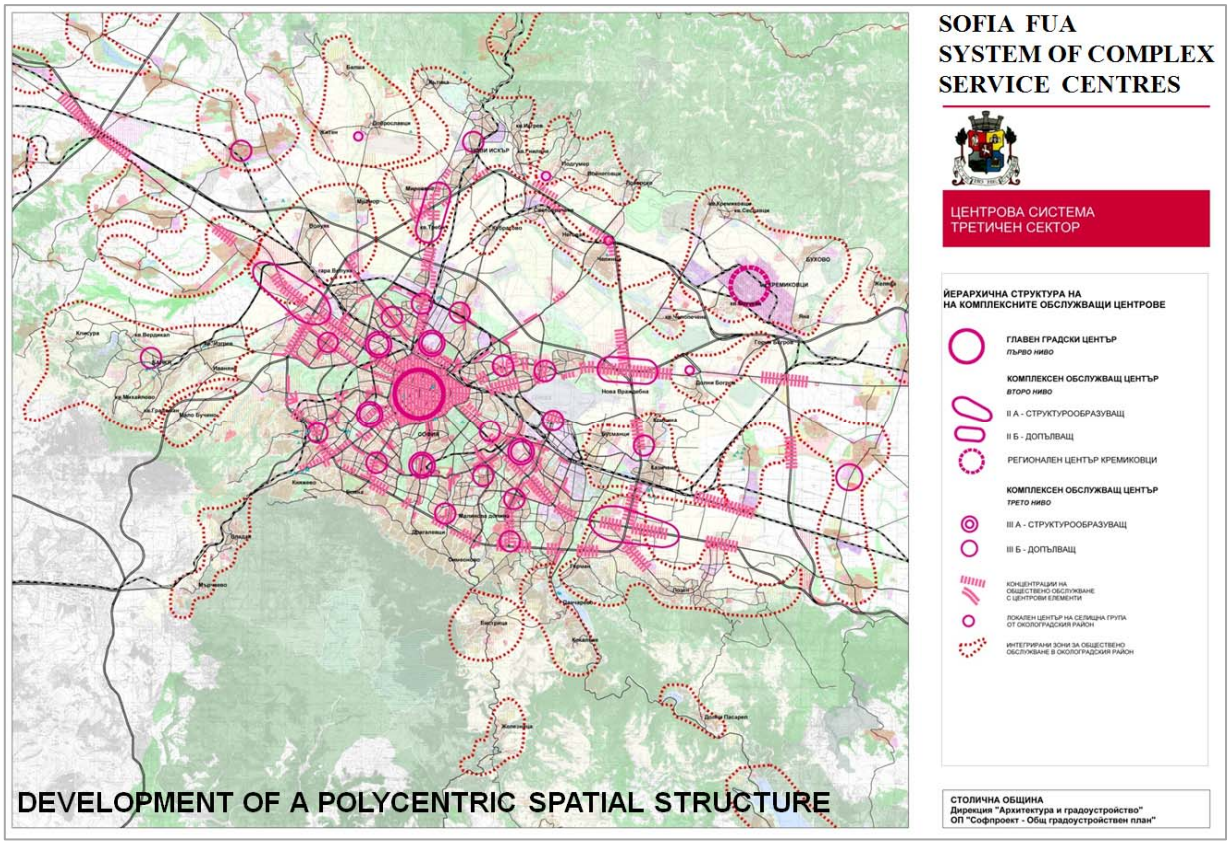
Functional profile

The 'Sofproect OGP' is a strategic planning body of the Sofia Municipality, controlled by the Mayor and the Municipal council and financed by the municipal budget. It carries out and coordinates the elaboration of the non-binding Master Plan for the city and the 11 surrounding municipalities as well as regional development plans in respect of the city of Sofia. The polycentric development strategy for the metropolitan area of Sofia defines three different spatial levels:

I level: *a hierarchical system of service centres within Sofia Municipality*
II level: *'buffer urban centres' in neighbouring municipalities*
III level: *relocation of functions to more distant economic centres of the metropolitan area*

The Master plan provides space for developing new urban and economic zones outside the city of Sofia municipality, but within the municipal boundaries. The idea is to preserve the core city from non-appropriate activities and traffic overload. Good infrastructural conditions together with low land prices will help to attract investors and relocate employment there. The plan positions these new zones in compliance with the leading principle of good transport connectivity - with the city of Sofia as well as with the rest of the country.

The Master plan for Sofia municipality and the spatial development scheme for Sofia Metropolitan Area assessed the threat of the excessive concentration of economic activities in the central core. These documents provide spatial premises for the creation of two larger buffer areas and industrial economic zones, which will help to relieve the high developmental pressure on the city of Sofia. Besides this, in the periphery of the metropolitan area lower rank zones for the development of new enterprises, including transport terminals and hi-tech industries are planned (yellow dots on the map below). Two of these new and significant employment locations outside of Sofia municipality are at a distance of about 20 km from the city of Sofia, and define two of the main housing complexes with roughly 120 000 inhabitants each. These zones attract and concentrate most of the new investments. The Southeast zone, with the town centres Elin Pelin and Gorna Malina are relatively multifunctional at present. The Northwest zone with its centre at Kostinbrod specialises in the food and tobacco industry. Bojurishte is mainly a logistics centre, strongly connected to Sofia.



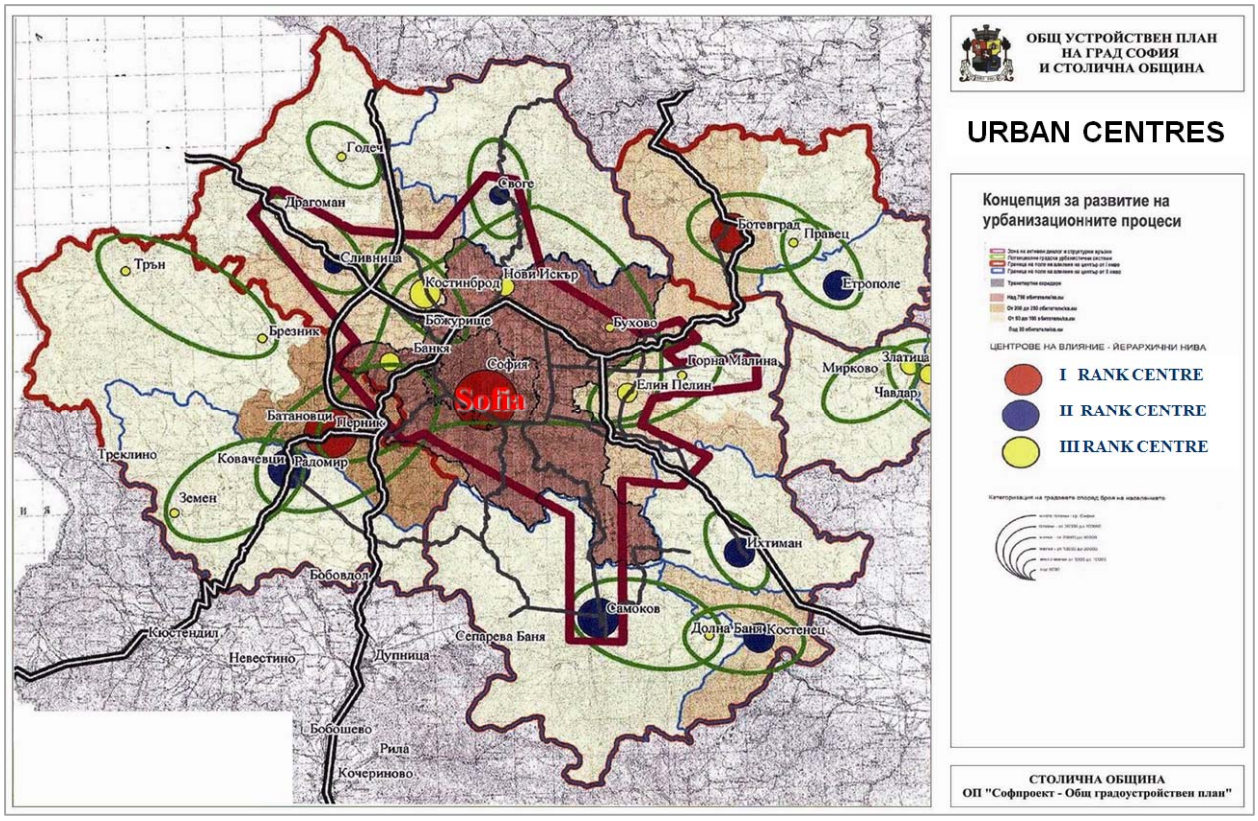
A couple of new urban and economic zones will also be supported around Sofia municipality with an average size of 15-20 000 inhabitants and are planned to be constructed around 30 km from the city of Sofia (blue dots on the map above). Their technical and transport infrastructure is funded jointly by the private sector and by significant state financial resources. Their urban extensions are planned to cover a population increase to 30-35 000. In this sense they will ensure the labour force required for the new industries and reduce migration and commuting to the City of Sofia.

All documents, dealing with the issue of territorial development (municipal development plans, strategies for development up to the year 2015 and spatial development plans for Sofia Metropolitan Area or parts thereof), outline and emphasise the need for developing a polycentric system of complex service centres (see map above).

