A Strategic Knowledge and Research Agenda on Polycentric Metropolitan Areas
A Strategic Knowledge and Research Agenda on Polycentrism
Management Summary

Polycentric metropolitan areas – Polycentric metropolitan areas are collections of historically distinct and both administratively and politically independent cities located in close proximity and well-connected through infrastructure. They have potential for further integration, which would allow reaping the benefits of agglomeration in a network of cities. The coalescing of cities into regional metropolitan entities results from either a process of ‘incorporation’, when dominant cities extend their sphere of influence over ever larger territories, thereby incorporating once independent smaller cities, or, it results from the ‘fusion’ of closely located cities as a result of the continuing spatial scaling up of the behaviour of people and firms.

An increasingly dominant urban form – Using conservative standards, the number of people living in polycentric metropolitan areas in Europe amounts to 166.6 million. This is 48.5% of the total urban population in Europe. At a more fine-grained spatial scale, many more such polycentric metropolitan areas are identifiable, resulting in polycentric metropolitan areas becoming the dominant urban form in Europe.

Policy challenge – Over the past decade, polycentric metropolitan areas have become an increasingly widespread but relatively new policy issue at the European, national and regional levels. There are high expectations when it comes to integrated development of polycentric metropolitan areas. For example, it is often assumed that the cities constituting such polycentric metropolitan areas are more competitive because they gain political and economic mass. At the same time, a polycentric structure is believed to be helpful in avoiding typical costs of agglomeration such as congestion, crime and socio-economic disparities.

Research challenge – However, research is not conclusive as regards these assumed potentialities. Many theories and methods in scientific research have been developed with the increasingly obsolete image of ‘the single city surrounded by a rural hinterland’ in mind. These theories and methods do not acknowledge the fact that metropolitan areas nowadays are often formed by collections of such once independent, but now increasingly interwoven cities. This implies that studying polycentric metropolitan areas requires the development of new theories and perspectives. Over the last one and a half decade, when research into polycentric metropolitan areas started to expand, much of the attention of researchers has been devoted to conceptual and agenda-setting issues. It is time to move on towards a more critical examination of their performance in order to arrive at empirically justified development strategies for polycentric metropolitan areas.

Objective EMI’s Knowledge and Research Agenda – So far, important knowledge questions as regards the processes at play in polycentric metropolitan areas and how these affect metropolitan performance remain largely unanswered. EMI’s knowledge and research agenda on ‘Polycentric Metropolitan Areas’ presents the main challenges derived from the transition from single, monocentric cities to polycentric metropolitan areas and the knowledge needs that emerge from these challenges. Confrontation of these needs with the current scientific state of the art resulted in a
research agenda that will help make European cities and their metropolitan areas more competitive and sustainable, and will enhance the well-being of their citizens and the productivity of their firms. Leading principle in defining this knowledge and research agenda has been ‘research based, practice led’.

**Methodology** – EMI’s Knowledge and Research Agenda on Polycentric Metropolitan Areas is based on an extensive input of both urban practitioners and academic researchers. This data and information was organized by means of a variety of methods. We analysed the position of polycentric metropolitan areas in contemporary policy strategies across Europe and studied the scientific literature on polycentric metropolitan areas. A roundtable with prominent key experts (Prof. Wim Hafkamp; Prof. Sir Peter Hall; Mr. Jaap Modder; Prof. Hugo Piemus; Prof. Catherine Ross; Prof. Alain Thierstein) was organized during the annual conference of the Regional Studies Association. We acquired a broad overview of the ideas of urban professionals about polycentric metropolitan areas in general, their level of integration, and the knowledge questions they have, by conducting a questionnaire among the 100 largest Functional Urban Areas in Europe. This was complemented by a more systematic and detailed series of case studies, once developed with the input of both urban practitioners and academic researchers. This data and information will be crucial for researchers to be able to visualize the positive and negative effects of further integration between cities in polycentric metropolitan areas, and how these can have different impacts on individual cities. Scientific progress can only be made if and when the many theories, concepts, models and methods, once developed with the in some respects outdated image of the monocentric city in mind, are reframed and linked to the new spatial reality of polycentric metropolitan areas.

**Results questionnaire** – The response rate to our questionnaire was substantial: 43%. Respondents stated that polycentric development and integration between cities are important issues that should be explored and analysed more in-depth within the coming years. Results dispute the assumption that functional, cultural or institutional/political contexts of these metropolitan areas are similar. With some minor exceptions, however, these differences are not related to the location of metropolitan areas. Challenges are largely similar in polycentric metropolitan areas all across Europe.

**Case studies: Cultural integration** – The six case studies represent the great variety in approaches towards (integration within) polycentric metropolitan areas. In some of our cases, attention was predominantly focused on exploiting internal potentials through enhanced integration, while others were first of all seeking to exploit external opportunities, e.g. achieve additional funding, or a better marketing of the region. We found considerable differences in functional, cultural and institutional integration between ‘incorporation-type’ and ‘fusion-type’ polycentric metropolitan areas.

**Case studies: Functional integration** – As could be expected, the extent to which cities in polycentric metropolitan areas are integrated is very much dependent on the (time) distance between the cities, as well as their sizes. Main drivers behind functional integration are infrastructure/transit systems and complementarity. Good infrastructural and transport networks between cities are an essential precondition to achieve the benefits of a large city in a network of smaller cities. Complementarity, to be understood as mutually beneficial specialisations of cities in polycentric metropolitan areas, limits potentially wasteful competition, fosters integration and eases cooperation.

**Case studies: Cultural integration** – Many inhabitants of polycentric metropolitan areas cognitively consider themselves part of such a wider metropolitan area, while at the same time they feel much more

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**Figure I** Themes that cities want to have addressed by research to help them guide and improve future metropolitan development
attached to their own city. It appears that strong local identities do not hamper regional co-operation as much as political leaders in our case study regions sometimes appear to think. ‘Symbols’ fostering identity are often still local rather than regional symbols.

Case studies: Institutional integration
- In attempting to achieve coherent metropolitan development strategies a number of contextual issues were found to be important. One of these issues is the relation with the overarching regional government(s). It is far from self-evident that the agendas of region and cities are made to be similar, but if these levels were to create a complementary/joint agenda it would make a considerable difference to the coherence. The balance in importance of the different municipalities in the polycentric metropolitan area was found to be another important issue. The large interdependencies should prevent the larger central city (cities) from taking a too dominant or self-interested role, while other local jurisdictions need to be better aware of how their performance also depends on the central cities faring well and the policy agendas that lead to such a good performance. Institutional co-operation is also highly dependent on political leadership and a culture of co-operation, which takes time to build. There also is a danger of ‘over-institutionalisation’, if and when metropolitan cooperation and coordination starts to become a goal in itself, rather than an instrument. Another complicating factor is the democratic ‘gap’: local representatives needing to think regionally, while being elected to safeguard the local interests. Without hard research evidence on how decisions taken for ‘the regional good’ trickle down locally, and how regional performance affects local performance on the long run as well, it is hard to overcome this gap.

The challenge & solution: the process of ‘metropolisation’ – The way to truly gain political and economic power and visibility for cities in polycentric metropolitan areas is to enter the upward spiral of metropolisation, move up in this spiral through fostering functional, cultural and institutional integration, and hence allowing to reap the benefits of agglomeration by jointly borrowing size from each other. There is much to gain from a process of metropolisation in polycentric metropolitan areas. Meta-analysis research has shown that a city double the size of another one is, on average, 5.8% more productive. The reason for such agglomeration economies are well-defined: larger cities allow for a larger and more multi-functional labour pool, the presence of better infrastructure and public and private facilities and amenities. They are also more likely to accommodate knowledge generating institutions, have greater innovation potential, and their diversity makes them resilient. If, for instance, Rotterdam and The Hague, agglomerations with both about 1 million inhabitants, would fully integrate and subsequently enjoy the benefits of being a city of 2 million inhabitants, expressed in a 5.8% increase in productivity, this would mean that the potential gain of metropolisation would amount to 4.5 billion euro. Yearly, that is. As these cities are already integrated to a certain degree, and hence, also borrow size from each other, the gain would be somewhat less. But the message is clear: metropolisation is a highly urgent and beneficial strategy.

A knowledge and research agenda on polycentric metropolitan areas and metropolisation – The process of metropolisation provides the basis for a challenging knowledge and research agenda. Through all the methods that were applied, EMI identified critical gaps in our knowledge. Knowledge that is deemed essential by urban practitioners and researchers alike. A detailed knowledge and research agenda is presented in chapter 13.

The process of metropolisation provides the overarching framework for EMI’s knowledge and research agenda. How exactly is metropolisation linked to performance in polycentric metropolitan areas? How can cities enter, and move upward in the spiral of metropolisation? Which factors foster or hinder moving upwards in this spiral, and how exactly are functional, cultural and institutional integration related? How can cities ‘borrow’ size from each other in order to exploit their joint critical mass? How far have polycentric metropolitan areas moved upwards in this spiral, what have they gained, and perhaps lost, and what is left to be gained? What are the negative effects of metropolisation, or how can the costs of agglomeration be kept limited in polycentric metropolitan areas?

In addition, research should focus also on the individual elements of this process of metropolisation. This includes the spatial-functional dynamics in polycentric metropolitan areas, such as how the roles and functions of cities change in a process of integration. Also, the cultural side to metropolisation is important and under-researched. How do people and firms identify, or perhaps even feel attachment to different territorial units, and does it, for instance, affect their spatial behaviour? Then there is the institutional dimension, which is about finding effective and efficient ways to arrive at a (to be defined, and context-dependent) optimal level of regional coordination and cooperation. The development of instruments that
allow for trade-offs to balance the 'regional good' and local interests will be particularly crucial.

**Invitation** – EMI is strongly convinced that connecting academic researchers with urban practitioners will create significant added value for both worlds. EMI aims to form coalitions of urban practitioners and researchers to further address this knowledge and research agenda. The aim is to create a strictly 'research-based, practice-led' research programme for, of and by cities, which is firmly rooted in a solutions-oriented approach. EMI invites all interested cities, urban professionals, umbrella organisations and academic institutes to take part in this programme.

### 1 Introduction

#### 1.1 From City to Polycentric Metropolitan Area

From the 19th century onwards, the classic monocentric model of cities started to change slowly. Cities grew massively due to industrialisation processes. Suburbanisation started late in the 19th century, and was accelerated by rising income levels, which, combined with the invention of, and increasing affordability of the automobile and other transportation systems and the large scale construction of road infrastructure, allowed to live in less dense places, where housing affordability was higher, and typical agglomeration disadvantages as congestion, crime etc. were less present. During the 20th century, these processes gained ever more momentum. Suburban centres developed next to central business districts, while suburban satellites developed next to the city. Hence, the polycentric city emerged, with a more spatially specialised metropolitan layout incorporating many different types of centres (Roberts et al., 1999; Hall, 2001). It is widely acknowledged nowadays that all post-industrial cities are in fact polycentric (Hall, 1997).

Yet, this process does not stop with the emergence of polycentric cities. Spatial dynamics continue to scale up, which means that we are now entering a new phase of urbanisation, in which sets of in itself polycentric cities start to coalesce into polycentric metropolitan areas. Once rather distinct and relatively independent cities are increasingly linked together. Hence, traditional interpretations of the ‘city’ as being a single urban core surrounded by a rural hinterland are rapidly giving way to more regionalized interpretations of urbanity. What is urban nowadays spreads out over a vast territory encompassing many urban and suburban communities that once were relatively distinct entities but that are now increasingly linked together by infrastructures and flows extending over an increasingly

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**Figure 1** The evolution of polycentric metropolitan areas.

*Source: based on Champion, 2001; adopted from Lambregts, 2009*
wide metropolitan territory. This apparent coalescing of cities into regional urbanized entities is linked to the transition from an industrial to a post-industrial era and as such, can be considered the way changes in economic, political-institutional and technological processes, most notably globalization, in our society manifest themselves spatially (Scott, 1998; Scott et al., 2001; Phelps and Ozawa, 2003; Kloosterman and Lambregts, 2007).

That we are living in ‘a regional world’, as Storper (1997) has put it, is reflected in the many recent concepts that consider the city a regional phenomenon, including ‘networked cities’ (Batten, 1995), ‘the Regional City’ (Calthorpe and Fulton, 2001), ‘Global City Regions’ (Scott, 2001a), ‘polycentric urban regions’ (Kloosterman and Musterd, 2001), ‘megapolitan areas’ (Lang and Dhavale, 2005), ‘polycentric mega-city-regions’ (Hall and Pain, 2006), ‘the polycentric metropolitan areas’ (Lambregts, 2009), or simply ‘mega-regions’ (Regional Plan Association, 2001; Lambregts, 2007). A third approach considers polycentric development as a normative planning strategy applied at national and particularly transnational scales (see for instance Albrechts, 1998; Davoudi, 2003; Shaw and Sykes, 2004; Waterhout et al., 2005). The second considers polycentric development as a spatial process, resulting from the outward diffusion of (often higher-order) urban functions from major centres to nearby centres (Kloosterman and Musterd, 2001; Hall and Pain, 2006). A third approach considers the spatial outcome of this process, and in the literature we find a plethora of concepts describing the resulting spatial configuration of contemporary urban areas (see previous section). Although the labels of these concepts nearly all contain the word ‘polycentric’ in various connections to such territorial concepts as ‘city’, ‘urban region’, ‘mega-city-region’, ‘metropolitan area’, and ‘global city region’, in practice we find greatly diverging interpretations of what makes such territories polycentric, as well as diverging approaches to measuring polycentricity. Here, we interpret polycentricity as the spatial outcome of the scaled-up spatial tendencies rather than as a normative planning concept.

It is common to define polycentric metropolitan areas on the basis of their key characteristics. For instance, Hall and Pain (2006:3) define it as ‘a new form: a series of anything between 10 and 50 cities and towns, physically separate but functionally networked, clustered around one or more central cities, and drawing enormous economic strength from a new functional division of labour.’ Florida et al. (2008:459) simply refer to ‘integrated sets of cities and their surrounding suburban hinterlands across which labour and capital can be reallocated at very low cost’. Kloosterman and Lambregts (2001) refer to polycentric metropolitan areas as collections of historically distinct and both administratively and politically independent cities located in close proximity and well connected through infrastructure. Here, we adopt this last definition, which differs from the others in that it allows to include areas which have potential for further (functional) integration (as infrastructure is present), which implies that strong (functional) ties do not have to be present yet. This is in line with the current state of play in Europe: there are many clusters of close-by cities in which there is strong potential for improved performance, but that may not have materialized yet due to a variety of barriers that need to be overcome.

Despite this definition stressing the common characteristics as polycentricity and the potential for strong linkages between centres, it is also necessary to distinguish two different types of polycentric metropolitan areas. The difference between them lies in the evolution of their spatial structure and the degree to what extent a dominant city is present. Figure 1 gives an overview of both the evolution and the outcome of polycentric development as a process of spatial transformation.

Polycentric metropolitan areas may take the form of dominant cities extending their sphere of influence over ever larger territories, thereby incorporating once distinct smaller cities – the incorporation mode –, or the fusion of several such polycentric cities in a (at least morphologically) more balanced settlement system – the fusion mode. A clear example of the incorporation mode is for instance London, that exerts its influence over the Greater South East of the United Kingdom (Allen, 1992; Coe and Townsend, 1998), thereby incorporating smaller, distinct cities such as Reading or Cambridge. Similar processes occur around Paris and Madrid to name but a few examples. A clear example of ‘fusion mode polycentric metropolitan areas’ are regions such as the Randstad in the Netherlands, or the central Belgian urban network that is often labelled the ‘Flemish Diamond’ (Albrechts, 1998), where independent cities have coalesced to form metropolitan regions. While both the incorporation mode and the fusion mode result in polycentric metropolitan areas, there is a major difference between the two in terms of hierarchy. The fusion mode takes place in more balanced regions, whereas the incorporation mode is present in regions dominated by a single larger city-region. In terms of spatial organisation, as well as performance, there may be important differences between both types of polycentric regions (Hall and Pain, 2006; Meijers and Burger, 2010).