Planning and governance structure

Regional and spatial planning in the Republic of Bulgaria is performed in a national legal framework primarily framed by:

- the law on the administrative-territorial structure of Bulgaria
- the law on regional development
- the law on territorial development (for physical planning)
- a set of regulations issued by the Ministry of Regional Development and Public Works

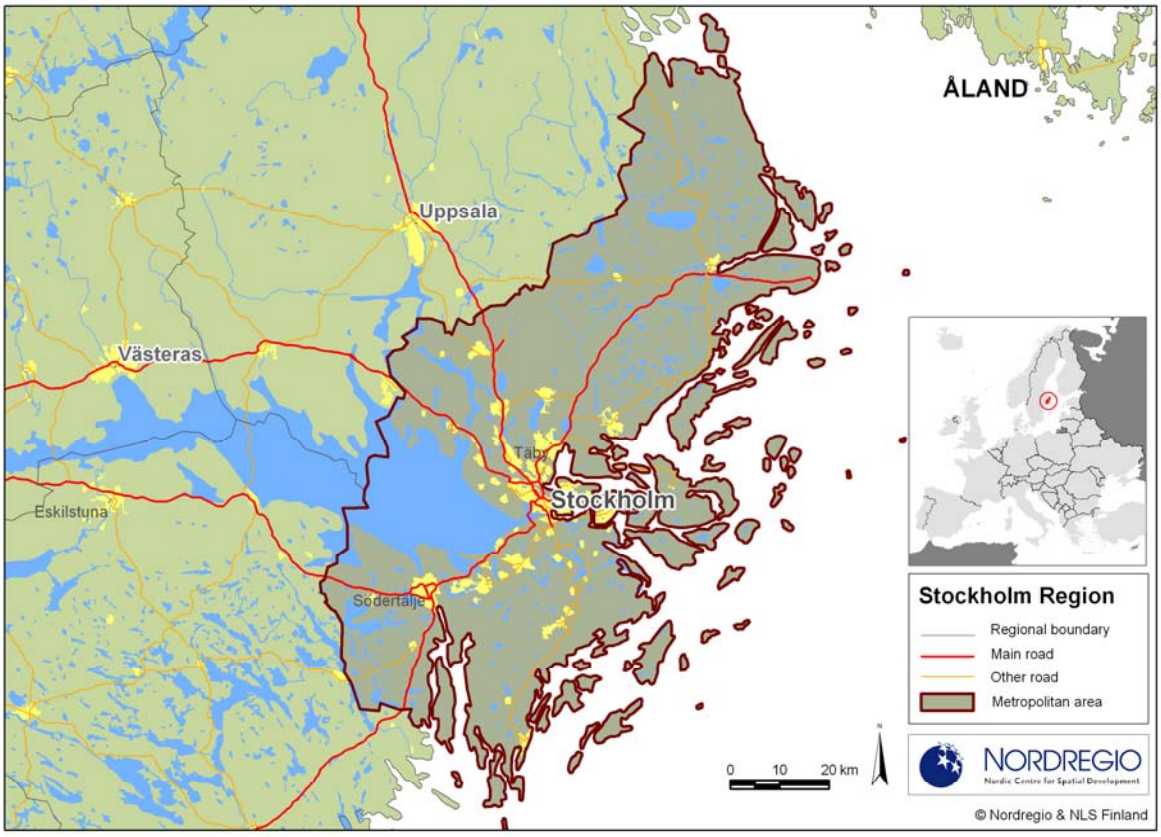


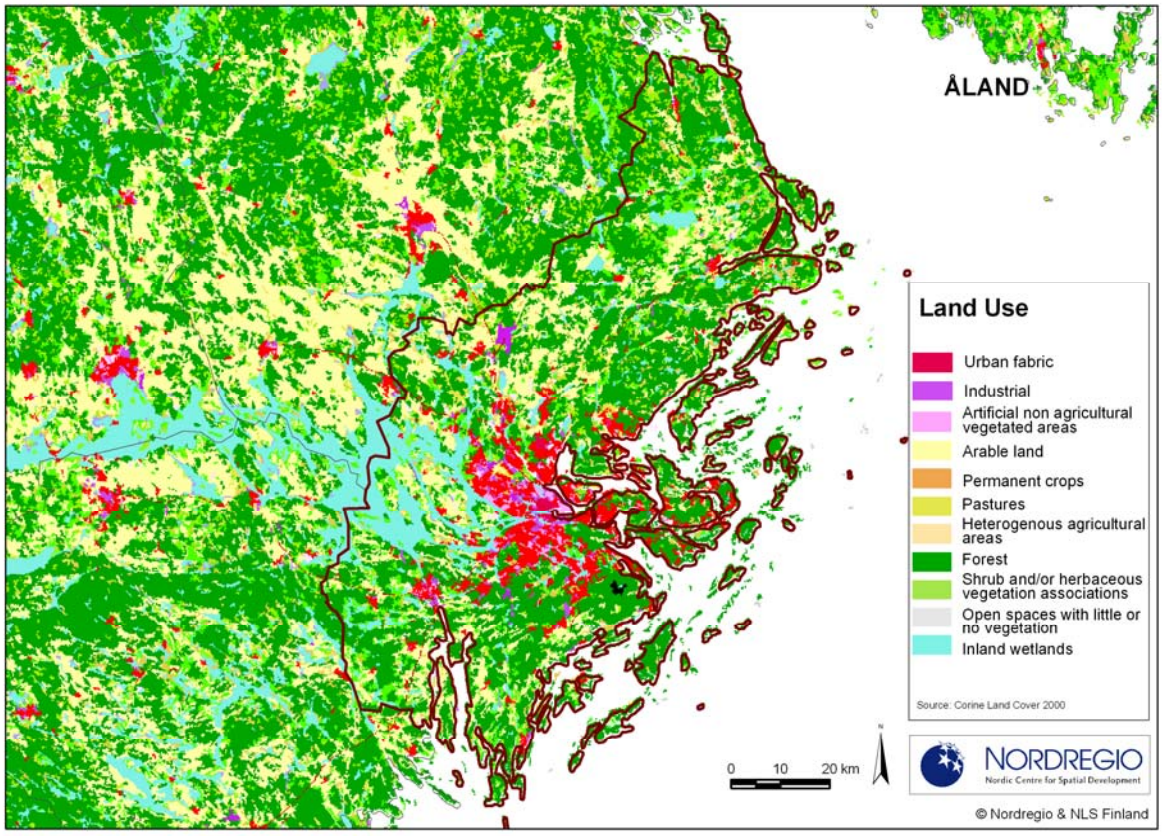
The administrative-territorial structure of the Republic of Bulgaria comprises 28 districts (*oblast*) and 262 municipalities. Mayors are elected to run the municipalities, the members of the municipal councils and the mayors of settlements (mayoralties) are also elected. The districts are governed by the state administration, appointed by the Council of Ministers.

In compliance with the law on the administrative-territorial division of the Republic of Bulgaria, Sofia is the capital of the country and centre of Sofia City District. The boundaries of the district overlap with those of Sofia Municipality. The so-called 'Sofia District' extends over the territory of several municipalities forming a large belt around Sofia Municipality.

The Bulgarian law for regional development, in compliance with the standards of the European Union, divides the area of the country into six planning regions. Sofia is the centre of the South-western Planning Region, which comprises five districts and 52 municipalities with a total population of 2 098 800 people and a total area of 20 306.4 km^2. Regional Development Councils have been set up in the planning regions. They involve the Governors of the districts within the boundaries of the respective region, representatives of each of the municipalities in the region and of the Ministries involved in the application of the state policy with respect to regional development, together with representatives of the national organisations of employers and employees. Districts also have development councils according to the same law. The district and regional councils are not elected bodies; they exercise planning, coordinating and monitoring functions in respect of regional development.

9. Stockholm Region





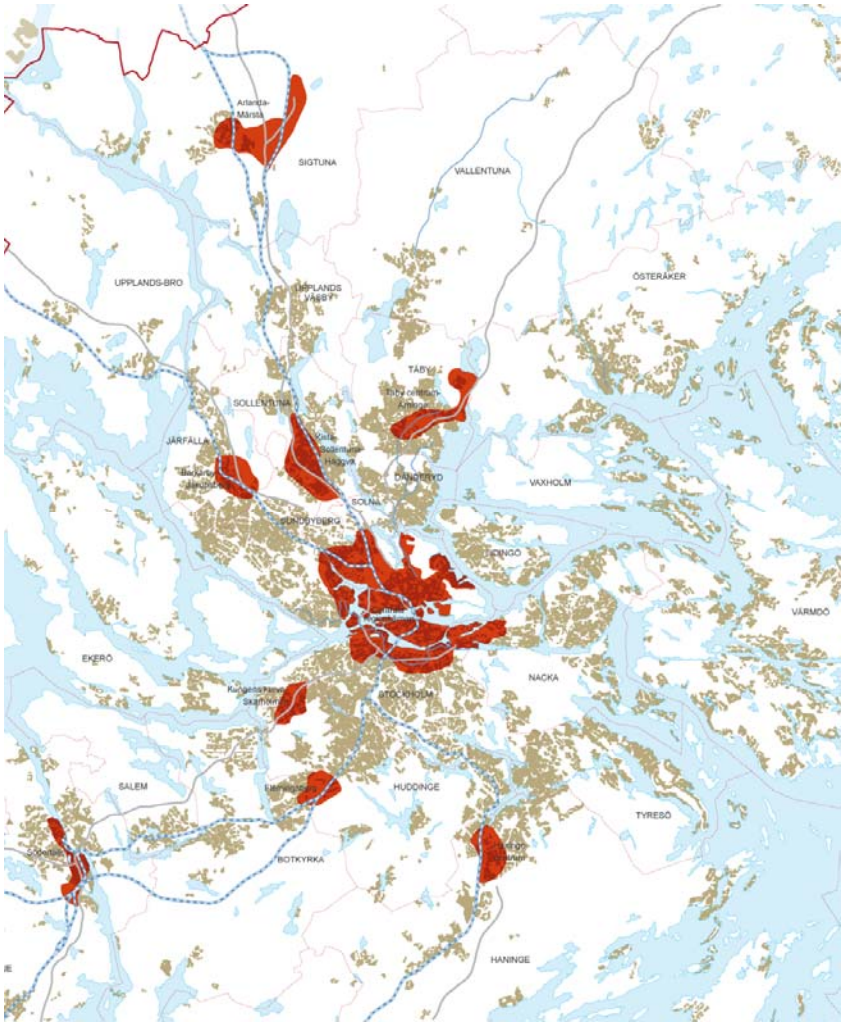
Territorial Dynamics

The Stockholm metropolitan area is represented here by Stockholm County which consists of 26 municipalities. Today this area comprises more than 2 million people, more than 1 million jobs and about 6 500 km^2. The Stockholm metropolitan area is growing fast, since 1980 the population has increased by almost half a million while twenty years ago there were roughly 200 000 fewer jobs.

The growth rate in recent years has been approximately 30 000 inhabitants per year, which is considerably higher than any other part of the country. Due to the current 'baby boom', plus continuing net in-migration, it is forecast that this trend will continue into the future, specifically impacting demand for housings and jobs: by 2030 the population of the Stockholm region will have risen to 2.3 million (low variant) or even up to 2.5 million (high variant).

Functional profile

The concept of developing so-called 'regional urban cores' was first introduced at in the Regional plan of 2001 (RUFS 2001). This approach towards IMP has been taken-up and developed further in the recently adopted new Regional Development Plan (RUFS 2010). All in all it suggests developing eight regional urban cores outside the central one, which is basically the inner city area of Stockholm plus the centres of some neighbouring municipalities.



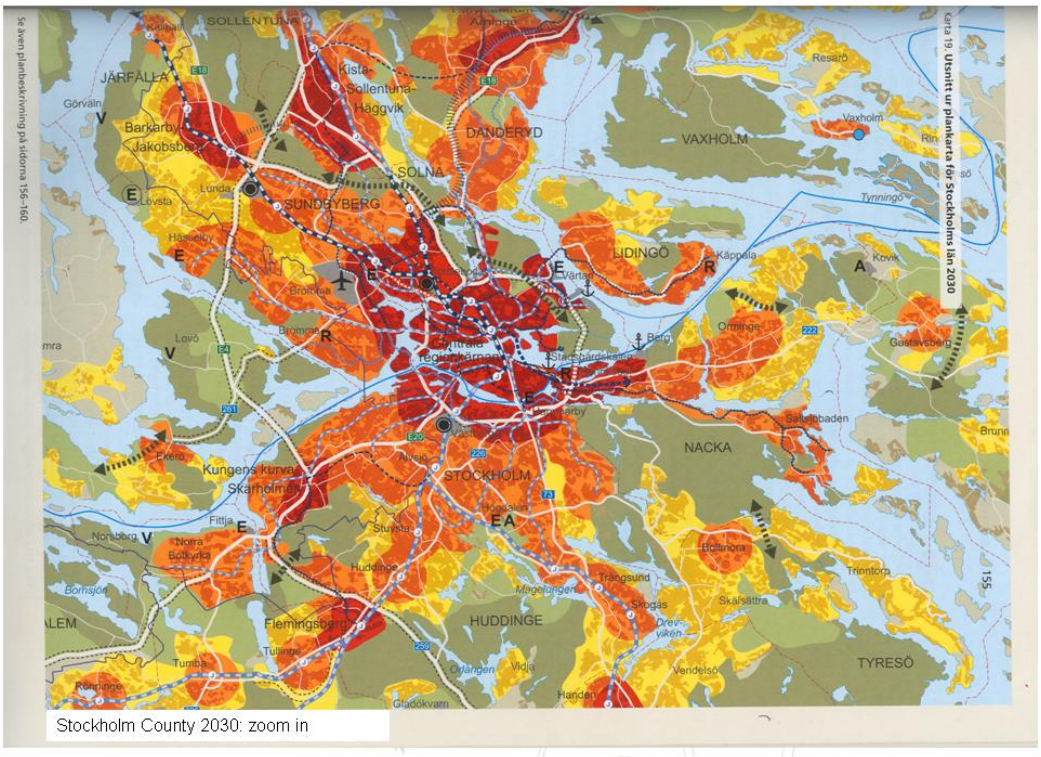
These eight growth areas have the following current profiles (in brackets their distance from the central core is given) – in the future these 'regional urban cores' are expected to attract considerably more development and widen their functional profiles and thus become distinctive centres within the Stockholm metropolitan area. Most will comprise a municipal centre with various household-oriented services and also develop even more specific profiles.

The areas marked in red illustrate the eight regional urban cores that are to be developed as well as the central urban core.

In addition to the proposed polycentric structure in the County there is in the larger functional regional area a sort of existing polycentric structure supported by motorways and fast regional trains (see map below). Planning in the City of Stockholm also has a polycentric approach with many local level centres.

Täby C – Arninge (15 km)	retail
Kista-Häggvik (10 km)	ITC, research, higher education, retail
Barkarby/Jakobsberg 10 km)	retail
Arlanda (40 km)	airport city/retail
Haninge (15 km)	retail, higher education (branch)
Flemingsberg (10 km)	university hospital, higher education, life sciences/medtech
Södertälje (30 km)	retail, pharmaceutics, Trucks production incl. research
Skärholmen/Kungens kurva (10 km)	retail

Such a 'decentralised concentration strategy' is to be supported by an appropriate transport infrastructure and is designed to help combat urban sprawl as it is claimed that these regional centres have the potential for further densification. The following map illustrates a 'zoom-in' of the regional land-use plan for 2030. It highlights, in dark red, the regional centre plus six of the eight regional urban cores (i.e. excluding Södertälje in the south and Arlanda-Märsta in the north of Stockholm County). The orange coloured spots or corridors are of particular interest here as they indicate 'urban zones with development potentials, whereas the yellow zones highlight areas for 'further' urban development, but which are currently of only minor importance. With very few exceptions the orange and red zones are already being provided with good Public Transport accessibility, since access either to the Metro or to commuter train stations is available within walking distance.



Land-use map of Stockholm county in 2030 (zoom in)

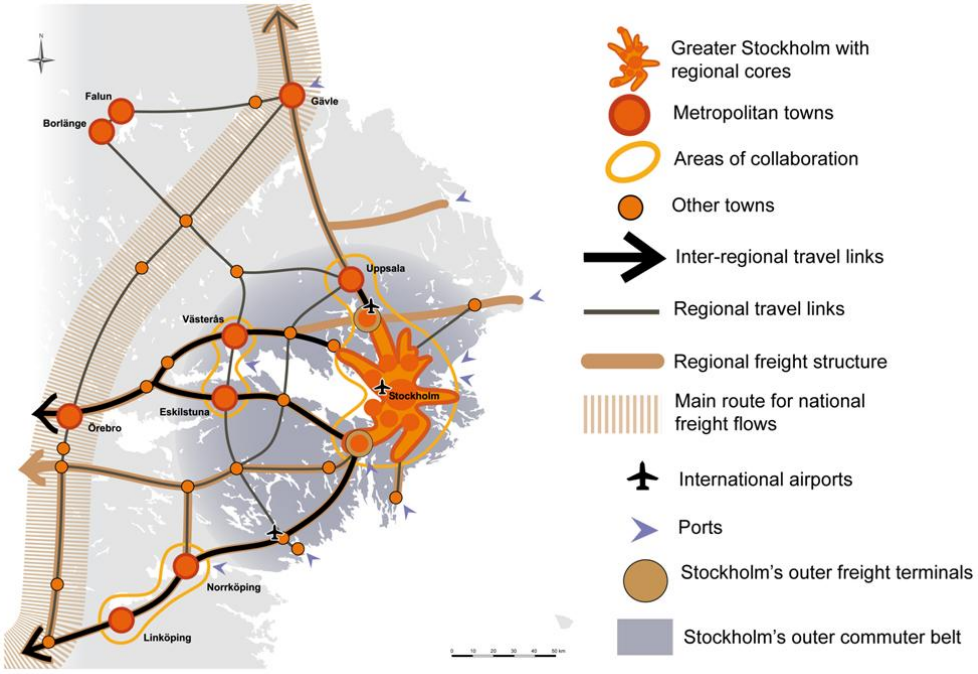
Planning and governance structure

Sweden has a three-tiered system with national, regional and local/municipal levels. As regards spatial planning, Sweden has a bottom up system where the municipalities have a very important role. There is no national spatial planning but the State has an important role to play in providing major infrastructure (roads, rail, university facilities etc).

Stockholm region has worked with regional planning since the early 1950s. The regional plan (*Regionplan*) is indicative and is designed to guide municipal planning. As such it is rather process-oriented. In consequence, a lot of informal planning and networking takes place. The municipalities - of which there are 26 in the Stockholm region/county – are obliged to make long term strategic plans (Municipal Comprehensive Plan/*Översiktsplan*). This type of planning is also indicative and not legally binding for the lower level of planning. Lower level planning is concerned with detailed development planning (*Detajlplan*), is legally binding, and is normally associated with building projects. The State is also represented at the county level (*Länsstyrelse*/County Administration) which oversees ongoing planning and which retains certain rights to intervene.