Figure 1 also is useful to stress what we do not mean when we talk about polycentric metropolitan areas, which is important to avoid any confusion. Just to make sure: we do not mean ‘polycentric city’ (phase 2), in which the centres are pockets of employment density within cities or surrounding satellite towns. Rather, centres in polycentric metropolitan areas (phase 3) are constituted by individual cities, which on a lower spatial scale exhibit all the features of a polycentric city. 1

Finally, the literature makes a distinction between morphological and functional mode. A clear example of the incorporation mode is for instance London, that exerts its influence over the Greater South East of the United Kingdom (Allen, 1992; Coe and Townsend, 1998), thereby incorporating smaller, distinct cities such as Reading or Cambridge. Similar processes occur around Paris and Madrid to name but a few examples. A clear example of ‘fusion mode polycentric metropolitan areas’ are regions such as the Randstad in the Netherlands, or the central Belgian urban network that is often labelled the ‘Flemish Diamond’ (Albrechts, 1998), where independent cities have coalesced to form metropolitan regions. While both the incorporation mode and the fusion mode result in polycentric metropolitan areas, there is a major difference between the two in terms of hierarchy. The fusion mode takes place in more balanced regions, whereas the incorporation mode is present in regions dominated by a single larger city-region. In terms of spatial organisation, as well as performance, there may be important differences between both types of polycentric regions (Hall and Pain, 2006; Meijers and Burger, 2010).

1 Especially in the US, the first association of polycentricity tends to be ‘polycentric cities’.
Polycentric Metropolitan Areas in Europe

The morphological and functional dimensions connect well to the definition of Kloosterman and Lambregts (2001) adopted at the previous page. This definition forms the starting point for our understanding of the concept of polycentric metropolitan areas, and also includes metropolitan areas without (strong) functional ties:

1.3 Polycentric metropolitan areas: a widespread phenomenon

How widespread is the phenomenon of polycentric metropolitan areas? Some recent research projects may give us some first clues. A very interesting study is the study on 'Metropolitan Areas in Europe' conducted by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR; 2011), in which peaks of metropolitan functions are identified irrespective of, and not departing from a given, pre-defined classification of metropolitan areas. Instead, these are defined on the basis of the substantial presence of such metropolitan functions in the field of politics, economy, science, transport and culture. In the study, 94 metropolitan areas are considered monocentric, and 31 are considered polycentric, the Dutch Randstad being perhaps most polycentric with 7 main cores of metropolitan functions in it. Table 1 sums up these 31 polycentric metropolitan areas:

The ESPON 1.1.1 project (Nordregio et al., 2005) tried to get an understanding of the potential of further integration of cities with their neighbouring cities. They compared nationally defined functional urban areas (FUAs; in general: daily urban systems centred on one urban core) with the number of people that can be reached from the centre of the FUA within a 45 minute isochrones drive by car (which they label 'PUSH' area: Potential Urban Strategic Horizon). Obviously, if the PUSH area is much larger than the FUA area, then there is a lot to be gained (in terms of critical mass, e.g. an enlarged labour market and more support for metropolitan functions) from further integration. In Figure 2 such areas that would benefit strongly from further integration are coloured yellow/orange/red. In particular the red ones gain enormous weight when strengthening their relationships with their neighbours. Green-coloured FUAs indicate that there is not much to be gained from the surrounding areas. However, as can be seen in Figure 2, there is much to be gained for the vast majority of FUAs in Europe, perhaps more for the medium-sized rather than the largest cities.

Table 1 Polycentric metropolitan areas according to BBSR study

<table>
<thead>
<tr>
<th>Number of clusters of metropolitan functions within metropolitan area</th>
<th>Names of the metropolitan areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 clusters</td>
<td>Randstad Holland</td>
</tr>
<tr>
<td>5 clusters</td>
<td>Brussels, London, Paris, Rhine-Ruhr,</td>
</tr>
<tr>
<td>4 clusters</td>
<td>Gresund (Copenhagen-Malmö)</td>
</tr>
<tr>
<td>3 clusters</td>
<td>Helsinki, Maas-Rhine, Manchester-Liverpool, Moscow, Rhine-Main, Rhine-Neckar, Stockholm, Vienna-Bratislava and Zurich</td>
</tr>
</tbody>
</table>

Figure 2  Comparison of population figures for nationally defined FUAs and PUSH areas according to 45 minute isochrones.

Figure 3  Detail of a map depicting polycentric metropolitan areas.

Figure 3 presents results from a follow-up ESPON project, ESPON 1.4.3 (IGEAT et al., 2007), in which a number of ‘poly-FUAs’ (polycentric Functional Urban Areas) were identified. It is based on data from 2002, and they have been identified on the basis of the distance separation between cities, using a 60km threshold for cities of more than 500,000 inhabitants and 30 km for smaller cities, as well as the fact that their labour basins touch each other (see IGEAT-ULB et al., 2007, p.19).

Note that these rules prevent smaller polycentric metropolitan areas to be identified (which do not meet these size thresholds), so in practice, Europe contains many more polycentric metropolitan areas. In addition to poly-FUAs, the map also includes what is called ‘super-poly-FUAs’, which are combinations of poly-FUAs.

What these ESPON projects show, is the enormous potential gain in critical mass, and hence in agglomeration benefits, that can be achieved through stronger integration in the many polycentric metropolitan areas across Europe.

1.4 The need for a practice led research agenda

EMI’s knowledge and research agenda on ‘Polycentric Metropolitan Areas’ addresses the main economic, environmental, social, institutional and governmental challenges related to the transition of cities towards becoming part and parcel of larger polycentric metropolitan areas. The objective is to strengthen European metropolitan regions by means of integrated, coordinated and overarching knowledge. Leading principle in defining this knowledge and research agen-
da is research based, practice led, which is essential to bridge the gap between urban knowledge and urban practice. All across Europe numerous benchmark activities take place and “best practices” are shared between cities. And for good reasons. Rather than reinventing the wheel again and again, it makes sense for cities to learn from experiences in other cities. Many urban policies are based upon these evaluations of experiences in other cities. However, the transfer of policies from one place into another specific urban setting call for prudence, as different circumstances may imply that what works in one place is not necessarily effective in another place. Yet, this widespread practice of policy transfer underlines the fact that European cities are often facing similar and common challenges and calls for a more integrated approach towards addressing them.

Even though local, regional, or national institutional contexts may differ, the basic challenge posed by the transformation from city to polycentric metropolitan area remains the same across countries. The basic questions and principles are similar. At the same time researchers and knowledge institutions have insight into processes shaping European cities and ways to improve their performance, but often fail to get this across to urban practitioners and policy makers. This shows a potential for solid research and improvement of the link between knowledge and urban policy in Europe. We are convinced that by connecting academic researchers with urban practitioners it is possible to create a significant added-value for both worlds.

This agenda presents the main challenges deriving from the transition from monocentric cities to polycentric metropolitan areas and the knowledge needs of cities that come coupled with these challenges. But there is more. Being part of a polycentric metropolitan area also offers new potentialities for cities to become more competitive for a number of reasons:

- It allows metropolitan areas to better exploit their critical mass in order to provide more benefits of agglomeration to their citizens and firms, such as more/better services, amenities and an attractive living and working environment;
- It provides possibilities to avoid internal competition and foster innovation and efficiency in order to become economically more competitive;
- It can help to reduce negative externalities that come with more intertwined spatial dynamics, such as increased traffic flows and contradictive land claims.

Although these potentialities are often stated in policy documents, there is not yet enough insight in the ways in which, and under what conditions, these potentialities may materialize in practice. EMI’s knowledge and research agenda on ‘Polycentric Metropolitan Areas’ addresses exactly these questions: What knowledge do cities and metropolitan areas need in order to face the main economic, environmental, social, institutional and governmental challenges of the transition of cities towards becoming part and parcel of larger polycentric metropolitan areas, and how can they reap the potential benefits of this transition?

### 1.5 Methodology to develop the agenda

This knowledge and research agenda has been informed by the extensive input of both urban practitioners and academic researchers across Europe. This input was organized through different methods. First, since polycentric metropolitan areas feature often in regional development policies, we analysed its position in contemporary policy strategies across Europe. This gives insight in the policy context of European polycentric metropolitan areas.

In a second phase, we analysed the scientific literature on polycentric metropolitan areas, thereby particularly focusing on the knowledge agenda as put forward by researchers. In addition, during the Regional Studies Association annual European conference in Delft, the Netherlands in May 2012, we organized a roundtable in which key academics in the field participated and gave us our view on several key issues surrounding the concept of polycentric metropolitan areas.

After this stage, we organized the input from cities, or urban professionals, in two ways. First, we acquired a broad overview of their ideas about polycentric metropolitan areas in general, the knowledge questions they have, and the level of integration of their city with neighbouring cities by conducting a questionnaire among the 100 largest Functional Urban Areas in Europe. This broad overview was complemented with a more focused and detailed series of on-site case studies, conducted in six different European polycentric metropolitan areas.

### 1.6 Structure of the Research Agenda

Having introduced the theme of polycentric metropolitan areas and the objectives of this Knowledge and Research Agenda in this chapter, chapter 2 will discuss the position of polycentric metropolitan areas in key policy documents. Here we distinguish between European-level policies and national and regional policies. The third chapter presents the scientific state of the art on polycentric metropolitan areas. In chapter four, we present the viewpoints of urban professionals on polycentric metropolitan areas as gathered through our questionnaire. Chapter five presents the six case studies that were conducted. A central element in these case studies is the question to what extent integration between the cities constituting these metropolitan areas has progressed, and how this is fostered or hampered. All these chapters culminate into the final chapter, which is the de-facto Knowledge and Research Agenda.
Polycentric metropolitan areas: key concept in regional development policy

Polycentric metropolitan areas took centre stage in many regional development policies in Europe over the past 15 years. In particular, polycentricity has sustained as a policy concept due to the fact that it is a ‘bridging concept’ that holds a promise for the many actors involved in regional development. Obviously, the potentialities of polycentric metropolitan areas to fulfil several common policy objectives relating to overarching objectives as competitiveness, sustainability and social equity is widely recognised. In this chapter, we provide an overview of the policy context, addressing the European policy context first. This is followed by an account of the concept of polycentric metropolitan areas in national and regional policy of European countries.

2.1 European policy context

2.1.1 European Spatial Development Perspective (1999)

The first EU policy document with a territorial perspective was the European Spatial Development Perspective (ESDP) from 1999. It takes on a very balanced view of spatial development: “The concept of polycentric development has to be pursued, to ensure regionally balanced development, because the EU is becoming fully integrated in the global economy. Pursuit of this concept will help to avoid further excessive economic and demographic concentration in the core area of the EU.” The fact that the EU basically has one economic core zone (the pentagon between London, Paris, Milan, Munich and Hamburg) is not considered in line with this ambition. Therefore, the creation of several of such macro-regional ‘zones of global economic integration’ plays a key role in improving the spatial balance within Europe.

On a smaller spatial scale, polycentric development must also occur within the various economic core zones. These can be networks of cities of different sizes and characteristics: cross-border and transnational regions, smaller city regions or functional relationships between cities and their rural hinterlands. The concept of economic complementarity is used here to underpin the need for balanced development: cities should build on each other’s (dis)advantages in order to be economically competitive. Outside the economic core zones, networks between towns and cities in more rural areas should make sure that viable markets and important (social) services are maintained.

The ESDP also proposes policy measures for dynamic and attractive cities. However, these are disconnected from the polycentric equal development debate. Instead they focus on more thematic issues: limiting physical expansion, promoting social inclusion and improving accessibility, sustainability and natural/cultural assets.

2.1.2 Recent EU policy documents on territorial cohesion

Since 1986, the objective of cohesion policy has been to strengthen economic and social cohesion. The Lisbon Treaty (2007) introduced a third dimension: territorial cohesion. Hence, territorial policy documents are now more firmly anchored into the general EU policies. The Green Paper on Territorial Cohesion (2008) and latest version of the Territorial Agenda (2011) focus more on the spatial scale of cities and city regions, including their relationships with the surrounding intermediate and rural areas. Both documents acknowledge the crucial position
of large cities as centres for economic activity, but stress that a more balanced territorial development is necessary.

Core of the Green Paper is the analysis that economic activities are disproportionately concentrated in urban regions when related to the scattered settlement pattern of the EU. Although the areas in which this activity is concentrated benefit from this, it also leads to diseconomies like pollution, crime, deprivation and congestion. While on the other hand the typical EU settlement pattern is seen as more resource-efficient than the urban sprawl that characterizes large cities. Therefore the Green Paper proposes the following policy measures:
- Large cities should focus on reducing the negative externalities of agglomeration and make sure all groups profit from their economic activities;
- Intermediate regions are under pressure to maintain their functions and services. They should develop interconnected networks in order to maintain or expand their functions;
- In rural areas there is a real process or threat of depopulation. Small towns are quite important service centres within these areas, and play a key role in maintaining the attractiveness of rural areas.

So, here, further integration within networks of cities, and hence linking the cities in polycentric metropolitan areas stronger together, is considered essential to maintain a good level of service provision. However, both policy documents do not connect urban and more rural policies in one overarching framework. Large cities should mainly focus on fixing internal problems (the dynamic, attractive cities within the ESDP and reducing negative externalities in the Green Paper), while towns in rural areas need to develop more interconnected networks to expand or maintain economic activities.

The Territorial Agenda stresses more the reciprocal relationship between cities, intermediate areas and rural hinterlands than the Green Paper and ESDP. Where possible, cities should look beyond their administrative borders and focus on their functional region. Cities and their hinterlands are interdependent, be it macro-regional, cross-border or at the regional level, which means that metropolitan regions should be aware that they have responsibility for the development of their wider surroundings. It is suggested that integrated management of potentials such as cultural heritage, city networks and labour markets can be better utilized to promote the economic competitiveness of the whole region. For more rural areas, territorial cooperation could focus more on making use of landscape and/or environmental potentials.


Europe 2020 represents the EU high end strategy. It outlines three main priorities: smart, sustainable and inclusive growth. Although the document does not specifically mention polycentric development, the principles of polycentric development as mentioned in the ESDP, Green Paper on Territorial Cohesion and Territorial Agenda do promote a more inclusive European territory. Every three years, the EU publishes a report on economic, social and territorial cohesion, detailing progress in these areas. The Fifth Report emphasises that new programmes with a particular focus on “the role of cities, functional geographies, specific geographical or demographic problems and macro-regional strategies” are necessary for reaching the goal of territorial cohesion: it mentions the possibilities to prepare operational programmes also at the level of groups of towns, and to reinforce local and regional partnerships. It also acknowledges that increased urban-rural linkages works positively for the access that people have to affordable and quality infrastructures and services.

2.2 National and regional policy context

Also national and regional governments are paying more and more attention towards the potentialities of polycentric metropolitan areas. This section discusses the increasing attention for polycentric metropolitan areas in the national and regional context. The European Spatial Planning Observation Network, ESPON, collected information on the use of the concept of polycentricity in plans and strategies at the national level throughout the 29 ESPON countries. At that time (2003), the word ‘polycentricity’ was not very frequently used in policy documents, but several other concepts denoted the same (e.g. balanced development etc.), therefore, spatial policies in a wider sense were taken into account. The results of this study indicated that 18 out of the 29 countries pursued a polycentric development in one way or another. The actual definition of polycentric policy differs from country to country. According to ESPON 1.1.1, the main objectives for which polycentric development is considered instrumental are to achieve cohesion in order to diminish disparities between urban areas, and to enhance urban competitiveness. In many cases, urban competitiveness is promoted by intermunicipal cooperation, or by administrative reform. The types of urban disparities addressed are different from country to country. For example, in countries such as Denmark, Estonia, France, Ireland and Latvia the focus is on the gap between the capital regions and the rest of the cities. In Germany, Italy, Norway and Poland there are North-South or East-West disparities, while countries such as Finland, Greece and Portugal focus on the need to strengthen the medium-sized cities in their urban hierarchies.

Clearly, traditional regional policies based on redistribution approaches have been replaced in many cases by polycentric development strategies based on ‘potential based approaches’ (Davoudi and Wishhardt, 2005)
or for instance ‘a search for winners approach’ (Antikainen and Vartiainen, 2005). All these strategies carry elements of cohesion as well as competitiveness in them. Within these approaches the focus has shifted from a zonal to a nodal approach, from lagging regions to the development of the cities or urban networks, as ‘motors of the economy’ within those regions (Waterhout et al., 2005).

If we narrow our focus down from polycentric development to polycentric metropolitan areas, we can also conclude that these features prominently and explicitly in strategic regional development strategies in many European countries, albeit that such regional clusters of cities are generally not referred to as polycentric metropolitan areas back in 2003. Rather, policy makers often referred to them as ‘urban networks’ or ‘city networks’. Use is made of the network metaphor to emphasise the alleged or desired complex and strong relationships between the cities and as such the coherence and unity of the region. Table 1, taken from Meijers (2007), lists several European countries in which polycentric metropolitan areas had been identified as an objective of strategic policy-making, also giving examples of networks and the policy label given to the polycentric metropolitan areas. This list if far from being exhaustive.

We have strong indications that the list of countries addressing polycentric metropolitan areas has been extended considerably over the last decade. This often concerns not just national policies, but also regional policies or joint metropolitan development strategies of the group of cities concerned. Yet, a thorough, systematic review of these strategies has not yet been carried out, although a special issue of Urban Research & Practice on polycentric development policies does so for Central Europe (Sykora et al., 2009).