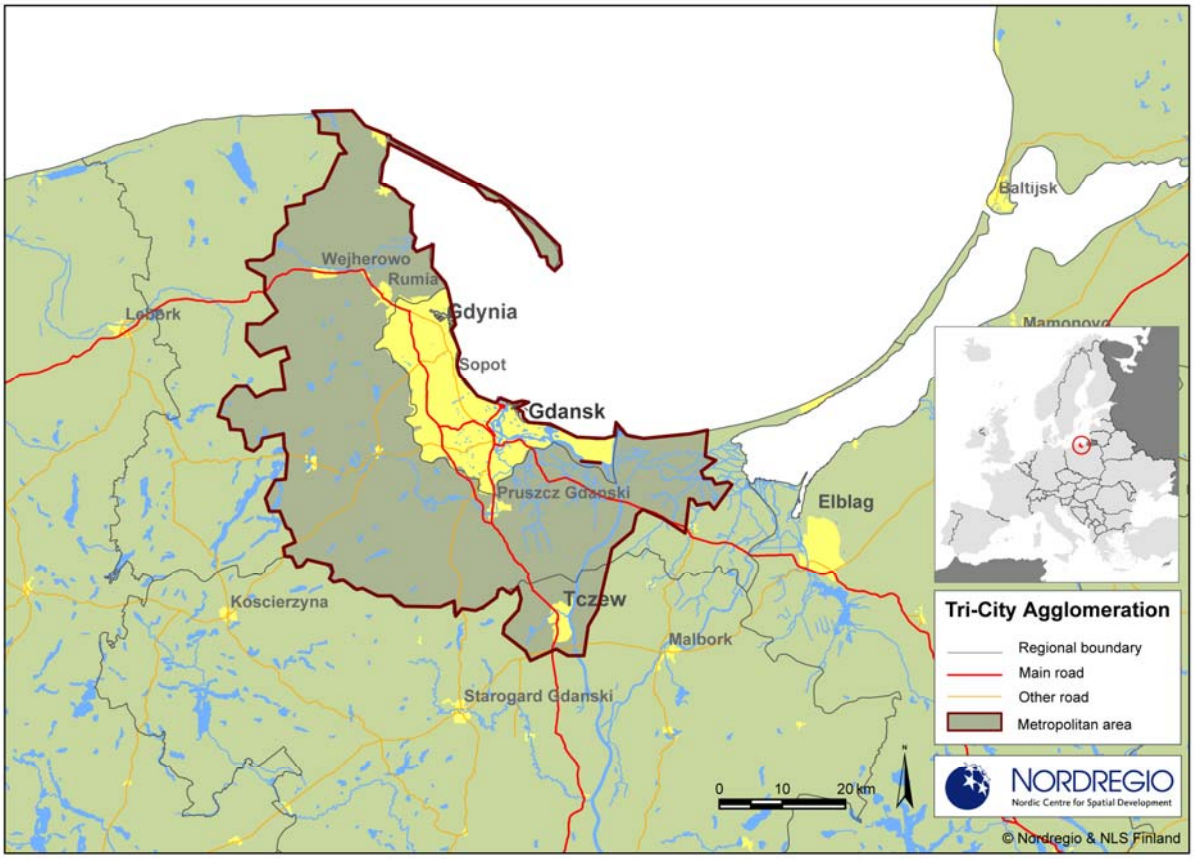
The recently adopted regional development plan RUFS 2010 with a strategic perspective up to 2030, covers the Stockholm County. Stockholm County Council is a designated Regional Planning Authority – its operational organ is the Office of Regional Planning. The Regional Development Plan has to be elaborated in cooperation with the County Administrative Board which is a state organ. The latest regional development plan is both a regional plan in accordance with the planning legislation and a regional development programme in accordance with the special legislation on this issue.

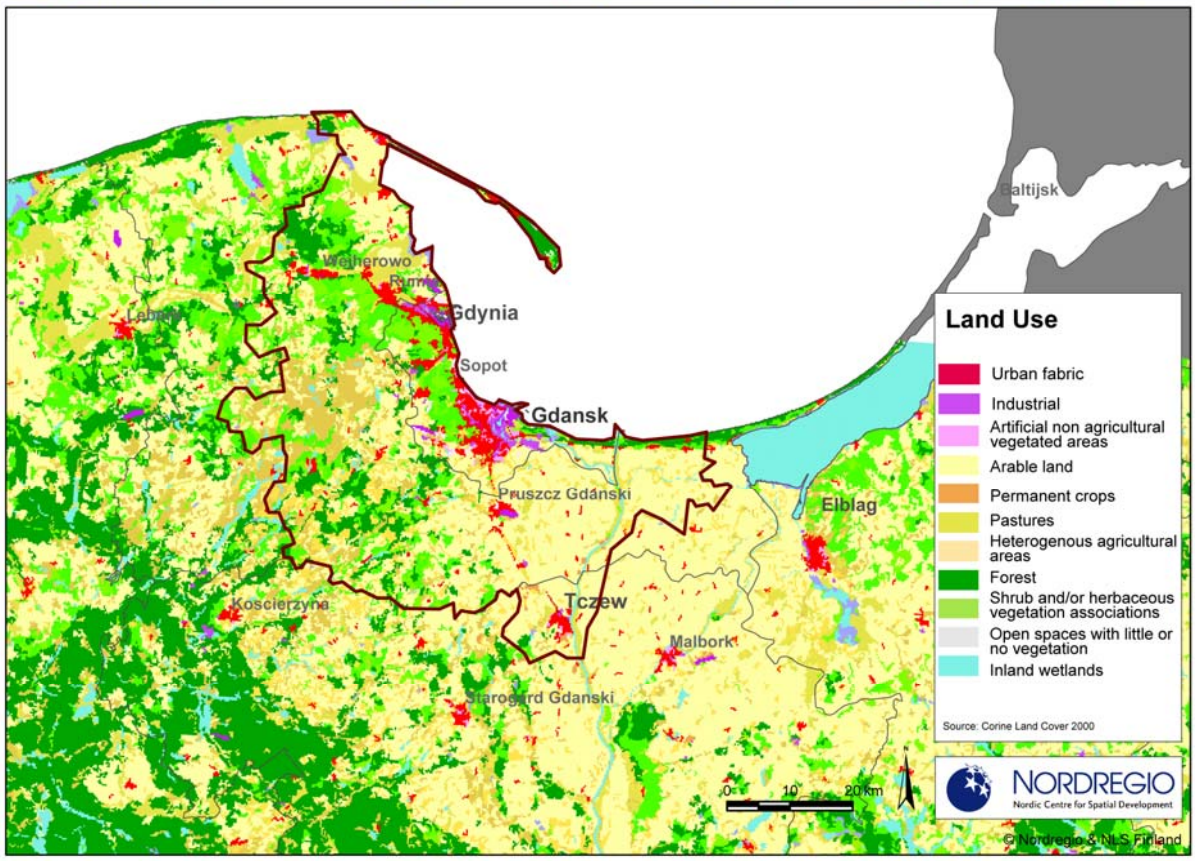
The polycentric structure in the larger functional region is developed through a number of informal planning mechanisms (co-operation between existing regional organisations etc.,) as there is no planning authority for this area. In the regional plan there is however a spatial vision for this larger area (see map below).



Spatial vision 2050 for East Central Sweden

10. Tri-City Agglomeration





Territorial Dynamics

Three 'zones' can be distinguished (see map below) in this metropolitan area:

- 'The core' of the Tri-City metropolitan area consists of the cities of Gdansk, Sopot and Gdynia and has a population of 738 000 and an area of 418 km^2
- the 'functional area around the core' consisting of towns and rural settlements such as Pruszcz Gdański, Rumia, Reda, Wejherowo, Tczew, Kolbudy, and Kosakowo has a population of almost 300 000 and an area of 936 km^2,
- the more 'peripheral part of the metropolitan area' consisting of towns and rural settlements such as Hel, Władysławowo, Jastarnia, Kartuzy, Puck, Pszczółki, and Stegna has a total population around 175 000 and an area of 1 723 km^2.

The 'core' of the metropolitan area is in decline, in respect of both population and jobs, at the expense of the fast growing functional area and the more peripheral parts' of the region which are growing due to the availability of affordable housing and the overall demographic trend there (above average number of children per family). The decline in the number of jobs in the Tri-City has been caused primarily by the political and economical transformation in general and the restructuring of large state-owned companies in particular. New jobs in the functional area and surroundings are predominantly being created by small and medium-sized economies. In addition some companies moved away from the core zone due to high land rents.