We can conclude that polycentric metropolitan areas are an increasingly widespread, relatively new policy theme that has become a common feature of regional development strategies in many European countries over the last decade. Planning for polycentric metropolitan areas in many cases involves planning on a relatively new scale, based upon new starting points and taking on board new strategic objectives (Lambregts, 2000).

2.3 Challenges from the EU and national perspective

The territorial perspective is gaining importance from a EU and national perspective. Historically, the focus of EU policies was more on social and economic cohesion, but in 2007 territorial cohesion has joined. Hence, special policy documents like the Green Paper on Territorial Cohesion and the Territorial Agenda were produced. The territorial perspective is gaining importance from a EU and national perspective. Hence, special policy documents like the Green Paper on Territorial Cohesion and the Territorial Agenda were produced. The territorial perspective is gaining importance from a EU and national perspective. However, the focus of EU policies was more on social and economic cohesion, but in 2007 territorial cohesion has joined. Hence, special policy documents like the Green Paper on Territorial Cohesion and the Territorial Agenda were produced. The territorial perspective is gaining importance from a EU and national perspective. However, the focus of EU policies was more on social and economic cohesion, but in 2007 territorial cohesion has joined. Hence, special policy documents like the

<table>
<thead>
<tr>
<th>Country</th>
<th>Concept</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>‘urban network’</td>
<td>e.g. Flemish Diamond (Brussels-Antwerp-Ghent-Leuven)</td>
</tr>
<tr>
<td>Denmark</td>
<td>‘Regions of competence’,</td>
<td>Struer – Holstebro – Herning – Ikast;</td>
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<tr>
<td></td>
<td>‘polycentric “National</td>
<td>Middelfart – Kolding – Veje – Fredericia</td>
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<tr>
<td></td>
<td>centres’1’</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>‘urban network’</td>
<td>Ida-Viru county: Jõhvi – Kohtla-Järve – Narva</td>
</tr>
<tr>
<td>France</td>
<td>‘réseaux des villes’</td>
<td>e.g. Normandie Métropole (Caen-Le Havre-Rouen)</td>
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<tr>
<td></td>
<td>(urban networks)</td>
<td></td>
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<tr>
<td>Germany</td>
<td>‘European Metropolitan</td>
<td>e.g. RheinRuhr (Bonn-Cologne-Düsseldorf-Essen-Dortmund);</td>
</tr>
<tr>
<td></td>
<td>Region’1’, ‘Städtenetze’</td>
<td>Bergisches city triangle (Remscheid- Solingen-Wuppertal);</td>
</tr>
<tr>
<td></td>
<td>(urban networks)</td>
<td>Sachsendreieck (Dresden-Leipzig-Chemnitz/Zwickau)</td>
</tr>
<tr>
<td>Greece</td>
<td>‘twin poles’ or ‘bi-poles’</td>
<td>e.g. Larissa-Volos</td>
</tr>
<tr>
<td>Italy</td>
<td>‘city network’,</td>
<td>e.g. Veneto (Padua-Venice-Treviso)</td>
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<td></td>
<td>‘multicentric</td>
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<td></td>
<td>metropolitan system’</td>
<td></td>
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<tr>
<td>Ireland</td>
<td>‘linked gateways’</td>
<td>Letterkenny-Derry; Athlone-Tullamore-Mullingar</td>
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<tr>
<td>Lithuania</td>
<td>‘Metropolis Vilnius-</td>
<td>Vilnius-Kaunas</td>
</tr>
<tr>
<td></td>
<td>Kaunas’</td>
<td></td>
</tr>
<tr>
<td>The Netherlands</td>
<td>‘urban networks’</td>
<td>e.g. Randstad (Amsterdam-Rotterdam-The Hague-Utrecht); Brabantstad (Breda-Tilburg-Den Bosch-Eindhoven-Helmond)</td>
</tr>
<tr>
<td>Poland</td>
<td>‘Duopols’</td>
<td>Warsaw-Lodz; Torun- ’ bydgoszcz</td>
</tr>
<tr>
<td>Switzerland</td>
<td>‘vernetzte</td>
<td>Northern part of the country (among which Zürich-Basel-</td>
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<td></td>
<td>Städtesystem’,</td>
<td>Bern-Winterthur-Luzern)</td>
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<tr>
<td></td>
<td>‘polycentric system’</td>
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1 This concept is not specifically developed for polycentric metropolitan areas, but in its elaboration it also identifies such areas.

source: Meijers, 2007
3 Polycentric metropolitan areas: scientific state of the art

3.1 Introduction
Polycentric metropolitan areas pose fundamental challenges not just for policy-makers and administrators, but also for researchers. The rise of polycentric metropolitan areas as a policy concept is inextricably linked to the rising attention for such metropolitan areas in the scientific literature. We will start our overview of the state of the art in the scientific debate with a brief summary of several key applied research projects that were funded by ESPON as well as groupings of cities such as METREX and Eurocities. Second, in section 3.3, we present the main findings on polycentric metropolitan areas as they can be found in the scientific literature. We finish with a synthesis of the main challenges for research in the next years.

3.2 Applied European research projects on Polycentric Development
More and more policy attention for polycentric development across Europe, resulted in several projects on this theme. This section discusses several projects initiated by different (European) organisations.

3.2.1 ESPON
The European Spatial Planning Observation Network, ESPON, initiated different projects as targeted analyses (next to more fundamental research projects – ‘applied projects’ in ESPON terms, the results of which will be discussed in the next section). These analyses represent a new type of projects supporting the use of existing results in partnership with different groups of stakeholders. ESPON put emphasis on “the operation- al use of results of the analyses in practice”.

POLYCE is one of ESPON’s targeted analyses on ‘metropolisation’ and polycentric development. The project focuses on the Danube Region in Central Europe. The network consists of five cities: Vienna, Prague, Budapest, Bratislava and Ljubljana. These five cities wish to strengthen their position as network of metropolises within the European and global territory. The aim of the project is to select opportunities for sustainable urban development at macro-regional and city level. Therefore the project carried out a territorial analysis at both levels. It was found, amongst others, that a lack of polycentric structures in the metropolitan regions of Budapest, Prague, and Vienna came coupled with findings on urban sprawl as a risk and potential cost factor (ESPON POLYCE, 2012). It was also found that integration between these five cities was rather absent, which can be attributed to the quite long distances between them. While the five metropolitan areas exhibit features of polycentricity, this does not hold for the network of metropolitan areas.

Another project of ESPON is METROBORDER. This project focused on cross-border polycentric metropolitan regions. Triggered by the liberalisation of the European borders, new dynamics are emerging between cross-border cities. The project found that cross-border polycentric metropolitan regions are an important emerging phenomenon of European spatial organisation having large development potentials. These potentials lie in combining the characteristics on either sides of the
border in a complementary way. This refers to differences in retail markets, in economic specialisations, in cultural offer and landscape differentiation. Also, it is about organizing critical mass. Such complementarities are considered to lead to more differentiation than can occur on domestic metropolises – which would provide cross border polycentric metropolitan areas with a unique selling point. Yet, functional integration remained limited, and this should be considered a huge unused potential. Yet, the exploitation of these complementarities depends largely on the will and the strategies of the actors to cooperate within a complex multi-level context that is characterized by an asymmetric organisation of competences on different political and administrative levels on either side of the border (ESPON METROBORDER, 2010).

3.2.2 Eurocities
Eurocities, a network organisation of European cities, also pays attention to the (polycentric) development of metropolitan areas. Eurocities’ Working Group Metropolitan Areas produced a paper on ‘Cities co-operating beyond their boundaries: evidence through experience in European cities’ (Eurocities, 2012). The paper shortly discusses the process of urban sprawl and argues that it is unrealistic to talk about a dualistic relationship between cities and rural. Instead, mixed urban/rural areas have now emerged, which make it difficult to define what is urban and what is not. According to Eurocities, it is important to consider that due to these processes, the rise of functional urban areas is a reality rather than a theoretical concept. Functional urban areas include towns and villages that may be physically separated, but at the same time are economically and socially highly dependent on an urban core.

According to the paper, the pooling together of resources from local authorities is needed. Some decisions (economic clustering, stimulating R&D) should be taken on a metropolitan level. Metropolitan coordination can help to avoid the negative effects of inter-municipal competition, can help to iron out mismatches in the local tax system and may deliver more efficient services to citizens.

The paper strongly focuses on the governance perspective of metropolitan development. There is a call for more support at the national and EU-level to stimulate bottom-up initiatives from metropolitan areas. The underlying goal of the working group is to influence decision making at the EU level. This can be done in three ways: (1) to influence policy initiatives that reinforce the role of metropolitan areas, (2) to include metropolitan areas in EU funding programmes, and (3) to encourage metropolitan cooperation through pilot initiatives supported by the European Commission.

This research reveals that changing the institutional governmental structure is a cumbersome process. Therefore, new governance arrangements are preferred over new layers of government. In this way, existing governmental bodies such as provinces or regions are most likely to support the idea of metropolitan cooperation. Because of differing contexts, tailor-made solutions are the best. Hence, imposed governance arrangements from national or EU institutes will not work: it should be up to local authorities to define the most relevant solution for their metropolitan area. The report advised that core cities should be the driving force behind metropolitan cooperation. Continuity, stakeholder involvement and trust are very important elements within this process.

3.2.3 METREX
The paper ‘Intra-metropolitan polycentricity in practice: reflections, challenges and conclusions’, was produced by the METREX expert group (2010). The central objective is 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 polycentricity. The expert group consisted of urban and regional planners from twelve metropolitan areas in Europe. The intra-metropolitan perspective means that polycentrism on a spatial scale is limited to something between the city-regional scale and mega-regional level. Both ‘incorporation mode’ and ‘fusion mode’ polycentric metropolitan areas were selected. Some metropolitan areas are mixtures of both modes.

The concept of polycentrism within this study is applied in a normative way, i.e. the goal is to apply polycentrism as a tool for intra-metropolitan planning. Pursuing polycentrism is regarded by the expert group as an overarching tool to combat excessive urban sprawl and climate change; and help promote economic competitiveness and target-oriented labour divisions.

Given the fact that polycentrism is regarded as a tool, the expert group puts forward two central messages:

- There are a number of preconditions for the application of polycentricty. First of all, stakeholders need to realize that it is a long term effort. There is a clear need to understand market mechanisms and their territorial impact better. Furthermore a better understanding of the different concepts is needed and stakeholders’ mental maps need to be enlarged.
- Second, the capacity of the governance system matters. There is a clear need for clear strategies and solid instruments to manage different interests, agendas and/or territorial logics.

Yet, it was observed that discussions on which governance tool and form of polycentrism is most fitting will always remain undecided. It is interesting to note that with respect to urban sprawl and climate change the experts can give good arguments as to why polycentrism is a useful tool to combat them; but when it comes to economic competitiveness and functional labour divisions they cannot. It turned out to be rather difficult for the experts to grasp relations between centres or to identify promising complementarities/synergies.

3.3 State of the art in research on polycentric metropolitan areas

In general terms, research on polycentric metropolitan areas has taken off only in the last one and half decade, when this spatial phenomenon started to become more clearly visible. Until then, the strong focus on large cities (e.g. Sassen’s Global Cities) dominated the urban research agenda. There is perhaps one exception of a polycentric metropolitan area that has been explored more
Polycentric Metropolitan Areas in Europe

3.3.1 Spatial form

Obviously, an analysis of spatial form is crucial since the defining characteristic of polycentric metropolitan areas appears to be its form: polycentric, and, according to some definitions, also functionally tied together. Recall that we defined polycentric metropolitan areas as ‘collections of historically distinct and both administratively and politically independent cities located in close proximity and well connected through infrastructure’. This is perhaps the least restrictive definition one can use (see Champion, 2001), as it does not refer to a certain minimum extent of spatial interaction between these centres, or an even more restrictive condition such as a minimum level of specialisation among centres (see for instance Parr, 2004).

As regards spatial form, the most considerable difference of opinion in the debate rests on the question of whether polycentricity refers just to morphological aspects of the urban system or whether it should also incorporate relational aspects between the centres making up the urban system in question (Green, 2007; Meijers, 2008a). The morphological dimension, referred to as morphological polycentricity, basically addresses the size and territorial distribution of the urban centres across the territory, and equates more balanced distributions with polycentricity (see e.g. Kloosterman and Lambregts, 2001; Parr, 2004; Meijers and Burger, 2010). The relational dimension, referred to as functional polycentricity, takes the functional connections between the settlements into account, and considers a balanced, multi-directional set of relations to be more polycentric (ESPON 1.1.1, 2004; Green, 2007; De Goei et al., 2010). Proponents of the functional polycentricity approach generally claim that nodes without balanced relations would not form a polycentric system (ESPON 1.1.1, 2004). There is also a third approach, which is also about functional or relational polycentricity, and which considers the strength of the interactions between cities (Green, 2007).

There is much to say for such a functional perspective on polycentricity, since the strength and orientation of linkages between centres or cities could well be a major explanation of the performance of the urban system as a whole (Burger and Meijers, 2012).

As these conceptual debates start to crystallize out, much recent effort has been put in measuring the level of polycentricity of metropolitan areas, and the way to do so depends on whether one adheres to a morphological, functional or a combined approach (Burger and Meijers 2012). According to Hoyler et al. (2008: 1058), combining morphological characteristics and functional relations in one approach ‘contributes to a conflation of two analytically distinct dimensions of polycentricity’. Naturally, a balance in the size distribution of centres does not necessarily imply that there are functional linkages between the different centres, let alone an equal distribution of these linkages and the existence of multi-directional flow patterns. Some morphologically polycentric metropolitan areas do have strong and multi-directional patterns of interaction between the centres, some do not (see e.g. Hall and Pain, 2006; Burger and Meijers, 2012). A metropolitan area that is morphologically polycentric is not necessarily polycentric from a functional point of view.

Finally, there is also the issue of scale: the extent to which regions are polycentric depends largely on the scale at which the networks are studied (Taylor et al., 2008).

3.3.2 Metropolitan governance

Metropolitan governance is a general challenge for urban professionals all across the globe. Kearns and Paddison (2000) highlight why cities today are no longer able, or not as able as they thought they were previously, to direct urban development in a ‘command and control’-way. The main reason is globalisation, which brings along mobile capital investments, the emergence of worldwide economic sectors and international institutions. In Europe, the influence of the European Union also leads to a redefinition of the role of the national government, which has in turn its impact on metropolitan governance as well. For urban governments, globalisation and internationalisation ‘has meant a loss of control over urban economies, and new activities and responses’ (Kearns and Paddison, 2000: 845). It also implies a more entrepreneurial attitude of urban government, since competition is increasingly between metropolitan areas rather than between countries. In such a competition, cities have started to develop and strengthen their profile to attract mobile investment, tourists and in particular also a highly qualified labour force.

In addition, there is a quite common trend in Europe that lower levels of government are being strengthened, largely due to processes of decentralisation of functions from central government to local and regional levels of government. An even more recent trend is that it is now more accepted that within a nation-state, similar territories may be governed differently: there is increasing diversity, variation and even asymmetry (Stead and Cotella, 2011). More than before, urban governments are permitted to follow their own path.

Then there is increased complexity in decision-making and policy development – there are many interacting authority structures at...
work in the emergent global political economy. Different levels of governance, as well as socio-
cultural society, get increasingly entangled, requir-
ing us to think of urban government as multi-
level governance. ‘Multi-level’ does not just refer
to different hierarchical layers of govern-
ment, but also to horizontal layers of govern-
ment: e.g. between municipalities or regions.

Multi-level governance is of great impor-
tance in particular also for polycentric met-
ropolitan areas. In particular because glo-
balisation articulates itself at the regional,
scale in more complex patterns of interac-
tions, and a new division of labour, which
makes that many issues cannot be dealt
with by local jurisdictions. We need to real-
ize that institutional fragmentation is a fact
of life in all polycentric metropolitan areas.

3.3.3 Functional geography
Functional linkages can be used to study the
functioning of the metropolitan area itself,
but also to delineate a metropolitan area. As
regards the functional geography of polycen-
tric metropolitan areas, two key questions have
emerged in the literature: a. to what extent is
division of labour developing be-
tween the centres making up the polycentric
metropolitan area?, and b. how can we identi-
fy polycentric metropolitan areas? The lat-
ter question is obviously closely linked to
definitional issues, see paragraph 3.3.1.

It may be safely assumed that cities glob-
ally, as well as regionally, are becoming
more linked to each other, and the question
is whether in this process of integration
there is also a process in which the roles
and functions of cities are changing.
Thierstein et al. (2008) show that in the
emerging polycentric metropolitan area in
Northern Switzerland, advanced urban func-
tions increasingly concentrate in the central
cities of a mega-city region, while associated
functions disperse. It may well be that the
process of globalisation and its tendency to
particularly benefit (as well as create) well-
connected places, turns some places in
polycentric metropolitan areas into winners
while others stay relatively behind. Hard
empirical evidence addressing the complex
interrelation between regional assets and
intra-regional dynamics on the one hand
and the impact of global circulations and
extra-local dynamics on the other is how-
ever not yet available.

One approach to identify whether a division
of labour is developing is to measure com-
plementarities between the cities making up
a polycentric metropolitan area. Complementarity refers to the idea that
different cities fulfil different and mutually
While specialisations of cities tend to be
measured by location quotients, this method
does not account for the specialisation of
cities relative to the specialisations of a set
of other cities. For this reason, correspond-
ence analysis techniques have been em-
ployed recently to measure complementarity
in the context of polycentric metropolitan
areas, and these enable the calculation and
plotting of the division of labour between
the cities making up the mega-city region.
Using this method, it has been shown that a
strong division of labour exists between the
cities making up the Randstad Holland
(Meijers, 2007). As far as service sector
activities are concerned, its cities are twice
as specialized in comparison to each other
than the cities in the German Rhein-Ruhr
Area. In addition, regarding sectoral spe-
cialisations, some found that the extent to
which cities complement one another tends
to decrease (Meijers, 2007; Cowell, 2010),
while others report a trend towards more
differentiation (Franz and Hornych, 2010).
This is not, however, the whole picture.
Correspondence analysis techniques have
been applied to general sectoral classifica-
tions of employment, whereas it has been
suggested that nowadays cities specialize by
function rather than by sector (Duranton
and Puga, 2005) – in other words, by ‘what
people do’ rather than ‘where they work’.

Functional specialisations can be proxied
with occupational data (Barbour and
Markusen, 2007), and in a pilot project for
U.S. polycentric mega-regions, it was found
that these functional specialisations of dif-
ferent parts of cities were increasing in
some regions, but decreasing in others
(Meijers, Ross and Woo, 2011).

The second issue addresses the question
how polycentric metropolitan areas can be
identified. Existing approaches to identify
functionally coherent urban areas have
severe shortcomings, certainly when applied
to the scale of polycentric metropolitan ar-
eas. For example, their preoccupation with
‘daily urban systems’, whereas ‘weekly’ or
‘monthly urban systems’ appears more appro-
priate for polycentric metropolitan areas,
requiring a move beyond indicators such as
commuting towards a wider variety of flows
(e.g. trade, capital, goods, people, knowl-
edge) (Dieleman and Faludi, 1998). Another
shortcoming is that the multiplicity of net-
works is not taken into account – a region
can appear to be spatially integrated based
on the analysis of one type of flows but
loosely connected based on another (Burger,
2011). A third shortcoming is the preoccu-
pation with the quantity of flows, rather
than their ‘quality’ or value for the region.
More interaction between the cities is not
necessarily better, certainly if one takes en-
vironmental considerations into account.
Finally, the focus on gathering flow data is
understandable, and perhaps preferable, but
such data is hardly available, certainly not
in a harmonized and consistent form across
Europe (IGEAT et al., 2006; Limtakanool et
al., 2007).

Analysing the functional geography of
polycentric metropolitan areas clearly re-
quires researchers to develop new theories
and concepts and innovative methods
to analyse this, since existing approaches still
depart from the outdated model of mono-
centricity.

3.3.4 Identity and representation
There is also a cultural dimension to
polycentric metropolitan areas that needs to
be taken into account. This cultural dimen-
sion refers to the polycentric metropolitan
area as being a frame of reference, orienta-
tion, and interpretation that structures the
consciousness and behaviour of a regional
society and is reproduced and reconstructed
by the acts of the regional population. The
socio-cultural dimension addresses the issue
of popular identification, attachment and
institutionalisation of polycentric metropoli-
tan areas. The relevance of studying the
socio-cultural dimension of mega-city re-
gions lies in the fact that enhanced popular
identification with the polycentric metropoli-
tan area may express itself in activity pat-
tterns and travel behaviour that has a more
regional scope (Paasi, 2009), and as this
may foster further identification with, and
institutionalisation of polycentric metropoli-
It is likely that a strong institutionalisation of a metropolitan area comes coupled with some attachment to that area. Here, it is important to disentangle an affective (or emotional) bond with places from a more cognitive bond with places (the identification of the self being a member of a physical space) (see Paasi, 2003). This distinction between attachment and identification is relevant, as feeling part of polycentric metropolitan areas does not have to go hand-in-hand with having a positive attachment to it. However, research that takes into account combinations of attachment and identification across scales is thin on the ground (Lewicka, 2011). Also the relation that attachment and identity have with activity-and travel patterns is far from settled (Keating, 2001; Paasi, 2003; Gustafson, 2009; Lewicka, 2011).

### 3.3.5 Performance

In circles of urban planners, particularly also at the European scale, the concept of polycentricity, and more precisely polycentric development, tends to get a positive review as it is considered to bring along many advantages. Throughout the last century, a major rationale for actually pursuing metropolitan planning has been the belief that particular models of spatial organisation of metropolitan areas are able to mitigate and limit the persistence of typical urban problems. Polycentric spatial settlement patterns are assumed to be a remedy to either sprawl related problems or the typical big city problems. The first includes the lack of support for amenities, including transit or the consumption of open, green areas, while the latter refer to, amongst others, congestion, lack of housing affordability and concentration of pollution.

Perhaps polycentric spatial forms do provide a remedy towards these problems, but the truth is that this is little more than an educated guess. Tremendous efforts have been undertaken to describe urban form or envision possible future forms and urbanisation options. However, with some notable exceptions in the field of transportation studies (e.g. Cervero and Wu, 1998; Schwanet al., 2004) and economic performance (Cervero, 2001; Lee and Gordon, 2007; Meijers and Burger, 2010), hardly any systemic evidence has been gathered on the economic and environmental consequences of different urban forms, let alone its impact on social urban problems (Bailey and Turok, 2001; Banerjee, 2009). This is particularly true for ‘fusion-type’ polycentric metropolitan areas (Lambooy, 1998; Kloosterman and Musterd, 2001; Parr, 2004; Turok and Bailey, 2004; Cheshire, 2006; Parr, 2008; Meijers, 2008b).

However, more recently, as the conceptual debate advanced, polycentricity was made measurable, and some linkages with performance can now be drawn. Departing from a measure that combines morphological and functional characteristics of polycentricity, Veneri (2010) found that polycentricity in Italian metropolitan areas is a more environmentally sustainable urban form: it is associated with a reduction in CO2 emissions due to commuting, and polycentricity does not imply longer travel times. In fact, polycentricity was associated with closer proximity between residence and workplace.

How ever, polycentricity, in particular when not accompanied with a tangential but radial transport and infrastructure system may at the same time mean that labour markets may become fragmented, certainly for low-earning workers (Halbert, 2004). On the European scale, it was already shown that the often mentioned link in policy documents between a polycentric urban system and cohesion, measured in terms of the presence of regional disparities, does not exist (Meijers and Sandberg, 2008). This finding was recently confirmed in a study by Veneri and Burgalassi (2012), now at the scale of Italian regions. Evidence points even at the opposite: the higher the degree of polycentricity, the more unequal income distribution appears to be.

The study by Veneri and Burgalassi (2012) also explored links between polycentricity and economic competitiveness. Some evidence was found that a dominant prime city (monocentricity) increases agglomeration benefits. Meta-analysis research has shown that a city double the size of another one, is on average 5.8% more productive (Melo et al 2009) Importantly, it was found also that a high degree of functional polycentricity seems to be associated with a higher level of labour productivity. This would suggest that networks substitute for proximity (cf. Johansson and Quigley, 2004). Earlier, Meijers and Burger (2010), analysing U.S. metropolitan areas, found already that agglomeration benefits are less present the more (morphologically) polycentric a metropolitan area was.

At the same time, however, it was found that agglomeration costs were also less, as the balance between agglomeration benefits and agglomeration costs was better in more polycentric metropolitan areas, leading to higher labour productivity. The lack of agglomeration benefits manifests itself in the lower presence of higher-order urban func-
Polycentric metropolitan areas, and getting a better understanding of the institutionalisation of such regions and how people identify with these. Such a progress can only be made when the many theories, concepts and models that were once developed with the outdated monocentric city in mind, are reframed and linked to the new spatial reality of polycentric metropolitan areas.

### 3.4 Challenges identified by researchers

This paragraph briefly discusses the research challenges identified by academics. These challenges are distilled out of academic literature and applied scientific research. In addition, EMI organized a panel discussion with eminent researchers in this field during the Regional Studies Association (RSA) Conference. First, a brief overview of the panel discussion is given followed by the research challenges as they are identified in several key research projects on polycentric metropolitan areas.

#### 3.4.1 Panel discussion RSA Conference

In May 2012 the Regional Studies Association organised its annual European Conference in Delft, The Netherlands titled ‘Networked regions and cities in times of fragmentation: Developing smart, sustainable and inclusive places’. EMI took the opportunity to organize a panel discussion on the topic of polycentric metropolitan areas. Five eminent experts took place in the panel that was moderated by Professor Hugo Priemus of Delft University of Technology.\(^1\)

The panel was asked to give a reaction on several statements and to identify research gaps that require more academic research.

The panel discussed the tendency towards urban hierarchies with prime cities that are characterized by a concentration of activities and functions, leaving less for the secondary cities in the region. Due to these urban hierarchies some cities will lose out while other cities will gain. The appearance of urban hierarchies in polycentric metropolitan reasons, with prime cities having the most positive business climate, might explain why some cities gain in the process of metropolisation while other cities lose. If you manage to develop a seamless web within the polycentric metropolitan area you have a competitive advantage in comparison with other areas. Further academic research should focus on the underlying factors explaining the factors that cause urban hierarchies within, and between, polycentric networks of cities.

Another point of discussion concerned the question whether it is possible to organize the same benefits of a large metropolis in a network of small- and medium-sized cities. The panel argued that this depends on the ability of these cities to ‘borrow size’ from each other. To a certain extent, people and firms already make use of the polycentric region, but often politicians are still strongly oriented on local (municipal) affairs. A sense of urgency is needed for them to start cooperating with their neighbouring cities, but the majority of the cities do not (yet) see the advantages. It is not so much about rivalry between cities, but more about ignorance. Consequently, more research is needed about how a network of small- and medium sized cities can borrow size from each other, and what the advantages are of this. New methodologies should be developed to analyze the benefits of stronger integration within the polycentric metropolitan area. Urban practitioners and politicians will never be convinced of the advantages of cooperation if researchers cannot visualize the externalities.

Furthermore, according to the panel more academic research is needed to actually understand the dynamics within polycentric metropolitan areas. Researchers should analyze the multi-scalarity of polycentrism in more detail; the advantages at a smaller scale may at the same time imply a negative impact on a larger regional scale. How to deal with this tension? Additionally, it is important to analyze the awareness perspective of polycentrism as there is a major...
gap between research and the agenda of politicians.

3.4.2 Future research needs according to researchers

The research agenda of Kloosterman and Musterd (2001) was already mentioned at the beginning of section 3.3 and will not be repeated. The POLYNET project ‘Sustainable management of European polycentric mega-regions’ ran from 2003 to 2006 and examined changes in functional connections and information flows (physical/transportation and virtual/ICT) between and within eight polycentric metropolitan areas in North West Europe (NWE). As suggestions for future research, it includes:

- A deeper need for understanding solutions to economic and social inequity across Europe;
- Need to extend knowledge on analyses of functional specialisation and spatial complementarities;
- The role of (investments in) transport and e-infrastructure in developing city regional economies;
- Polycentricity alone fails to provide a sustainable solution to territorial inequities (social and economic). Therefore, scepticism exists about planning for polycentricity.

As an offspring of this project, a special issue was published, edited by Halbert, Convery and Thierstein (Built Environment, 2006). The last paper of this special issue further details some of these general POLYNET recommendations for research. Next to functional and spatial complementarities, they call for a better understanding of the interrelationships between advanced business services and the wider economy.

Also, more research should focus on intra- and inter-regional functional linkages (Halbert et al., 2006). The latter idea is taken forward by Hoyler et al. (2008) in another special issue, who move beyond the immediate parameters of the POLYNET project when defining a research agenda.

- In the first place, they call for a further understanding of the relationship between the first city in a polycentric metropolitan area and the rest. It seems that there is a further concentration of high-end producer services in these cities, while low-added related activities disperse over the region. This may eventually threaten the first city as it becomes less diverse, even though the whole metropolitan area may become the scale at which diversity is organized.
- Second, they demand attention for issues of social cohesion and equity, for instance whether there is increased polarisation.
- Thirdly, they define several challenges related to new trends that may affect the internal relationships in polycentric metropolitan areas, such as rising energy prices, the option of multiple location households and the management of resources. In addition, they mention the need for new methods to study the scale of polycentric metropolitan areas and call for research beyond Europe on polycentric metropolitan areas.

A number of recent PhD theses has been published on the subject of polycentric metropolitan areas, in particular in the Netherlands, Germany and Italy. Most have been referred to yet. Some of these theses also include a research agenda. Burger (2011) argues that future analytical work should focus more on the causes and consequences of the spatial organisation of urban systems and mentions in particular mixed spatial structures, the dynamics of urban systems, the measurement of functional coherence within regions, and the relationship between the spatial organisation of urban systems and urban and regional performance.

Meijers (2007) calls for more detailed research into complementarities, in particular defining them in functional terms rather than in a sectoral way. Also, he stresses the need for more research into the spatial organisation of polycentric metropolitan areas, particularly whether this organisation tends towards the so-called network model. Finally, he lists the linkage between spatial structure and agglomeration benefits and costs as a crucial challenge for further research.

Finally, also the applied research projects on polycentric metropolitan areas have listed research ambitions.

The Eurocities Working Group Metropolitan Areas paper remarks that development of new knowledge, such as better understanding of the ‘metropolisation’ process in Europe, and exchange of experiences is needed. Future research on this theme is required. The role of functional metropolitan areas is becoming more important across most European Member States, as all levels of public administration are adapting to new circumstances and policy challenges and seeking to find better and more effective solutions. Next to exchanging experiences among cities, academic surveys and analysis should be funded in order to better understand current changes in the ‘metropolisation’ process in Europe, its components and impact on the way Europe faces global challenges.

The POLYCE project point at the enormous data limitations that hampers the study of polycentric metropolitan areas and the metropolisation process. In particular the availability of flow data is a concern, particularly also cross-border relational data and through time. This also means that there are still many research challenges ahead. A major challenge is the process of metropolisation. Second, the issue of relational polycentricity needs to be explored at a variety of spatial scales. They also call for an in-depth research on the role of medium-sized cities as carriers of polycentric development, which is deemed essential for territorial cohesion. Another issue is more methodological and concerns the development of more sophisticated methods to delimit metropolitan areas, based on morphological and relational aspects.

Also the ESPON Metroborder project stresses the lack of the right data to analyse polycentric metropolitan areas. It was in particular stressed that time-series data was needed in order to do more research into causal relationships.

Finally, the METREX project underlines the importance of more research into relations between cities. It was found to be rather difficult for experts to grasp relations between centres, and to identify the promising complementarities and synergies.
Polycentric metropolitan areas in Europe in practice: viewpoints of urban professionals

4.1 Introduction

In the fall of 2011, a questionnaire was sent out to urban professionals working in the 100 largest European metropolitan areas, addressing issues regarding the morphology of the urban system in their metropolitan area, the strength of functional integration, the level to which regional governance was existent and the cultural unity of the metropolitan area. Also, we asked them to indicate the knowledge questions that they consider essential for further academic research. This chapter presents an analysis of the results of this questionnaire.

4.2 Selection of cities, respondents and response

The questionnaire was sent to respondents identified in each of the 100 largest metropolitan areas in Europe. The selection is of these metropolitan areas is based on the work carried out in the ESPON 1.4.3 project on Urban Functions (IGEAT et al., 2007) in which a classification of Functional Urban Areas (FUAs) all across Europe (EU25 + Iceland, Norway, Switzerland, Lichtenstein) is presented. This classification reckons the polycentric character of many metropolitan areas in Europe. Basically, metropolitan areas were defined as functionally coherent entities. The report also discerns Morphological Urban Areas (MUAs), which are contiguous built-up areas and which resemble cities and adjoining suburban areas.