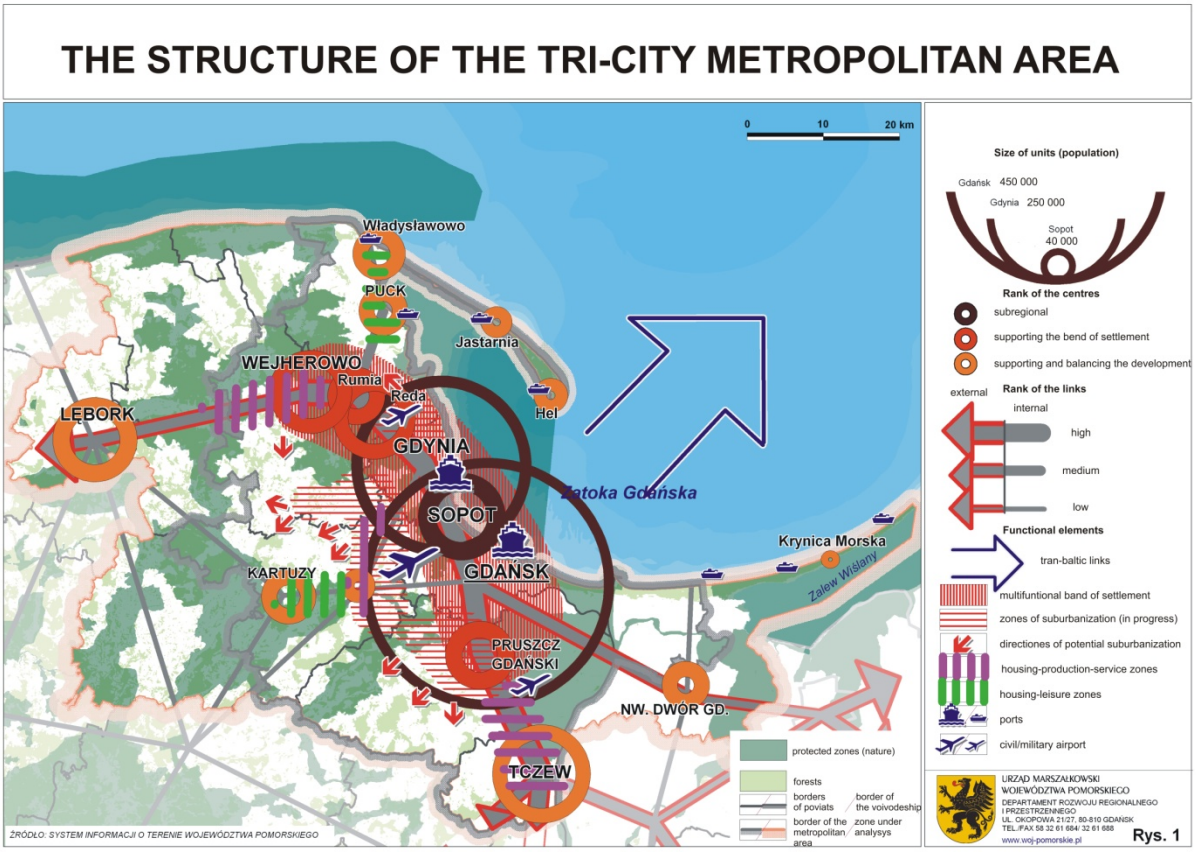
Functional profile

The leading city of the core zone is Gdansk but Gdynia (with its comparable economic and demographic profile) is a strong competitor (see below). The key centres of the 'functional area' are Tczew (main characteristics: medieval core, railway, hospital, industrial sites) and Wejherowo (main characteristics: hospital, concert hall, fast growing housing sector due to migration from Gdynia). Key centres of the more peripheral part of the metropolitan area include Kartuzy (main characteristics: hospital, retail, tourism and agriculture) and Puck (main characteristics: hospital, tourism, fisheries).

- Gdańsk – the capital of the Pomorskie *Voivodeship* (regional district), business and science centre of national importance, metropolitan facilities: international airport and ferry terminal, universities, hospitals, cultural facilities; main branches of economy: maritime industry (port, shipyard and associated businesses), tourism, fuel processing, IT, chemical (cosmetics) production, retail
- Gdynia – a business centre of national importance (in many fields competing with Gdańsk); metropolitan facilities: international ferry terminal, universities, hospitals, cultural facilities, technological park, knowledge-intensive business services (KIBS), main branches of economy: maritime industry (port, shipyard and associated businesses), tourism, software, retail,
- Sopot – one of the most prestigious and expensive locations in Poland, metropolitan facilities: higher education, cultural facilities and the main branches of the economy: tourism/spa and retail.

Since the current governance system is not sufficient in terms of improving the metropolitan area's competitiveness, the concept of polycentricity may help in combining the current economic potentials without losing the identity and individual features of each of the three core cities. The latter is critical since a unique variety of cultural influences appear here in a relatively small area – traditions of The Hanseatic League, Kashubian culture, the remains of Mennonite settlements, convent settlements, etc.

This legacy provides the opportunity to create a unique image of this particular metropolitan area, which however remains challenging to utilise due to intra-regional competition and the lack of a concerted and mutually agreed policy and planning approach.



Planning and governance structure *(see also portrait on Mazovia)*
There is no formal responsible mode of governance for the Tri-City Agglomeration. So far the 'act on metropolitan areas in Poland' has not been adopted by the National Assembly. The act proposes a new mode of governance for such areas which would see them assume some of the tasks currently undertaken by local self-governments.

Due to the 'act on spatial planning and development' (adopted on 27th of March 2003) the marshal of the regional district (*voivodeship*) should prepare a special spatial development plan for the metropolitan area. The same act declares that the delimitation of such areas will be described in the National Spatial Arrangement Policy. The current document was put in place before (2001) the spatial planning act and the only metropolitan area mentioned there is Warsaw. The metropolitan area of the Tri-city is however included in the new National Spatial Arrangement Policy, which has been prepared, but not yet adopted into law.

The new Spatial Development Plan of the Pomorskie Voivodeship (adopted in 2009) contains a special section dedicated to the sustainable development of metropolitan functions in the agglomeration of the Tri-city and its hinterland. This section may become the basis for a spatial development plan for the metropolitan area once the new National Spatial Arrangement Policy is adopted.

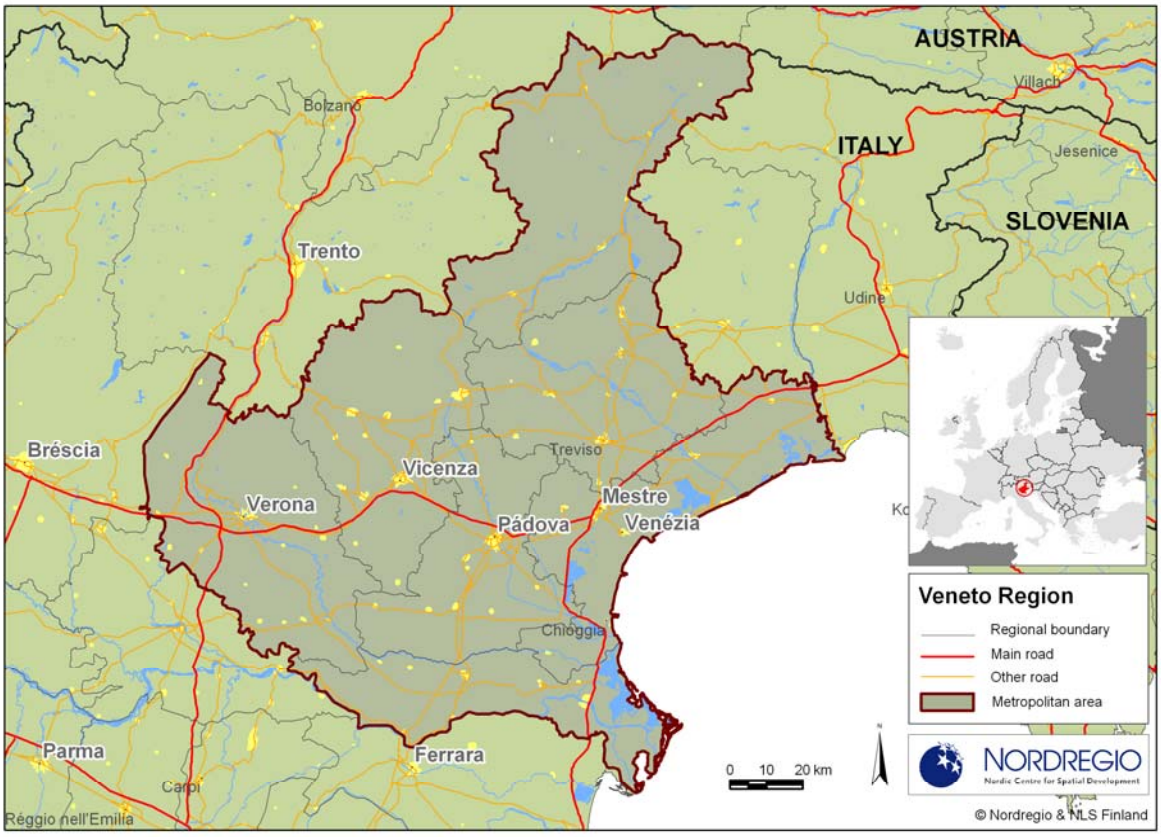
Regional spatial planning is advisory in nature and in practice the marshal of the regional district concerned has the right to interfere in the local spatial development plans only in relation to issues dealing with investment to achieve public goals.

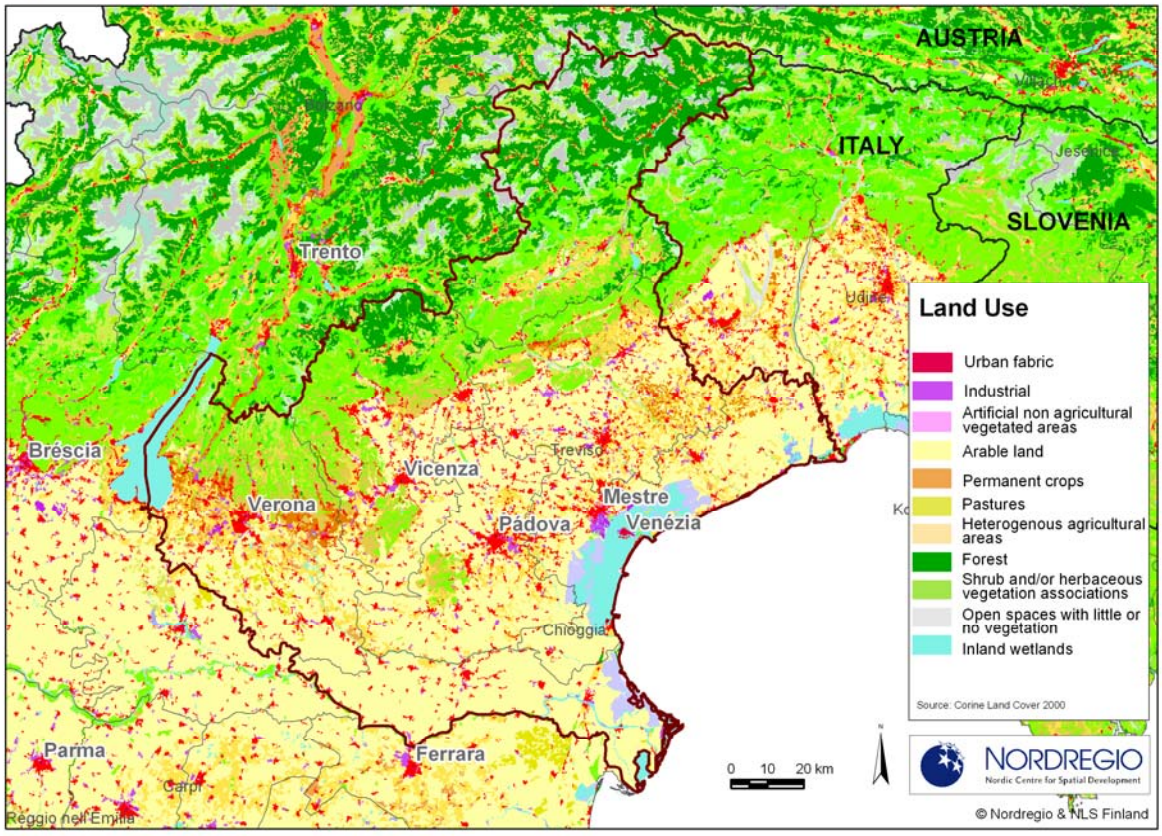
Despite the lack of formal regulations, in 2003 an informal 'Metropolitan Council' with an advisory function was established for the Tri-City metropolitan area. The members of this council include representatives of the local communities ('*gminas*') and the counties ('*poviats*'), while the chairman is the Marshal of The Pomorskie *Voivodeship*.

The Development Strategy of the regional district of Pomorskie emphasises the role of the Tri-city metropolitan area and its polycentric diversity with regard to the competitiveness of the whole region. This is the key document adopted by the regional assembly and it has to be seen as central when the governance system in the metropolitan area is being discussed. There are many stakeholders involved in implementation of the strategy. In addition to local and regional initiatives central government policy, however, continues to have a significant impact on this process.

On the national level many spatial planning documents exist with an impact on the implementation of priorities and strategic objectives. Moreover, other sectoral strategies and programmes are also being formulated, including those in the following sectors: rural areas, transport, environmental protection, human resources, social integration, tourism, science and innovation and economic competitiveness. These documents contain recommendations and arrangements referring to many aspects of the region's development.

11. Veneto Region





Territorial Dynamics

Within the territory of the Veneto metropolitan area there are four different geographic layers:

- a dense and continuous metropolitan one with the capital cities as the main centres: Venice, Padova and Verona, but also Vicenza and Treviso,
- the 'hilly area' that comprises the northern part of Vicenza, from Valdagno, Schio and Thiene to Conegliano, including also the municipalities around Bassano,
- the mountainous area that is characterised by industrial development and excellent touristic potential within a extraordinary landscape,
- the plains area that stretches along the south regional arc, between the Adige and Po rivers.

The entire Veneto metropolitan area (which is similar to the Veneto region) is constituted by 581 municipalities and is divided into seven provinces. It covers a surface of 18 391 km^2 and has around 4.9 million inhabitants (density of 266 per km^2). This area has gained almost 400 000 inhabitants since 2001. 18.7% of the current population are concentrated in the province of Padova and 18.3% in the province of Verona with 838 221 inhabitants. The provinces of Belluno and Rovigo share 4.6% and 5.3% respectively of the total population. The municipalities with a clear urban profile have lost population (in particular those over 50 000 inhabitants) as well as the tiny ones (below 5 000 inhabitants), whereas the municipalities of intermediate size (between 5 000 and 50 000 inhabitants) have grown considerably.

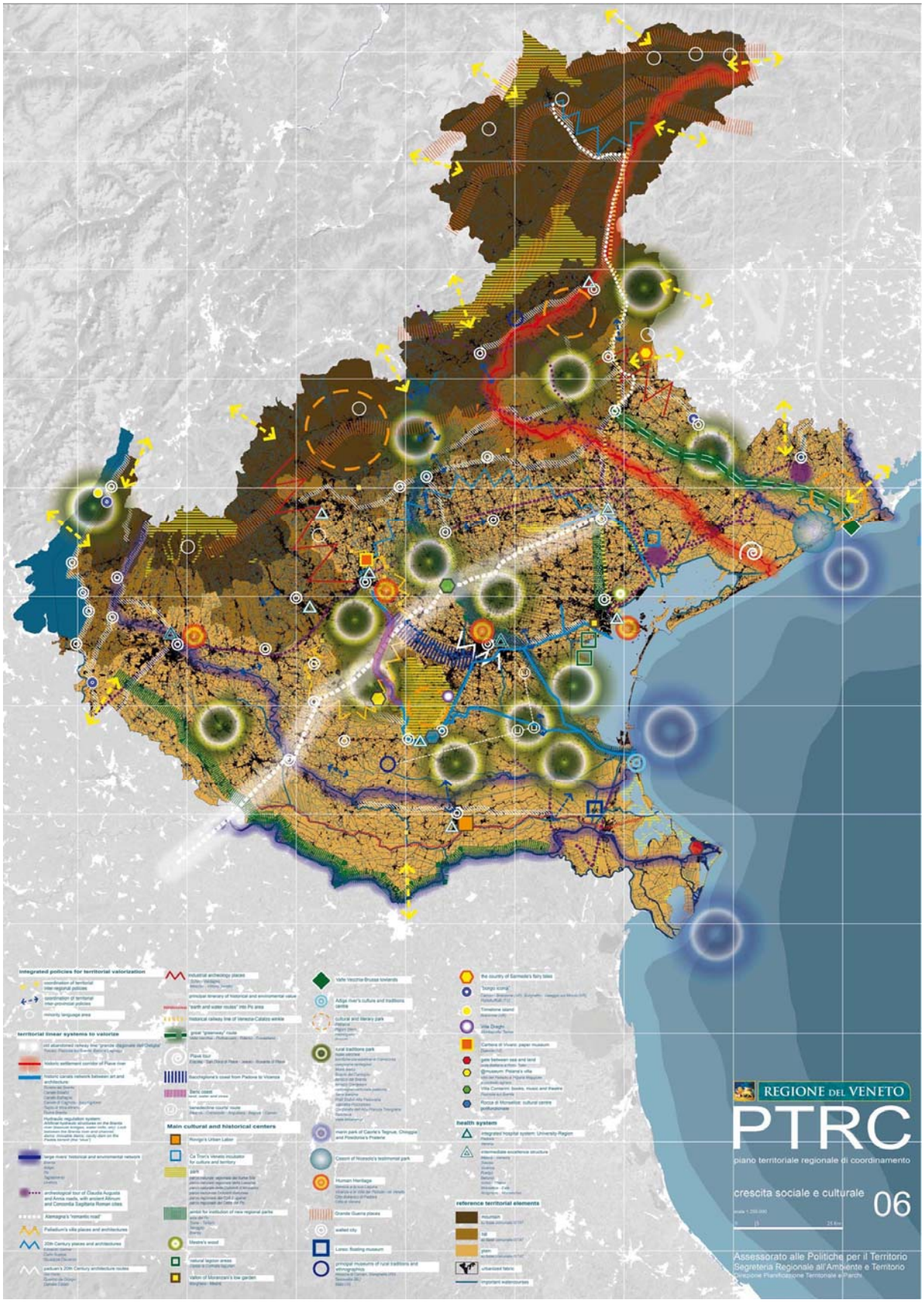
Due to the economic transition from the industrialisation model towards that of services renewed interest can be seen in terms of the metropolitan dimension of the more important 'city centres' within the Veneto metropolitan region, which is mirrored by the respective numbers for employment and consequently (due to the above mentioned trends) by the significant commuter flows.