The largest FUA is London, the #100 is Strasbourg (607,000). The list of 100 largest FUAs is quite different from a list of 100 MUAs (cities). For instance cities such as Ghent or Eindhoven rank not among the 100 largest MUAs, but the FUAs of which they are part (‘the Flemish Diamond’ and ‘North Brabant/Brabantstad’ are high on the list of 100 FUAs (5th and 30th respectively). In order to acknowledge the fact that some FUAs are clearly polycentric, we approached all cities (in fact, the central cities of MUAs) with over 300,000 inhabitants that are located in the top 100 of largest FUAs in Europe. For instance, in the Randstad area in the Netherlands, we approached Amsterdam, Rotterdam, The Hague and Utrecht. In some cases, FUAs did not contain a MUA of at least 300,000 inhabitants, and in these cases we sent out the questionnaire simply to the largest MUA (for instance...
Nijmegen). In total, we approached 123 cities (MUAs) in 100 FUAs. The questionnaire was sent to urban professionals employed by local or metropolitan governments, and generally working in the field of strategic spatial, economic development or urban/regional planning. E-mail addresses were largely gathered through internet searches. In the end, we got entirely filled-in questionnaires from 47 MUAs, located in 43 different FUAs. Hence, the response rate is 43% (FUAs) or 38% (MUAs), depending on the perspective. The response was well balanced and no parts of Europe were over- or underrepresented.

4.3 Results

4.3.1 Related cities and degree of ‘relatedness’
In our questionnaire we asked the urban professional the open question of which cities in the wider metropolitan area are most related to the city they are working for/working in. Respondents could fill in up to 5 other cities. The vast majority was able to identify 5 cities (66%), 4 cities were identified by 8.5% of the respondents, 12.7% identified three other cities, 8.5% identified two other cities and just 4.3% identified only one other city. This underlines that there is a tendency towards metropolitan areas that are constituted by multiple cities. On average, the distance to these other cities was 28.2 kilometres, with a Standard Deviation of 22.3 km, which gives an idea of the average size or surface of European metropolitan areas (Figure 4). The maximum distance amounted to 129 km, the closest by city was just 2 km away. The average distance between cities in the same metropolitan area is depicted in Figure 5. This shows that some respondents have identified their really close neighbours, while many others think of the metropolitan area as a larger entity in which inter-city distances of around 50 km are common.

For each city that was identified, we asked about the extent to which the prime city (where the respondent was located) is related to that other city. We asked the respondents to score the extent to which their city and each individual other city in their wider metropolitan area are functionally integrated with respect to a. the labour market, b. the housing market, c. business-relations between firms, d. the use of leisure amenities (shopping, culture, sports) and e. the market for education and health care.

In such a way, we had 199 relations between pairs of cities evaluated by local urban professionals. We added distances between each pair of cities ‘as the crow flies’ to our database, since distance appears to be a key factor for integration to occur. A first finding from our questionnaire is that the ‘distance decay’ factor is different for these five ‘markets’, see Figure 6.

Figure 6 shows that a pair of cities within a metropolitan area tends to be more strongly integrated in terms of the labour market and spatial scope of business relations than in terms of the market for leisure activities and in particular for education and health care as well as the housing market. Common, however, is a strong decline of the level of integration over short distances. From rather strong integration with close-by cities, we see that the level of integration drops sharply towards a distance of about 30 km, and
then start to increase again. This may have to do with the fact that cities located more far away tend to be larger or more important than those located nearby, as we seldom see larger cities in the immediate surroundings of the main city in the metropolitan region (these close-by cities tend to be more satellite towns). Another explanation of the rise of the level of integration with cities at a 30-60 km distance could be that some urban professionals have considered only close-by satellite town types of cities, whereas others have considered sets of more distant and distinct cities. To control for this, we applied ordinal logistic regression in which we control for the ‘regional scope’ of the respondent by including the average distance to the cities they mentioned. In addition, we added dummy variables to control for the location of a metropolitan area in Europe (North, East, South, West). The results showed that to go 1 step down on the 1-5 scale of the level of integration, the distance decay on the housing market is 26 km, on the market for education and health facilities 30 km, on the labour market 35 km, and on the market for leisure activities 36 km. By far least spatially constraint is the market for relations between firms: 66 km. We can visualise these differences in distance decay as the radius of these markets around cities, see Figure 7.

Figure 8 Extent to which cities in metropolitan areas present themselves externally as coherent metropolitan areas (1 = no, not at all; 5 = yes, to a high degree).

4.3.2 External positioning of the metropolitan area
We asked our respondents whether the cities in their metropolitan area (which they mentioned) position themselves externally as a coherent metropolitan area. Scores were rather normally distributed, see Figure 5, and the number of respondents that stated that they certainly do position themselves externally as a coherent metropolitan area (scores 4 and 5) was similar as those who did not (both 31.9%). Most respondents opted for the average score of 3.

Box 1. Explanatory variables
Spatial fragmentation: ratio of the size of the largest morphological urban area relative to the functional urban area. Acts as an indirect proxy of the level of monocentricity (high values) and polycentricity (low values).

Institutional fragmentation: ratio of the size of the municipality in which the main city was located relative to the size of the functional urban area. A low value indicates that the metropolitan area is divided in many local jurisdictions. A high value indicates that a large share of the population lives in one of these jurisdictions.

Location in Europe: dummy variables indicating whether a metropolitan area is located in Northern, Eastern, Southern or Western Europe.

We sought for explanatory variables for this pattern, using ordinal regression techniques, and included the level of spatial fragmentation, the level of institutional fragmentation and the location in Europe. Box 1 explains their measurement. It turned out that location in Europe and institutional fragmentation do not affect the external positioning of metropolitan areas. There was weak evidence of spatial fragmentation (being more polycentric) leading to lower scores on the extent to which cities position themselves externally (Wald statistic 2.903; p = 0.088; linking option = probit).

4.3.3 Cultural identity: between rivalry and a sense of belonging together
We measured the feeling of belonging together on a five point scale ranging from 1 (a culture of strong rivalry between cities) to 5 (a strong sense of belonging together). None of the respondents reported a strong cultural rivalry – see Figure 9.

A first conclusion is that while really strong rivalry between cities does not seem to exist, rivalry can still be found in many metropolitan areas (26% scored ‘2’). A strong sense of belonging together was only reported for one metropolitan area (Bilbao). Most metropolitan areas can be positioned in between.

Again we explored whether spatial fragmentation, institutional fragmentation or location

Figure 9 Rivalry and belonging together in metropolitan areas (1 = strong rivalry; 5 = strong sense of belonging together).
in Europe (see Box 1) had an influence on the cultural identity. However, this was not the case. Spearman’s Rho correlation coefficient between cultural identity and external positioning is significant: 0.497** (N=47). In other words, it seems that a feeling of belonging together culturally is important to be able to market a metropolitan area externally. There are no significant correlations (Pearson) between cultural identity and spatial fragmentation, institutional fragmentation (see box 1) and average distance to other cities in the metropolitan area. In other words, the sense of feeling that one belongs together with other cities, and the absence of rivalry between them, is not related to distance, or to the morphology of the urban system, nor to the institutional division of the metropolitan area. This is perhaps remarkable, especially in more fragmented metropolitan areas.

### 4.3.4 Cooperation within the metropolitan area

Our respondents were asked to characterise the cooperation between the cities of their metropolitan area, and they were able to tick several pre-given options describing the cooperation, as well as add new options themselves. Figure 10 gives the results of this question.

The most common form of cooperation between cities within metropolitan areas is bilateral cooperation on a voluntary basis, while also the development of joint regional projects such as the joint development of regional business parks or a joint project on metropolitan transit is common in almost two-thirds of the European metropolitan areas. Cooperation also takes the form of joint regional spatial development strategies or joint spatial visions in about one-third of the metropolitan areas. Less often, cooperation takes the form of joint marketing strategies for tourism, business or education (28%) or in joint regional development agencies that control regional development funds (19%). Perhaps the most far-reaching form of cooperation is through an overarching regional authority that has formal powers for metropolitan development, and this is the case among 17% of the respondents. Only 6% stated that there is no cooperation at all.

Respondents were also given the option to include other types of cooperation in their metropolitan area. Generally, this was a particularisation of the cooperation, for instance the stage in which a type of cooperation was or the issues that these platforms for cooperation were addressing. As was the case with the other issues, we also explored whether the type of cooperation is dependent on spatial fragmentation, institutional fragmentation or location in Europe (see Box 1 for the definition of these variables). Now, we used binary logistic regression models including these three factors as independent variables explaining whether a particular type of cooperation existed. It was found that the options ‘no cooperation’, ‘joint regional projects’, ‘joint spatial strategy’ and ‘overarching regional authority with formal powers’ were not related to the shape of the urban system (spatial fragmentation), the shape of the institutional system (institutional fragmentation) nor to the part of Europe in which the metropolitan area was located. However, we found some evidence that bilateral cooperation on a voluntary basis was more common in less institutionally fragmented metropolitan areas (Sig.=0.077). The same holds for joint marketing strategies (Sig.=0.081). Joint regional development agencies were more established in less spatially fragmented areas (Sig.=0.078). Hence, it seems that metropolitan areas with a dominating urban core and in which a large part of the population lives within one and the same local jurisdiction can more easily develop such forms of cooperation.

### 4.3.5 Needs for future research

Our final question in the questionnaire was about the themes that should be addressed...
by academic researchers as these would help the urban professional to guide and improve future metropolitan development. Figure 11 gives the results of this question, indicating the quest for more academic research into the topic of polycentric metropolitan areas.

About 60% up to two-thirds of the European metropolitan areas demand more research into the theme of polycentric metropolitan areas. The respondents are particularly keen to get a better understanding of the functional dimension (the spatial organisation of the metropolitan area) and the governance dimension (including instruments for regional coordination). Particularly the question of metropolitan transit and infrastructure, which covers both functional and governance dimensions, is on the list for further research. Less interest is in the cultural aspects of polycentric metropolitan areas (only 19%), but as we will see below, the urban professionals that are interested in this question tend to be located in metropolitan areas that are characterised by a high level of spatial fragmentation (in practice, areas that are polycentric, i.e. have multiple urban clusters).

Those that suggest other themes for academic research list sustainability, the legal-institutional framework, urban-rural cooperation, regional spatial-economic dynamics, and instruments to make trade-offs (2x), for instance to coordinate future retail development. Different metropolitan areas, different needs?

Using binary logistic regression models, we considered whether responses to the need for research on any of these themes were influenced by the level of spatial fragmentation, institutional fragmentation or the location of a metropolitan area in Europe. It was found that the request for more research on a) the functional integration between the cities in a metropolitan area, b) successful regional governance, c) policy instruments for regional coordination and d) metropolitan transit and infrastructure was not influenced by any of these variables. In other words, these needs are universally felt across Europe. However, the request for research on the role and functions of individual cities within their metropolitan area was felt less strong in Eastern Europe than it...
Polycentric Metropolitan Areas in Europe

is in particularly Northern and Western Europe. The need for research into ‘local attachments versus regional identities’ turned out to be more strongly (or even only) felt in metropolitan regions that are spatially fragmented, or in other words polycentric in the sense that multiple urban clusters can be found in the metropolitan area.

4.4 Conclusion: challenges for urban practitioners

The questionnaire that was sent out to the major cities in the 100 largest metropolitan areas in Europe was well-responded to. It has provided a broad overview of a wide range of dimensions that are relevant to the development of polycentric metropolitan areas including a functional dimension, a cultural dimension and a regional governance/institutional dimension. The knowledge needs of the respondents indicated that polycentric development and integration between cities are important issues that should be explored and analysed more in-depth within the coming years. There is still a lot unknown about the actual dynamics behind metropolitan development and the way how policies could foster synergies between the cities of a polycentric metropolitan area. It has shown that even though polycentric metropolitan areas are becoming the general type of metropolitan areas in Europe (with varying degrees of morphological polycentricity and different paths of evolution), it is by no means true that functional, cultural or institutional/political contexts of these regions are similar. With some minor exceptions, however, these differences do not appear to be related to the location of metropolitan areas in different parts of Europe. This suggests some convergence at the European scale, and makes the development of a knowledge and research agenda for polycentric metropolitan areas clearly a pan-European affair. The different contexts also show that it is worthwhile to complement the broad overview generated through a general questionnaire with in-depth case studies.

5 Introduction to the case studies

5.1 Cases

Across Europe six case studies were conducted to gain better insights in the challenges these cities are facing, and to identify their knowledge needs with respect to the theme of polycentric metropolitan areas. The in-depth studies complement the more generic questionnaire amongst urban professionals. Case studies are written about the following six metropolitan areas:

1. Linköping-Norrköping in Sweden
2. Tri-City Region (Gdańsk, Gdynia, Sopot) in Poland
3. Mitteldeutschland (including Leipzig, Halle, Dresden) in Germany
4. Rotterdam-The Hague in the Netherlands
5. Porto in Portugal
6. Milan in Italy

During these on-site visits, EMI interviewed 10-20 key experts and metropolitan stakeholders located in these metropolitan areas. These key experts have different backgrounds varying from various government authorities (policy makers at local, metropolitan and regional level), research institutes and universities (academics in this research field) and (semi)-private organisations (amongst other chamber of commerce or regional investment agencies). See Annex 1 for a complete list of all interviewees.

5.2 Selection criteria

The six European metropolitan areas have been selected on the basis of two criteria. The first is geographic spread across Europe: Figure 12 illustrates the location of the different case studies across Europe. The second criterion was the incorporation of different types of polycentric metropolitan areas (fusion mode/incorporation mode). Milan and Porto are both ‘incorporation mode’ regions as the metropolitan area consists of one central city extending its sphere of influence over a larger territory. The other four case studies are ‘fusion mode’ regions since these regions consist of a constellation of multiple central cities that have started to become more interwoven, or have the potential to do so. It can be assumed that challenges and key questions differ to some extent between those different types of polycentric metropolitan areas.

5.3 Structure of the case studies

The case studies serve three objectives. First, they are meant to identify the main challenges that come coupled with the transition from monocentric to polycentric urban structures, and to explore which new perspectives on solving urban problems arise when these urban issues are regarded from a larger, regional perspective rather than a local perspective. Second, to learn what cities do to let the (theoretical) potentialities of a polycentric urban structure materialize. In practice, this means exploring the level to which the individual cities within these polycentric metropolitan areas have become integrated. Third, there is the obvious reason to identify the knowledge needs of cities with respect to the themes of polycentricity and integration.

When pursuing the three objectives above we focused on multiple dimensions of integration. These have also been discussed in chapter 3, but we re-introduce them here.
shortly. In the process of metropolisation three different dimensions of integration can be defined. First, there is the spatial-functional dimension which addresses the size and territorial distribution of the urban centres across the territory as well as the functional relations between them (within the field of labour market, housing market, amenities, services etc.). Regions that are highly functionally integrated often function as one daily urban system meaning that there are many crisscross relations of people and firms within the region. They are used to travel around between the cities that are part of the broader metropolitan region.

Second, the cultural dimension tackles the identification and attachment that people have with the wider metropolitan area. If such a regional identity is present, this can for example be translated into more support for governance arrangements at the metropolitan scale, or an overarching branding strategy of the area.

Third, there is the institutional dimension of integration. Many (spatial) issues these days call for an approach that is formulated and implemented at multiple scales and/or across administrative tiers. Obviously, governing a polycentric urban region is an intricate affair. Putting such multi-level governance into practice is a complex task, even if politicians and administrators agree on its usefulness. All chapters three of the case studies discuss the three dimensions of integration.

6 Linköping-Norrköping

6.1 Introduction to the region

Linköping and Norrköping lie in the heart of Sweden, some 200 kilometres southwest of Stockholm. Furthermore, Linköping is the capital of the county of Östergötland. It covers an area of about 10,000 km² and has approximately 430,000 inhabitants. The region consists of 13 municipalities, of which Linköping and Norrköping are the largest. Both cities have around 130,000 inhabitants. The regional level includes three different authorities: the County Administrative Board, which is the national government’s representative office in the region and also a supervisory authority; the County Council, which is responsible for health, medical care and starting in 2012 also public transport in the region; and the Regional Council (called Östsam), which is in charge of regional development issues, with political representation from the local authorities and the County Council.

Both cities and their immediate surroundings differ substantially. While Norrköping traditionally was the larger city and the industrial and cultural core of the region, the role of the city has declined in the post-industrial era as some manufacturing firms closed down, as well as several public services, such as the army. Nevertheless,
Norrköping and its surrounding towns are still home to important transport companies due to the presence of a large harbour, and manufacturing companies like Siemens (located nearby Finspång). Today, Norrköping is recovering from the crisis of the 1970-80’s. The opening of the Linköping University campus in the heart of the city brought new energy, and the many old industrial buildings along the river in the centre of the city now form an attractive atmosphere for new businesses in the field of – amongst others – media and visualisation.

Linköping traditionally was the smaller city, but has always been the regional capital. But with a local economy based on R&D, the University and the Saab airplane manufacturing division it has recently taken over the traditional dominant (economic) position from Norrköping. Linköping also profited from the decentralisation of public services out of Stockholm. Due to its recent growth, the city has a less ‘urban’ character than Norrköping, with the latter boasting a historic inner city.