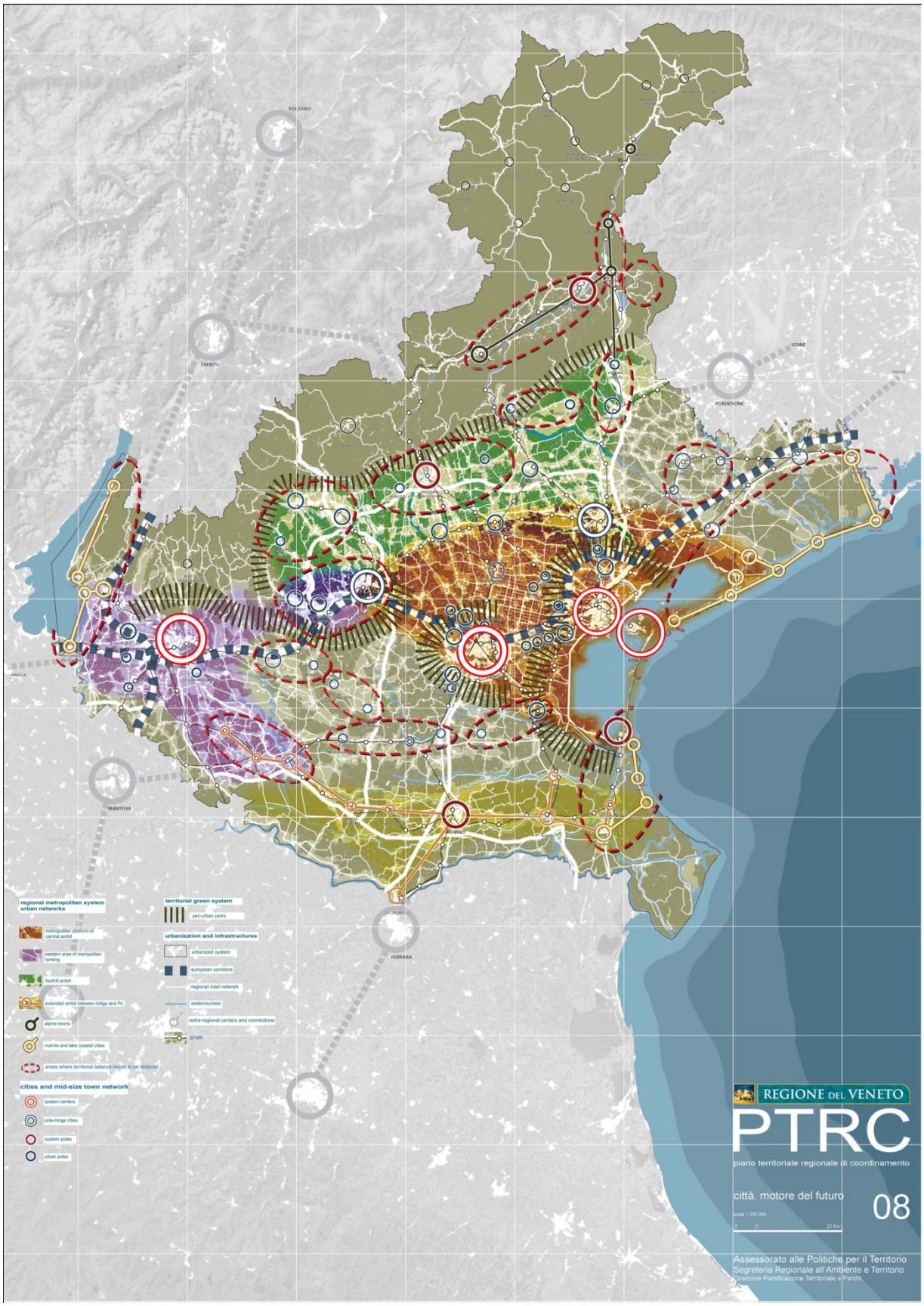
Functional profile

As a response to these trends, the major objectives focussed on maintaining the quality of life in the main urban areas, strengthening the identity of the centres of the existing polycentric urban system, on recovering their centrality as motors of innovation and on promoting efficient and sustainable mobility. As such, the tight net of urban centres undoubtedly constitutes an advantage particularly in respect of the further integration of the Public Transport System within the Veneto metropolitan area. Another major claim is to ensure better external accessibility with neighbouring metropolitan areas. In order to achieve such goals the need remains to control land consumption, to apply the principles of sustainable urban planning and to reduce the environmental impacts of the enormous demand for spatial mobility within the metropolitan area (cf. the next two maps from the regional spatial coordination plan (PTCR) for the Veneto metropolitan area).

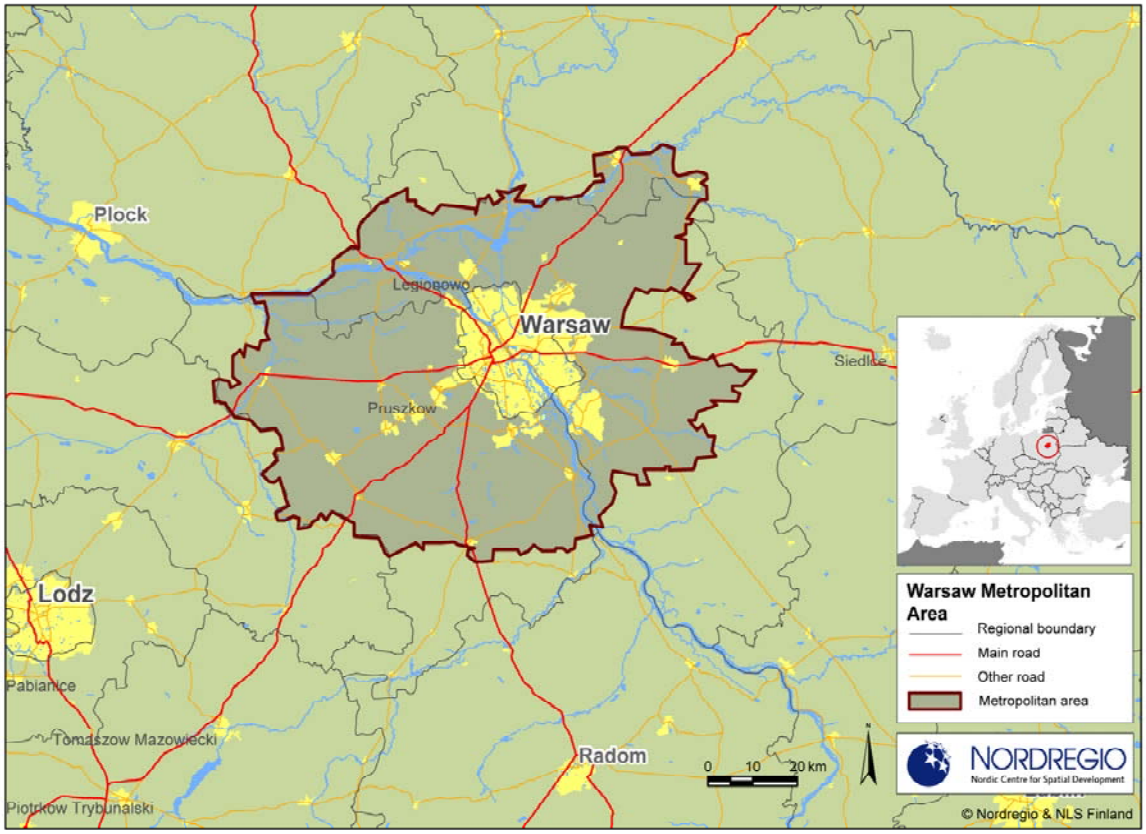
Planning and governance structure

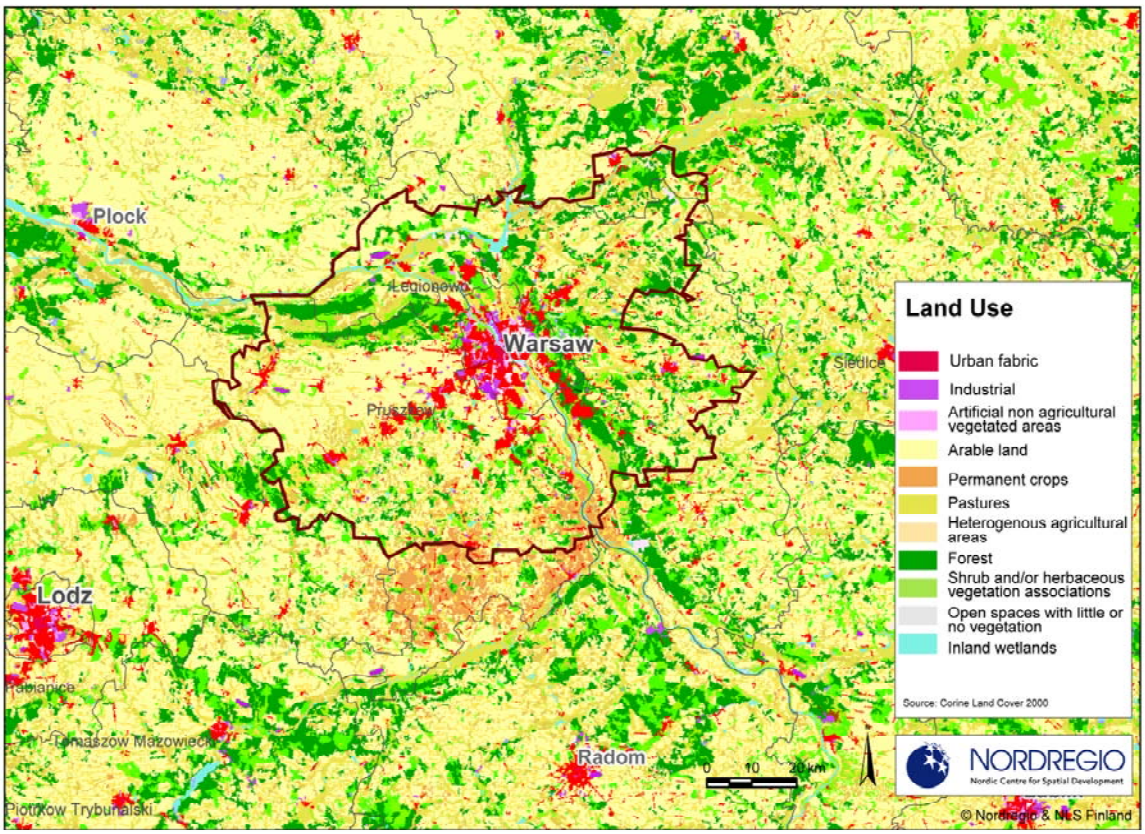
Tools	Body / parties involved	Responsibilities	Territorial scope
Structural territory communal Plan (PAT)	municipalities	fixed the objectives and the conditions of sustainability of the possible transformations and the communal operations plan (PI) relationship with the multi-yearly communal budget, the three-yearly programme of public works	entire municipality
Territorial provincial coordination plan (PTCP)	Provinces	planning instrument that delineates the fundamental objectives and elements of the provincial territory, in coherence with the addresses for the provincial associate-economic development, with regard to the prevailing vocations, to its geologic and geo-morphological characteristics	entire province
Plans for large areas	Veneto Region together with Provinces Municipalities	plans for sustainable development of the areas of environmental significance characterised by the presence of signs historic documentary	parts of the regional territory
Strategic projects	Programme agreements promoted by governments, which have the primary responsibility or mainly on the work or the interventions or programmes of action to achieve	plan works, interventions or intervention programmes of particular relevance for a strategic significant parts of the territory	parts of the territories affected by works programmes or pursue them
Territorial regional of coordination plan (PTRC)	Veneto Region	indicates the objectives and the main lines of organisation and order of the regional territory, let alone the strategies and the actions times to their realisation	entire region