Regional challenges and integration
The region and both cities share common problems. First, the region is well developed, but shows signs of lower growth numbers than the rest of Sweden, in particular the three larger metropolitan areas in Sweden, of which Stockholm, Göteborg and Malmo are the centres. Second, there is a shortage of skilled labour, which in the near future is expected to grow due to a growing number of retirements the coming years. Another problem is the substantial number of graduates (50-60%) that migrates to other metropolitan areas in Sweden because they are unable to find sufficient employment opportunities, or because they are attracted to a more ‘metropolitan’ climate that particularly Stockholm can offer. Similarly, headquarters of the larger firms tend also to move out of the region towards Stockholm. The region is unable to provide them with the right business climate, which requires the close presence of other decision-making institutions (private and public), easy access to highly educated professionals and the support of highly specialized business services.

However, the region does have an attraction on families with small children, and some of the professionals that migrated before to larger metropolitan areas in Sweden return in this stage of their life. This has much to do with the presence of natural assets and good value for money on the regional housing market, even though salaries are about 15% less than in Stockholm. The relatively short distance to Stockholm also allows an increasing number of people to commute between the region and Sweden’s capital, while for instance also people may go several times a year to Stockholm for shopping. For companies, strong pull factors of East Sweden are the lower costs for rent and salaries in East Sweden. Some have voiced the idea that eventually, and dependent on the construction of a connecting high-speed rail link, the region may become part of the wider metropolitan area of Stockholm. The decision-makers are well aware that this may mean that more employment may be lost to the capital if the region is not attractive enough, and are trying to be well-prepared for this stage, amongst others by joining forces between Linköping and Norrköping.

For now, both cities are located close to each other, without another large city nearby. Due to processes of scale enlargement, the two cities are functionally integrating (for example regarding the labour market), and the cities feel that cooperation increasingly is a necessity. They jointly developed a common (municipal) level spatial plan, which had not occurred in Sweden before. The common problems identified above highlight this. The fact that both cities are situated in the same county is beneficial for cooperation and is stimulated by the Regional Council Östsam. The Council until recently positioned itself as the fourth city region of Sweden, after Stockholm, Gothenburg and Malmö. But since the fourth position is not that distinctive, the region now refers to itself as ‘East Sweden’.
**Linköping-Norrköping as case study**

Until recently Linköping and Norrköping were cities with their backs towards each other, with fierce rivalry between them. The last 15 years a shift is going on, however. Despite their differences the two cities have started to cooperate, by sharing certain urban functions in order to achieve economies of scale (e.g. public salary administration, fire defence). It is interesting to see how cooperation occurs in two cities that are very different in character. Strategic development policies aimed at their integration have been in place for several years, so this allows to evaluate its results. Furthermore, albeit both cities may be relatively small from an international perspective, they are yet exemplary for the processes at play when relatively equally sized cities start to merge together. But very useful knowledge may be gathered there, that could be applied at a larger scale too. This is why Linköping-Norrköping has been selected as a case study for the research agenda on Polycentric Metropolitan Areas.

### 6.2 Strategies for regional cooperation and integration

A distinction can be made between institutions that are already in place, promoting regional cooperation and integration, and specific strategies/instruments that are deployed by these institutions. The regional level includes three different authorities: the County Administrative Board, which is the national government’s representative office in the region and also a supervisory authority; the County Council, which is responsible for health and medical care in the region; and the Regional Council, which is in charge of regional development issues, with political representation from the local authorities and the County Council.

The County Council is an old institution dating back to the 17th century and is the administrative body of the County of Östergötland. It has policy making powers in the field of health care and, since the start of 2012, public transport. Because the county encompasses a region which more or less overlaps the functionally integrated area of Linköping and Norrköping, this body helps in promoting regional integration. The Council’s health care strategy of specialisation of the hospitals in the region, aimed at achieving a more rational spread of health care, effectively forces people (patients) to adopt a more regional focus when they require treatment, since not each and every hospital provides the full array of medical care. Its decision making powers for regional transport help to promote commuting within the region as well.

The Regional Council Östsam itself acts as a platform in which all municipalities of Östergötland can coordinate their activities. The Regional Council was established in 2002 based on a new law – Law on coordination entities within the counties – which gave regional bodies possibilities to assume responsibility for regional development issues. In the Law on coordination entities within the counties it is supposed that municipalities and the County Council jointly establish a municipal association that by the government becomes appointed as coordination entity and as such assumes certain national tasks. The Östsam Regional Council started its operations on the 1st of January 2003, as an association of municipalities to which the government has transferred certain tasks and mandates. The Regional Council allows for cooperation between civil servants and local administrators from 13 municipalities and makes them aware of the fact that they are part of a larger region. It also coordinates external promotion of the region. In order to do so it has adopted the strategy to become the ‘fourth largest city region in Sweden’, with the objective to create a functional region with economic growth and competitiveness. They consider it important to achieve consensus between stakeholders in the process. The Regional Council is focusing on the following areas of activity: spatial development planning, culture & creativity and entrepreneurship & employability. Regarding the latter, Sweden has divided its territory into functionally integrated regional labour markets, based on statistics on commuting. Östergötland currently consists of two labour markets around Linköping and Norrköping. The Regional Council Östsam deploys instruments to promote further integration, and it is expected that both will merge in the near future. In order to address the shortage of skilled labour, the aim is to raise the general educational level in the region as well as the skills level within specific industries. In addition, efficient matching between skills supply, education and labour market demands is also a key issue. The ‘Growlink’ programme caters to this need.

Next to the activities deployed by these regional authorities, there are a number of private or semi-public strategies that have perhaps not been explicitly aiming for regional integration, but that turned out to be of great significance for actual integration. The single most important action that has linked both cities more strongly has been the opening of a campus by the Linköping University in the neighbouring city of Norrköping in the mid-1990s. This is done in such a way that the campus is home to some top research, making it a full-grown campus rather than a subsidiary. The campus is also complementary in location: it is located in the heart of Norrköping’s city centre. This also leads to further integration between the two cities. Students are increasingly required to take courses in the neighbouring city as well, and free shuttle buses provide for quick and convenient transport.

One can mention some very concrete examples of achieving advantages of scale, which is that both cities now share one fire brigade, municipal salary administration and have arrangements for people who want to switch kindergartens between the two cities.

Another interesting strategy by the private sector is the merging of the business clubs of the professional ice hockey team in Linköping and the professional soccer team in Norrköping, thereby avoiding strong regional competition for limited sponsor money and allowing for a platform for business men and women to meet both in summer and winter.

### 6.3 State of integration

**6.3.1 Spatial-functional integration**

The travel distance between Linköping and Norrköping, a distance of about 35-40 km, can be covered within half an hour, certainly by car, and shuttle trains run every 20 min-
Both cities and their surrounding labour markets have a 'natural complementarity' in their local economies. Linköping is oriented more towards R&D, government and other business functions, while Norrköping is strong in avant-garde cultural businesses, transport and industries. This natural specialisation is likely to stimulate economic development in both cities, as the cities together offer a more diverse business environment, and hence, are able to cater to the diverging locational needs that businesses have. Linköping and Norrköping are also complementary in their residential environments and cultural atmosphere. While Linköping has a more 'small-town' character, Norrköping has always been the cultural capital of the region with more urban atmosphere and amenities. It used to be the third largest city of Sweden a century ago. Today this is enhanced by the industrial heritage that Norrköping possesses. The surrounding smaller towns and villages offer an attractive environment in particular for families.

Yet, both cities have developed out-of-town shopping malls that are rather similar. There is no strong sign of the development of top-level urban functions that build on the critical mass of the entire region rather than individual cities. The airport discussion is a good example. Both cities have airports, with limited connections (to Helsinki and Copenhagen from Norrköping, and to Copenhagen and Amsterdam from Linköping), and it could be argued that it is more efficient to operate one airport. A recent study advised to merge the two organisations running the airports. However, the matter is so politically sensitive that there is no discussion about concentrating air travel on one of the two airports.

6.3.2 Cultural integration
Despite decreasing feelings of rivalry (that by now is becoming a sort of folklore), there is still a threat that these feelings will live up again if one city outperforms the other. This has been the case over the last decades, as Linköping was often more on the 'lucky' side, as for instance central government organisations were decentralized to the city (computing centres, military defence, new university), while in Norrköping manufacturing companies were closing down. This gave rise to same feelings of neglect in Norrköping, which had to reinvent itself in a way several times in the last decades.

Regarding the media, it is interesting to note that both cities have their own journals, which are in fact owned by the same company. But apparently, it is not considered important for inhabitants of Linköping to learn more about what is happening in Norrköping, and vice versa. Obviously, such information is easily spread through the internet, but only ends up with people already actively searching for this information.

While in the past few years the region positioned itself as ‘the fourth city-region in Sweden’, this was later considered to be not sufficiently appealing. There is now discussion about a new 'brand' that may unify the region and its inhabitants, and for instance 'East Sweden Business Region' has come up in this discussion.

6.3.3 Institutional integration
The region profits from the fact that it is part of the same old (17th century) administrative authority – the county, which means that there is regional organizing capacity and regional development powers at the scale of the polycentric metropolitan area. What is more, the regional authority actively promotes integration, which is not self-evident. At this moment, there is talk of an enlargement of the county (as part of a regional reform to limit the number of regional authorities), but this might imbalance the new region and the activities aimed at regional integration. In fact, opinions differ between Linköping and Norrköping in which way the region should be extended, Norrköping traditionally being more focused on the northern and eastern areas, whereas Linköping is more oriented towards the south and the west.

The regional development policy of the region appears to be adopted by all relevant stakeholders, meaning that the regional coordination has been effective. There appears to be a well-developed sense of belonging together and a shared understanding of the challenges of the region and the way forward.
6.4 SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>• Natural complementarity: equal size, both economically (different sectors) as for the housing market (L=more suburban, N=more dense and urban) and culturally (N offers more qualities and old abandoned factories). Complementarity limits competition and stimulates cooperation.</td>
<td>• Branding of the region (economically and as a place to live) is not yet developed. Less growth of jobs and innovation than on average in Sweden.</td>
</tr>
<tr>
<td>• The fact that the old administrative region of Östergötland county captures the functional region of the two cities rather well. This means that formal governmental powers have been in place since the 17th century, and hence promotes regional cooperation. What is more, this regional level of government actively strives after regional coordination and integration, and does not appear to be in conflict with the cities over competencies.</td>
<td>• Integration with Stockholm might harm the region, stimulated by the high speed rail link.</td>
</tr>
<tr>
<td>• There is a common strategy and shared understanding of challenges.</td>
<td>• Insufficient region-wide information making people unaware of the opportunities (for work, leisure, shopping) in the region.</td>
</tr>
<tr>
<td>• Good balance between agglomeration advantages and agglomeration disadvantages: both cities are not too small and not too big.</td>
<td>• mismatch labour market: need for skilled vocational trained people, but people are either too highly educated or too low.</td>
</tr>
<tr>
<td>• In regional cooperation there is a focus on functional elements, which create bonding and trust.</td>
<td>• Insufficient region-wide information making people unaware of the opportunities (for work, leisure, shopping) in the region.</td>
</tr>
<tr>
<td>• Surrounding villages are often already connected to the region (either Linköping of Norrköping) because of the large share of commuting.</td>
<td>• Linköping might become used to success and may forget to anticipate on future developments that are unfavourable for the city. Also, when one city is outperforming the other, it may not want to be associated with that city. If interests of both cities in co-operation become more imbalanced, the co-operation may come to an end.</td>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• Increasing functional integration and successful co-operation in the past allows to address the more politically sensitive issues on the table that require trade-offs between the cities.</td>
<td>• Linköping might become used to success and may forget to anticipate on future developments that are unfavourable for the city. Also, when one city is outperforming the other, it may not want to be associated with that city. If interests of both cities in co-operation become more imbalanced, the co-operation may come to an end.</td>
</tr>
<tr>
<td>• Enlarging of the mental maps of people: still, many people are not looking at the scale of the region when it comes to jobs.</td>
<td>• Mismatch labour market: need for skilled vocational trained people, but people are either too highly educated or too low.</td>
</tr>
<tr>
<td>• Critical mass of the region is not yet fully exploited: there is scope for organizing more specialized urban functions in the region.</td>
<td>• Insufficient region-wide information making people unaware of the opportunities (for work, leisure, shopping) in the region.</td>
</tr>
<tr>
<td>• The University promotes cooperation between Linköping and Norrköping and further integration is also in their interest.</td>
<td>• Enlargement of the county might bring imbalances to the new region.</td>
</tr>
<tr>
<td>• While the region is able to attract students from all over the country and increasingly also abroad, it is not able yet to provide them with sufficient (job) opportunities to stay after graduation. Only 50-60% of university the graduates remain in the region.</td>
<td>• Mismatch labour market: need for skilled vocational trained people, but people are either too highly educated or too low.</td>
</tr>
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6.5 Conclusions

Before talking about best practices and knowledge questions that derived from this case study, we highlight four main impressions. Despite differences in history, economy, residential qualities and urban amenities between the major cities Linköping and Norrköping, and some rivalry that comes with this, the cooperation between them works quite well. An important reason for this is that Linköping (the more academic, governmental and suburban city) and Norrköping (the more historical, industrial and cultural city) complement each other in a ‘natural’ way. Both naturally focus on developing their own strengths and this works out well: albeit there is cultural rivalry (that by now is becoming a sort of folklore), there is no strong competition. However, when the issues go beyond this natural complementarity and require coordination in spatial planning, there is no real cooperation. An example is the airport, which is such a sensitive issue that it is not on the political agenda at all, and the uncoordinated building of large scale shopping facilities at the opposing sides of both cities. A first step is being set with a joint municipal spatial plan.

Another reason why regional integration seems to work is the strong focus on functional elements. The focus on integrating the regional labour markets, through the coop-
eration within the Growlink initiative, has created stronger working relationships between civil servants within the various municipalities. The decision in the mid 1990’s to place a University campus in Norrköping has tightened the bonds between the two cities. The new campus stimulated the revival of the old industrial town that Norrköping was, putting the old disadvantaged feelings towards Linköping somewhat to the background. Other initiatives are the merging of the two cities’ fire brigades and the municipal salary administrations. It created trust between the two cities and support for cooperation among citizens, but has also created a problem: the low hanging fruit has been picked; now they need to think of more difficult issues to integrate (for example the airport). It could turn out that moving beyond what are clearly win-win situations and to address several locally win-lose situations that have benefits for the region at large may turn out difficult and may jeopardize regional co-operation and coordination.

For the long term future, both cities and the region as a whole are aware of the extra need of cooperation. It is widely acknowledged that the region in the long run cannot compete with the three major Swedish cities (Stockholm, Gothenburg and Malmö) if good cooperation does not position the region better, certainly when the region may gradually be incorporated in the wider Stockholm metropolitan area. A critical issue is that Östergötland does not offer the metropolitan qualities and quantitative, specialised labour market to match Sweden’s largest cities. The postal addresses and management functions of large (>250 employees) firms are already moving to Stockholm, but often back offices remain in the region and young families move back, some of them still working in Stockholm. This creates more interaction with the capital. If this process continues, the region needs to compete with other suburban cities near Stockholm (most notably Uppsala) but has the disadvantage of being located rather far away. The high-speed rail linkage with Stockholm can then become vital in this respect for both cities. By joining forces, Linköping and Norrköping can become the ‘best of the rest’ after Stockholm, despite the large distances.

In general, the strong role of the public sector has a positive influence on the functional integration of the region. The Swedish state has divided the territory into several labour markets, which form clearly defined platforms for cooperation. In the end it is up to the municipalities themselves to use this platform. In Östergötland this is done through the Growlink network. But the governmental influence in regional integration is also noticeable in the sphere of health care. The county of Östergötland has defined a strategy for the public regional hospitals and ‘first contact points’ based on complementarity, meaning that every hospital has its own specialisation. The county is also responsible for arranging the regional public transport, and together with local municipalities there is a heavy support for enlarging the modal split of public transport within the region. Furthermore, the extensive amount of financial support for businesses that are starting up appears to be working well.

Porto Metropolitan Area

7.1 Introduction to the region

Porto is the second largest metropolitan area of Portugal and located in its northern part. Although Lisbon is the capital with all governmental and financial institutions, the northern Portuguese region (ranging from Braga in the north to Aveiro in the south) is the economic powerhouse of the country. A large part of the Portuguese research capacity is based here and the region boasts some important industries like the production of shoes, furniture, textile, cork and of course port wine, as well as mechanical industry. The accession to the EU, and in particular the introduction of the euro, has contributed to the steady transformation of Portugal into a service economy. This does not necessarily appear to be to the benefit of the Porto region, since the area is home to many traditional industrial sectors that nowadays seem to be a bit overlooked. Yet, in this era of financial crises, it is clear that the industrial exports of the northern region are key to Portugal’s recovery from the crises. Historically Porto is more oriented to-
wards northern Europe, whereas the focus of Lisbon was more on the Portuguese colo-

ingenies.

The municipality of Porto in itself is not very large. For some decades it faced heavy sub-
urbanisation. In 1991, Porto counted over 300,000 inhabitants, but right now the num-
ber of inhabitants has dropped to around 238,000. The metropolitan area as a whole is nevertheless growing and counts a large share of relatively young, well educated people. In total it counts around 1.3 million people and consists of a multitude of mu-
nicipalities. Porto is a very polycentric region for quite some time already: from the industri-
alisation onwards Porto served as the ser-
vice hub amidst industrial ‘new towns’. Currently, the area directly around Porto is
strongly urbanized (including the towns of Matosinhos, Maia, Valongo, Vila Nova de
Gaia, Gondomar). In fact, the largest mu-
nicipality of the Porto metropolitan area is not Porto but Vila Nova de Gaia with more than 300,000 inhabitants. Growth around this urban
core lays an outer layer of smaller towns and more rural areas.

At the metropolitan scale there is the AMP
(Área Metropolitana do Porto), a platform for the sixteen mayors of the metropolitan area that allows for discussion about metropolitan policy issues. It does not have any formal powers. Portugal is divided into eighteen

districts, of which Porto District is one. These districts however lack formal powers except in the field of public security. The

state has also appointed a North Regional
Coordination and Development Commission (CCDRN), aimed at adding a regional focus

on national planning and development. However, this body has no official policy

making competencies, although they are

responsible for the management of Regional Operational Programmes. Rather, it acts as a regional think-tank, carrying out studies on a wide range of spatial development issues. At the local level Portugal counts over 300 municipalities. Their local tax base is limited. Direct fiscal transfers from the central state account for 85-90% of local revenues. The central state thus has a strong influence in local policy making, while a strong regional layer is absent.

**Regional challenges and integration**

The region of Porto needs to modernize its economy. The current industries mentioned above are focused on serial industrial pro-
duction, while there is a need to base the local economy more on knowledge, research and R&D. Moreover, the accession to the EU and the arrival of the euro have not had overly clear benefits for the northern part of Portugal. European funds have led to invest-
ments in infrastructure and the airport, but these have not intrinsically changed the na-
ture of the regional economy. Growth in the service economy is mainly thanks to the rise

of tourism. Moreover, the transition of Portugal to a democratic republic in 1974 led to the nationalisation of many institutions, causing many of them to be located in and around Lisbon. Porto used to have a strong
banking sector, but because of nationalisa-
tion policies these were relocated to Lisbon. This process of politically steered centralisa-
tion fuelled the distrust of many people from Porto towards Lisbon. But besides these po-
litically steered processes of centralisation, there is also an increasing market force that steers towards further clustering of services (e.g. financial institutions) at a higher spa-
tial scale. Not only Lisbon is a competitor for Porto, but Madrid and Barcelona are com-

petitors too. Despite these negative process-
es, strengthened by the current euro crisis,
there are positive aspects as well. As said,
the Porto metropolitan area is growing, and
has a large supply of young labour. With its
good entrepreneurial spirit it offers opportu-
nities for people with new and innovative ideas.

Another challenge is posed by the continuing
process of suburbanisation away from Porto’s
city centre. Both inhabitants and businesses
leave the inner city and relocate to the sur-
rounding municipalities. There are several
reasons for this. First, several decades ago

the harbour together with other industries
started to move out of Porto, more towards
the sea. This caused a serious decline in em-
ployment in the city centre. Second, Portugal
has a peculiar housing policy that leads to
rather low rents. In large municipalities as
Lisbon and Oporto, rents were “frozen” since
1948. In 1974, rent controls were extended
to the whole country. Later on (in 1981 and
1985, but also in 1990 and 2006), new legis-
lation softened these controls. Now, in the
case of new contracts, rents can be freely
established; there is the possibility of an an-
nual increase of rents, based on an indicator
published by Statistics Portugal; and there

![Figure 17 A modern landmark in Porto: the Casa da Musica](Image 524x272 to 921x537)

Source: © Osvaldo Gago
are specific measures directed to "old rents". Problematic is that the successive legislative changes did not have a significant impact on the "old rents sector". Low renting prices mean that house owners have no incentive to improve their housing stock, nor money to spend on maintenance, and hence the quality is downgrading. The result is that anyone able to pay for higher quality housing is moving out, and by now the inner city is inhabited mostly by vulnerable social groups, while there are also many abandoned buildings, particularly in the UNESCO-world heritage neighbourhood Ribeira. In many other places in the world, this district would probably be gentrified. A new proposal is now in discussion, aiming to develop the private rented market. And third, the surrounding municipalities have benefited from a local building tax, which sometimes accounted for 80% or more of the municipal revenues. Hence, the easy supply of suburban housing led to strong suburbanisation in the economically easy supply of suburban housing led to more of the municipal revenues. Hence, the tax, which sometimes accounted for 80% or more of the municipal revenues. Hence, the easy supply of suburban housing led to strong suburbanisation in the economically

Porto University is very much rooted in Porto and its health and cultural facilities (hospital São João, the Casa da Música and Serralves Foundation), together with the integrative function of the Porto Metro, make sure Porto remains the most central city within the region. But businesses and retail are moving more and more to large shopping malls in the suburbs. Each municipality is developing its own mall and increasingly they are competing. Due to the economic crisis, the malls are not faring well, because of their oversupply of retail space and the malls also being rather non-descript and lacking character and atmosphere. It would be most beneficial for the whole region if these matters were to be coordinated through shared policies on the housing and real estate markets and for instance a metropolitan development plan. However, the process of suburbanisation has a paradoxical impact on regional integration. On the one hand, as described above, the region lacks integration on the political and planning side. Local politicians don’t seem to be aware of the strength of a coherent metropolitan area. But on the other hand, suburbanisation has led to a metropolitan area with a relative similar cultural background (many people that originally come from Porto). Many people live and work throughout the region and to the outside world; inhabitants from the region refer to themselves as being from Porto. So from a functional and cultural perspective, the Porto metropolitan area already functions as a quite well integrated metropolitan area.

**Porto Metropolitan Area as case study**

This interesting paradox is an important reason to further study the integration of the Porto metropolitan area. This mismatch between local politics and local realities seems to lead to the conclusion that regional integration does not necessarily have to be followed by, or be preceded by political integration, even if the region’s problems clearly state the need for integrated regional governance. Porto seems to have it all: good road infrastructure and a growing airport, a downgraded but potentially highly attractive inner city, an integrated metropolitan labour market, a regional hinterland (the Douro region) that is distinctive as a brand, strong human capital, but yet it fails to reap the benefits due to its weak regional organizing capacity.

### 7.2 Strategies for regional cooperation and integration

This of course does not mean that there are no regional policies involved. Below we highlight some of the platforms and policies that are being or have been implemented to strengthen regional coherence and regional governance.

The Área Metropolitana do Porto (AMP) is the backbone of the metropolitan region and consists of sixteen municipalities. It acts as a platform on which various regional topics are discussed between the mayors. With its (limited) annual budget of 2 million euro (the municipalities contributing half of the amount per year) it performs studies for regional integration, such as a study for different management models for the Porto Airport, and the municipalities involved cooperate for EU funded projects. But since the platform does not have any formal responsibilities, it acts more as a political forum rather than a decisive administrative body. There are no clear criteria for municipalities to become a member of the AMP. There are some examples of cooperation and coordination in the field of metropolitan services. The Porto metro system became operational in 2002 and operates multiple metro lines throughout the metropolitan area. With these lines there is an increase visible in commuting between Porto and the suburbs, thus contributing to regional integration. When the opportunity arose to build the metro, there was a sense of unity within the AMP. Also the extension of the airport and development of a cruise terminal were supported by all municipalities in the metropolitan region. However, the main key to success within these three regionally supported projects was that the investments were not subjected to political debate. The airport and cruise terminal were only feasible at one location, and the Porto Metro was mainly financed by EU funds. Furthermore, all sixteen municipalities have decided to use the same companies for waste management and water supply.

As mentioned, the CCDRN is a long-standing effort to regionally coordinate spatial planning and development. It is the only initiative thus far that acts on a regional scale within these fields, but it is no independent regional authority but rather a local agency representing the central state. The Commission does however produce valuable studies that contain starting points for common regional policies and have a role in the management of the Regional Operational Programmes. Recently another body has been erected that is not so much a platform for cooperation, but could rather promotes regional integration. The Autoridade Metropolitana de Transportes Porto (AMTP) or
Metropolitan Authority of Transports Porto has the task to harmonize the public transport system of the Porto region. The following paragraph will detail on this a bit more.

7.3 State of integration

7.3.1 Spatial-functional integration

The current state of metropolitan integration is largely steered by the suburbanisation patterns that have developed. The movement of businesses and people out of Porto has led to a very integrated crisscross pattern of commuting patterns. Hence, people and businesses operate very ‘polycentric’ (undertaking activities at multiple places) and you can easily speak of one integrated labour market. However, this is supported foremost by car mobility. The role of public transport is not very significant: the Porto Metro is relatively recent and does not have a fully developed network, and the national train network mainly provides connections with towns located further away. Bus connections are fragmented: state-owned companies compete with private companies and often have a concession for individual lines instead of coherent areas. The result is that a multitude of operators operate within the region, often operating lines that overlap, with different tariff systems. The recently erected Metropolitan Authority of Transports (AMTP), an agency established by the central state, has the task to harmonize public transport in the Porto urban area. A first step is being set by harmonizing the tariff system for the whole region. This could help the region to integrate, but a more coherent public transport network is needed. An extension is however costly.

The metropolitan area as covered by the Área Metropolitana do Porto (AMP) does not function as one coherent urban area. The urban ring as defined on previous pages (surrounding municipalities that are part of the same built-up area as Porto) is very well integrated in terms of commuting patterns, but the outer ring of more rural municipalities has less strong ties with Porto. The need for regional coordination appears to be stronger with the ‘first urban ring’, where the high degree of functional integration has evolved more or less unplanned. The task is now to coordinate this process better: new services should complement each other and the municipalities should specialize in attracting certain businesses and services. Between the urban core and the more rural outer layer there is instead much less functional integration. The urban core is more focused on services and industries, while the rural layer around (Douro region) boasts attractive landscapes and traditional industries. The urban core can profit more from these rural characteristics by integrating both territories better, through better infrastructural connections or coherent (tourist) promotion. At the moment this is done for northern Portugal as a whole, but promotion at the metropolitan scale might be better for regional integration. For instance, visits to the Douro river valley could be promoted in combination with a trip to Porto.

From a larger regional perspective it is possible to enlarge the functional region by incorporating the cities of Braga and Guimarães in the north and Aveiro in the south. Taken together this is the economic powerhouse of Portugal in research and exports. The three universities from Braga (with a campus in Guimarães), Porto and Aveiro have started a collaboration in which they make use of each other’s strengths: Porto’s university is strong in engineering, architecture, telecommunications and health and life sciences, Aveiro’s university in aeronautics and telecommunications and Braga’s/Guimarães’ university in software. This cooperation of universities can be linked with the region’s (traditional) industries to make them more competitive. At an even higher scale, Porto envisions to be the centre of part of the northwestern part of the Iberian Peninsula, within the Galicia-North Euregio.

7.3.2 Cultural integration

Portugal is a country in which regional identities do not play a large role. This is reflected in the absence of regional layers of government, which are common in other Mediterranean countries like France, Spain and Italy. The Porto region is likewise not hampered by inter-municipal cultural rivalries. Due to suburbanisation and the crisscross patterns of businesses and commuters, there is a large cultural equality throughout the metropolitan area, strengthened by the fact that the region offsets itself mainly against Lisbon (a unifying force), and the central role of the strong and successful local soccer team FC Porto within the metropolitan area. To highlight this integration, inhabitants from the Porto metropolitan region mostly refer to themselves as being from Porto when introducing themselves to ‘outsiders’.

Figure 18 Ponte Dom Luís I

Source: © Mano Darbas
'Porto' is quite a strong brand name for a city that in reality is not very large. Porto has a strong image that is distinctive from other cities, with its distinctive inner city that is on the UNESCO World Heritage list and the Douro region around the corner. Tourist promotion, combined with a regional perspective from the Douro region, is considered to be very useful for the region. Tourists can revitalize the inner city and tourism is growing, thanks to the new airport and connections by Ryanair and other low cost carriers. Besides being a city of soccer and port wine, the city wants to promote itself as science city too. As said, this is now done for northern Portugal as a whole, but would fit the metropolitan area very well.

7.3.3 Institutional integration

The fact that political cooperation within the metropolitan area is not very well developed can largely be explained by two factors.

First, there is a strong individualistic culture. Cooperation is not something that people, and hence policy makers, have grown up with; also within municipalities there is a strong separation between the activities of each policy sector. There have been some experiments with public private partnerships (PPP), but to the public these left a negative taste. These projects (construction of highways and hospitals) were associated with higher prices that flowed into the pockets of the private operators.

Second, local political leaders often have national political ambitions. Politicians with national ambitions are nominated in Lisbon, and once elected often adapt themselves to the 'Lisbon way'. Without the presence of a strong 'mediating' regional layer, these dualistic attitudes (local vs. national) become even more pronounced. All in all, this does not benefit the development of co-operation in the region. Politicians are focused at their electorate either at the local level or the national level, and regional integration is not something that has a strong impact on people's everyday lives. It means that local politicians, although in words supporting regionally coordinated policies, in practice prioritize the daily problems within their own municipalities. These factors largely explain why unity for regional projects within the metropolitan area of Porto is only present when it doesn't affect a municipality in a negative way or when the nature of the project doesn't allow for geopolitics, as described in paragraph 2.

Role of the central state and municipalities

The constitution of 1975 defines three levels for the organisation of the government (central, regional and local), in which the districts are supposed to be replaced by regions. However, the regional level of administration was never enacted. Instead there is a regional agency representing the central state, in the north in the form of the CCDNR. A referendum that was held in the 1990s about the creation of a regional body with formal powers was voted against. Therefore, the Portuguese state in practice is shaped by the central state and the 300+ municipalities. These municipalities are relatively large from the European perspective. There have been some discussions about merging municipalities, but the general feeling among the population is that merging would lead to municipal services being located too far away.

The state's strong competences can directly limit possibilities for regionally coordinated policies. An example illustrates this best. The government in Lisbon has put forward a proposal to merge the two authorities that manage the Lisbon and Porto harbour separately. By locating the new office in Lisbon, the Porto harbour would be controlled from Lisbon. But the Porto harbour is an asset that is of regional importance for the Porto area, and the proposal would make it very hard to formulate a harbour development strategy that is beneficial for Porto and its surroundings. Many aspects that together define the competitiveness of the regions in Porto are a national competence, such as the tax system and education policies.

Future possibilities for metropolitan governance

It is generally perceived that the Área Metropolitana do Porto (AMP) should have more competences in order to better fulfil a central role within the Porto metropolitan area. At the moment, there is a national debate, fuelled by the "rescue agreement" with EC-ECB-IMF, on the organisation of local authorities. The AMP commissioned a study involving the University of Porto and a university in Madrid to contribute to this debate, and it suggests transferring responsibilities in the field of education, economic development and tourism from the central government to the level of the AMP.

All in all, this would entail both that the state and municipalities would transfer some responsibilities to the metropolitan level. Within two years there are local elections, and a new national law states that mayors are not to be appointed for longer than three terms. As a result, many mayors need to leave and a new generation should get an opportunity. This could be a decisive moment to discuss new responsibilities of the AMP.
7.4 SWOT analysis

**Strengths**

- Good infrastructure (highways), growing airport with good (cheap) connections
- Porto and the region are well-known, positive brands
- Growing metropolitan population, high percentage of young people and high human skills and high entrepreneurial spirit
- The metropolitan area already operates as one functional region (particularly the city and its first 'sub'urban ring, the urban core), partly thanks to the development of the Porto metro system
- Shared cultural identity within the metropolitan area, thanks to many people suburbanizing from Porto and the local FC Porto football club

**Weaknesses**

- Individualistic culture has led to few experiences in cooperation
- Fragmented public transport system (tariffs; operations) and management limit regional integration
- The region’s economy is heavily based on industries (but see also opportunities)
- Porto politicians seem unable to influence decision making at the national level, which is often favouring Lisbon
- Housing and building policies promote uncoordinated suburbanisation of businesses and people and hamper redevelopment of inner city. The organising capacity to tackle this is missing.
- AMP and CCDRN due to lack of competences cannot promote regional integration and cooperation (but see also opportunities)

**Opportunities**

- Economic crisis as combined with entrepreneurial spirit poses opportunities for innovation and could create sense of urgency among municipalities to cooperate
- Large research capacity, also on a larger scale: Improve regional economy by linking up northern Portugal and three important universities (in Porto, Braga’s/Guimarães and Aveiro)
- Tourism can be a vehicle that promotes regional integration, especially between urban core and more rural outer layer (linked with the Douro region)
- Platforms like the AMP, CCDRN and the public transport agency AMTP provide opportunities for future integration, when granted more competences
- Next local elections will see the departure of many mayors. New mayors can bring a fresh new breeze in regional cooperation.
- The traditional industries form a logical basis for future strategies of smart specialisation, in which the traditional industries are to be modernized.