REGIONE DEL VENETO
PTRC
piano territoriale regionale di coordinamento
crescita sociale e culturale
06
Assessorato alle Politiche per il Territorio
Segreteria Regionale all'Ambiente e Territorio


BOLZANO
TRENTO
UDINE
PORDENONE
MANTOVA
FERRARA
regional metropolitan system
urban networks
metropolitan platform of central ambit
western area of metropolitan ranking
foothill ambit
extended ambit between Adige and Po
alpine towns
marine and lake coastal cities
areas where territorial balance needs to be restored
cities and mid-size town network
system centers
pole-hinge cities
system poles
urban poles
territorial green system
peri-urban parks
urbanization and infrastructures
urbanized system
european corridors
regional road network
watercourses
extra-regional centers and connections
SFMR
REGIONE DEL VENETO
PTRC
piano territoriale regionale di coordinamento
città, motore del futuro
08
Assessorato alle Politiche per il Territorio
Segreteria Regionale all'Ambiente e Territorio
Direzione Pianificazione Territoriale e Parchi

12. Warsaw Metropolitan Area





Territorial Dynamics

The Warsaw Metropolitan Area (WMA) stretches across three NUTS 3 areas (Warsaw, Warsaw west and Warsaw east) and is home to almost 3 million inhabitants. The employment rate is 56.7% and is thus above the national average for Poland (51.5%), but still below the EU-27 average in 2009 of 64.6%. The Warsaw Metropolitan Area (WMA) comprises 72 municipalities from 13 counties ('*poviats*') with a population density, on average, of 481 per km^2. The municipality of Warsaw had, in 2008, 1 709 781 inhabitants. The highest densities in terms of population are to be found in Piastow (3 847 km^2), Legionowo (3 675 km^2) and Warsaw (3 307 km^2). The Warsaw Metropolitan Area can be characterised as a relatively fast growing one – in the past 15 years the area has gained 250 000 inhabitants and 150 000 jobs.

In light of the latest census in 2002, the municipality of Warsaw and its metropolitan area have grown both in absolute terms and in relation to other urban places, mostly on account of immigration within the country. Warsaw attracts migrants as a dynamic city, and also due to the fact that its built-up area occupies only 70% of the total land surface within the administrative boundaries of the city, the rest are areas of low density, also of agricultural use. This constitutes an important opportunity for its economic development, the priority of which is a possibly wide functional specialisation both within the city's administrative boundaries, as well as for the whole of the metropolitan area.

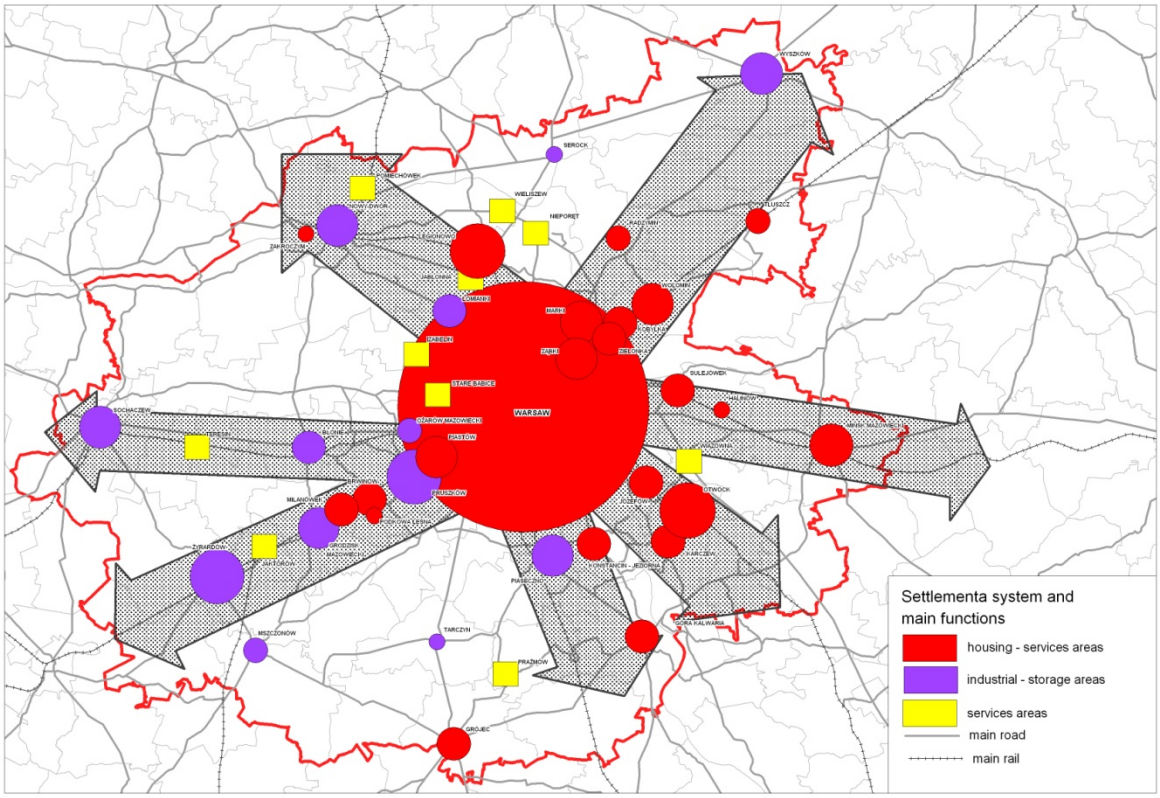
Functional profile

The most important centres in the Warsaw Metropolitan Area are:

- Warsaw – as the main and clearly dominant metropolitan core, with a large set of functions of international importance;
- Pruszków – county capital; tourism, industry and warehouses (rail transport, logistics services);
- Piastów – services, housing;
- Grodzisk Mazowiecki – county capital; high-tech industry;
- Żyrardów – county capital, tourism, high-tech industry;
- Sochaczew – county capital, industry, warehouses, logistics services, services, housing;
- Ożarów Mazowiecki – county capital; industry, warehouses, logistics services;
- Nowy Dwór Mazowiecki – county capital; industry, warehouses, tourism, regional airport location;
- Legionowo - county capital; services, housing;
- Wołomin - county capital; industry, warehouses, services, housing;
- Wyszków - county capital; industry, warehouses, services, housing;
- Mińsk Mazowiecki - county capital; industry, warehouses, services; housing;
- Otwock – county capital; tourism, health resort;
- Konstancin-Jeziorna – tourism, health resort;
- Piaseczno – county capital; industry, warehouses, services, housing;
- Góra Kalwaria – services, housing;

Apart from the city of Warsaw the functional hierarchy between the other cities mentioned here is rather flat. They also show quite similar functional profiles. Most of these cities have good train and road connections with the city of Warsaw. However, most of the transport infrastructure within the Metropolitan Area needs to be upgraded or renewed.

The main challenge regarding intra-metropolitan polycentricity is, however, the rising complexity of this functional (and growing) urban pattern, due to the lack of a comprehensive development strategy and the lack of coordinating mechanisms for the developmental efforts designed and implemented by the many municipalities constituting this metropolitan area.



Planning and governance structure

(see also portrait on the Tri-City metropolitan area)

The Warsaw Metropolitan Area (WMA) has not been, in a formal sense, legally established. All relevant decision-making planning documents are developed in the autonomous municipalities. The self-government of the Mazovia regional district is currently elaborating a spatial plan for the Warsaw Metropolitan Area. This document will define in greater detail the future planning and policy approach. At the national level the central government agencies are responsible for the preparation of the main strategic and planning document (the Concept of National Spatial Development: *Koncepcja Przestrzennego Zagospodarowania Kraju*), which should be prepared in a participatory manner (cooperation with local governments and other entities including sectoral interest groups).

The regional government is responsible for creating a spatial policy for the entire region. The Spatial Development Plan formulates the spatial planning approach for the entire region, in particular by indicating areas intended for settlement, the location of regional roads and the shape of other infrastructural networks, investments serving the region's public purposes, protected areas and their buffer zones, 'metropolitan areas' as well as so-called "problematic areas" and other areas of particular interest (e.g. flood-risk areas or mineral deposits).

It should however be noted that spatial development plans for metropolitan areas are being prepared for the first time in the history of Polish planning; the plan for the Warsaw Metropolitan Area is currently under preparation. Changes in legislation at the national level with a view to formally creating and managing the Metropolitan Area are necessary, but have not yet been adopted. The municipalities play a crucial role in spatial planning and development. It should nevertheless be acknowledged that the exact location of functions, the intensity of land-use, scale and forms of buildings and other elements of infrastructure depend on the formal and binding decisions made by the local authorities.

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