**Threats**

- Domination of the central state that centralizes services. Especially in these times of cutbacks.
- Businesses that continue to leave (to suburbs, Lisbon and Madrid) may in term lead to departure of human skill too, because an attractive central city is vital element for competitiveness
- Neglect of the core city (Porto), whose fortunes are decisive for surrounding municipalities also.
- Governance culture and institutional structure does not allow reasoning from a metropolitan perspective, while this will be increasingly necessary

7.5 Conclusions

Functionally, the metropolitan area of Porto is quite well integrated. Due to suburbanisation processes the towns directly around Porto have merged, together with Porto, into one coherent urban area. People move in crisscross patterns across the region, which may be fostered by and continues to foster a shared regional identity. To the outside world, people from all over the region refer to themselves as being from Porto. However, building and housing policies promoted suburbanisation but at the same time impeded renewal of the central city of Porto. Both businesses and inhabitants have moved out and continue to do so. Although the city of Porto remains the most important centre for services (hospitals), education (the University) and culture (Serralves, Casa da Musica), this position is steadily being undermined. A competitive metropolitan area needs a strong urban centre, but the rise of offices and shopping malls in the suburbs at the cost of businesses in central Porto and the outmigration of people will lead to the opposite. Regionally coherent policies are needed to balance these developments, but the metropolitan area doesn’t have a fitting institutional platform to do so. This partly reflects the lack of recognition of the role Porto plays as a gateway to the world for the whole metropolitan areas.

Besides the internal process mentioned above, external pressures also force the region towards more cooperation, coordination and integration on various levels. The economic crisis has led to a huge problem on the housing market (about 12% of the houses in the region are vacant) and shopping malls that have recently been constructed are facing difficulties. The transition towards a service, tourism and research based economy seems to ask for integration from multiple perspectives. At the level of the built-up area, cooperation should focus on better balancing the development of suburbs and the Porto city centre. From a touristic point of view, integrated and coordinated promotion of both urban amenities and rural attractions (Douro valley, traditional industries) will benefit the whole metropolitan area. Finally, for economic competitiveness cooperation is needed on an even larger scale. Porto needs to hook up with its neighbouring cities of Aveiro in the south and Braga in the north. The cooperation between the three universities in the region offer a promising start. Linking the activities of these universities to the entrepreneurial spirit in the region (through business-to-research platforms) with a specific regional focus could help the region to diversify and renew its economy. Porto can profit from Guimarães as the current capital of culture.

A culture of governance is lacking in Porto to stimulate regional cooperation and coordination. Although entrepreneurial, the prevailing culture is also quite individualistic. Therefore, cooperation is not in the ‘genes’ of Portuguese people. The dualistic relationship with the national government in Lisbon adds to that. As said, politicians are either focused on the national or local (municipal) level, and the regional perspective loses out because this has no strong impact on people’s everyday lives. Although officially supporting regionally coordinated policies, local politicians in practice prioritize the daily problems within their own municipalities. This makes it difficult to create a clear inter-
8 Milan Metropolitan Area

8.1 Introduction to the region

The Milan Metropolitan Area, also known as ‘Grande Milano’ or ‘Greater Milan’, is the urban agglomeration around the city of Milan. The metropolitan area of Milan is home to 7 million inhabitants. The city of Milan is its dominant urban core in terms of economy, but in terms of population or territory Milan is rather small with ‘only’ 1.3 million inhabitants. Located within the wealthiest region of Italy – the region of Lombardy – Milan is the capital city and it is widely considered to be the driver of the regional, and even national, economy. The metropolitan areas’ strong economic sectors include financial, commercial and juridical services, marketing and bio-health. Furthermore, Milan is famous for its fashion and design businesses, which are strongly linked to the textile and furniture clusters in the municipalities in the northwest and northern part of the region.

The metropolitan area is characterized by a high institutional fragmentation. The area includes in total 248 municipalities; all municipalities in the province of Milan and the province of Monza e Brianza, 49 municipalities in the province of Varese, 43 municipalities in the province of Como and 45 municipalities in the province of Lecco. Dealing with
the institutional fragmentation in the region is a main challenge for all authorities. The drastic extension of Milan’s metropolitan area during the last decades can be explained by two processes. First, the growth is inspired by the establishment of large industries which caused a growth in population as well. Second, the rise of household income caused high dynamics on the real estate market. During the process of suburbanisation many households from the city of Milan moved away towards small- and medium sized municipalities in the surroundings of the city. These small villages transform to large suburbs which are closely integrated to the daily urban system of Milan. Currently, there is a process of counter-urbanisation going on which can be explained by changes in the residential preferences and the rise of household incomes. Among other factors, this centripetal process caused dynamics on the real estate market, leading to very high and rising real estate values in the central core.

Regional challenges
The Milan Metropolitan Area is facing several challenges. The main challenge for the region is to remain competitive on a longer term and be attractive for people and business, especially in the light of the current economic crisis. From the 1970s onwards the population of the city of Milan has been declining although this process has stabilised nowadays due to immigration and counter-urbanisation. For the strong suburbanisation a multitude of causes can be listed. Firstly, the car made it possible for people to commute to work, allowing them to reside in the suburbs. Secondly, the ever rising housing costs in Milan pushed the lower- and middle income households out. Also, the negative externalities of uncoordinated spatial development such as congestion, pollution and a lack of green space was a driving force of suburbanisation. The suburbanisation processes have had a strong impact on the mobility patterns within the region. More and more people take the car to drive to work, shops or entertainment, which results in major congestion problems. In the region all roads and rail lines are pointing towards Milan. This radial infrastructure system causes major problems and solving them is considered a major issue for Milan to remain attractive for people and business. Moreover, the metropolis is facing environmental problems since the city is extremely polluted. There is also a lack of recreation green space in the city. Issues such as ‘liveability’ and ‘quality of life’ are increasingly important to attract high-skilled people or expats to the city, and these issues have been under pressure. Challenges relating to the improvement of quality of life need to be seen in the context of the transformation of a successful industrial city towards a service-oriented city, even though industrial activities are still an important economic sector of Milan’s economy (OECD, 2006) The strong economic growth of Milan in the last decades has caused significant problems such as a lack of available land for new developments and negative externalities of growth such as pollution, congestion and a lack of affordable housing. The coming years Milan needs to face these challenges in order to remain competitive on the longer term. Obviously, such challenges cross municipal borders and hence cannot be solved locally, but need a coordinated regional response.

Milan Metropolitan Area as case study
The Milan Metropolitan Area is a prototype of an ‘incorporation mode’ polycentric metropolitan area, meaning that this polycentric area is dominated by a large city that extends its sphere of influence to once rather distinct other, but much smaller cities in the wider metropolitan area. Milan’s dominance is not only in terms of population, but also the fact that Milan is the driver of the national economy. Since Milan is gradually running out of space to accommodate new developments, the city is increasingly more dependent on possibilities offered in the broader region. This requires Milan and the surrounding region to cooperate better with each other.

The case study is based on in-depth interviews with key-experts in Milan Metropolitan Area. A broad range of actors has been interviewed; from representatives of government authorities of three different levels (local, provincial and regional) to academics specialized in urban and regional planning as well as metropolitan associations. Besides interviews also policy documents available in English and other documents on Milan’s polycentric urban structure are used to develop this case study.

8.2 Strategies for regional cooperation and integration

Regional strategy
The Region of Lombardy defines the (spatial) strategy for the entire region which consists of 12 Provinces and 1546 municipalities. Italian regions are highly autonomous and

3 See Appendix 1 for list of interviewees
The Region of Lombardy consists of 12 provinces; two of these provinces are fully part of the metropolitan area of Milan and three provinces (Como, Lecco and Varesa) are partly dealing with the influence of the metropolitan area of Milan. The north-eastern municipalities decided to split from the Provincia di Milano by forming a new province: Provincia di Monza e Brianza, which became operational in 2009. Italian provinces define territorial policies in which they can protect agricultural land and regulate infrastructure programming and environmental issues. Due to reforms in the light of the economic crisis, the central government plans to drastically reduce the role of the provinces. The Provincial parliaments will not be directly elected anymore but need to act more as regional platforms for cooperation. The provinces have mainly a coordinating role with limited powers and they do not have much powers to steer land use developments. An important strategy for regional cooperation that was launched in 2005, is the ‘City of Cities Strategic Project’. In this project the Province cooperated with the Department of Architecture and Planning of the Polytechnic University of Milan (see Balducci et al., 2011). The name of this report ‘City of Cities’ refers to the polycentric structure of Milan’s metropolitan area. The message is clear: ‘Grande Milano’ cannot be seen as one city but consists of various cities.

In total, 248 municipalities are part of the Milan Metropolitan Area. The municipalities are small in size and large in numbers, which creates a patchwork of relative autonomous areas. The provinces have little competences to enforce cooperation between the municipalities. The municipalities are relatively autonomous to define their own plans, policies and land use. In practice, this often means that each municipality plans its own industrial area at the outskirts of the centre, which results in negative spillover effects (e.g. noise, pollution) for neighbouring municipalities. There is coordination between municipalities in the field of social welfare and labour markets. For example the Piani di Zona which is a zoning plan that each municipality has to make to coordinate welfare delivery, overlooked by the province. This form of coordination is obliged by law, and hence does not reflect pro-active initiatives for inter-municipal cooperation. The Accordo di Programma is another tool that is frequently being used to implement public-private projects in a coordinated way. This administrative procedure allows municipalities to bypass differing policies or regulations and coordinate public and private activities in complex decision making processes. The frequent use of the Accordo di Programma reflects a tendency for pro-active cooperation between public and private activities in complex decision making processes.

### New urban pole | Objective
--- | ---
Milan conurbation | New transport connections in order to relieve congestion of the existing road network.
Malpensa | Develop a high level and dense urbanisation accompanied by a satisfying accessibility system.
Lodi-Crema-Cremona | Develop a main pole for agriculture innovation biotechnologies and food tourism
Brescia-Mantova-Venezia | Develop better airport connections.
Lomellina-Novara | Make optimal use of new transport projects (e.g. TEN railway system Genova-Rotterdam). Develop Novara as a complementary pole of Milan in terms of jobs and service functions.

Source: Regione Lombardia, 2011

The five new poles which are introduced in the plan. By pursuing the development of various urban poles spread throughout the territory a more equal development of the region is aimed for to counterbalance the dominance of Milan. However, this plan is a purely strategic document and does not have large implications on local land use development nor on investment decisions (like big infrastructure projects) taken by the European Union, Italian national government and the transport department of the Region of Lombardy itself. The best way for the Region to steer developments are its competences on infrastructure development and regional public transport. The idea is that new connections will improve the (economic) performance of the region and further promote regional integration. Surprisingly enough, the region has no specific or detailed policy or framework for the Milan Metropolitan Area. The metropolis is just one of the five urban poles within the region.

### Provincial and municipal strategy

The Region of Lombardy consists of 12 provinces; two of these provinces are fully part of the metropolitan area of Milan and three provinces (Como, Lecco and Varesa) are partly dealing with the influence of the metropolis. In the case of the Milan Metropolitan Area, the north-eastern municipalities decided to split from the Provincia di Milano by forming a new province: Provincia di Monza e Brianza, which became operational in 2009. Italian provinces define territorial policies in which they can protect agricultural land and regulate infrastructure programming and environmental issues. Due to reforms in the light of the economic crisis, the central government plans to drastically reduce the role of the provinces. The Provincial parliaments will not be directly elected anymore but need to act more as regional platforms for cooperation. The provinces have mainly a coordinating role with limited powers and they do not have much powers to steer land use developments. An important strategy for regional cooperation that was launched in 2005, is the ‘City of Cities Strategic Project’. In this project the Province cooperated with the Department of Architecture and Planning of the Polytechnic University of Milan (see Balducci et al., 2011). The name of this report ‘City of Cities’ refers to the polycentric structure of Milan’s metropolitan area. The message is clear: ‘Grande Milano’ cannot be seen as one city but consists of various cities.

In total, 248 municipalities are part of the Milan Metropolitan Area. The municipalities are small in size and large in numbers, which creates a patchwork of relative autonomous areas. The provinces have little competences to enforce cooperation between the municipalities. The municipalities are relatively autonomous to define their own plans, policies and land use. In practice, this often means that each municipality plans its own industrial area at the outskirts of the centre, which results in negative spillover effects (e.g. noise, pollution) for neighbouring municipalities. There is coordination between municipalities in the field of social welfare and labour markets. For example the Piani di Zona which is a zoning plan that each municipality has to make to coordinate welfare delivery, overlooked by the province. This form of coordination is obliged by law, and hence does not reflect pro-active initiatives for inter-municipal cooperation. The Accordo di Programma is another tool that is frequently being used to implement public-private projects in a coordinated way. This administrative procedure allows municipalities to bypass differing policies or regulations and coordinate public and private activities in complex decision making processes. The frequent use of the Accordo di Programma reflects a tendency for pro-active cooperation between public and private
actors. It is, however, not a proof of more coordination between different municipalities.

Metropolitan strategy?
Across Europe various metropolitan authorities appear, but there is not one formal or informal institute at the level of Milan Metropolitan Area. In Italy there is not any policy stimulating metropolitan governance (yet). In the early 1990s a law was put in place for the development of metropolitan areas, but the law was never implemented (Dell’Agnese and Anzoise, 2011). If such a law was adapted, it could have formed the basis for more equal and institutionalised cooperation in the metropolitan area. For the moment cooperation is still dependent on voluntary efforts of the different government levels. Such efforts, or policies for cooperation, have been developed by the Region of Lombardy, the provinces and the municipalities. Many of the strategies for regional cooperation are related to the competences of the region, provinces and municipalities. The strategies and policies are often tied to specific sectors such as land-use planning, transport or economy. There is a lack of coordination and cooperation between these separated departments. Although the Lombardy Region has defined an overarching spatial strategy which is a guidance for lower tiers of government, it does not have the competences to implement this strategy. Furthermore, the coordinating role of the Province of Milan is heavily undermined due to the dominance of the city of Milan and limited competences. At the moment, regionally coordinating efforts are pursued by more informal means of municipal cooperation. The Milano Metropoli agency is a platform for cooperation and handles the interests of the municipalities around Milan. At the moment, its focus is on small, acupunctural projects within the Province of Milan. Centro Studi PIM is an organisation erected in the 1960s with a similar objective. They deliver scientific-technical and operational support towards the associated municipalities as well as the Province of Milan and other public entities. These organisations will be mentioned in this report later on in more detail. Key message is that although they perform activities that support a metropolitan thinking, they don’t have the scope and capacity to develop fully fledged metropolitan development strategies.

8.3 State of integration
8.3.1 Spatial-functional integration
The extent of spatial-functional integration within the Milan Metropolitan Area differs for various scales. A distinction can be made between four levels of scale. On the megacity scale Milan and Turin are considered to be part of one urban system. The cities cooperate with each other since they both have important functions in terms of research, commerce and fairs. There is not (yet) much information available about this megacity scale, but the exact relationships between both cities are being studied. The second scale roughly encompasses the Province of Milan, the Province of Monza e Brianza and the larger cities that are located around both provinces such as Varese, Novarra, Lodì, Lecco, Como and Bergamo. From a functional perspective both provinces are highly integrated in the metropolitan area of Milan whilst the surrounding cities are oriented towards Milan, but they are not as fully integrated in the metropolitan area as the territories of the provinces. Those cities often have a specific history and offer qualities in their territories that are not present in the two provinces, such as for example the historical city of Bergamo and Como, which is located at the edge of the Alps and the touristic Como Lake. Another explanation of less functional relations between Milan and cities such as Varese, Novara and Lodì is the distance between them. The city of Bergamo pursues a policy of complementarity with regard to Milan, and to do so cooperate with smaller towns around the city (‘Bergamo Grande’) to improve transport and coordinate services. The three airports that serve Milan are located at this scale (Malpensa, Linate and Orio al Serio) and these are all operated by the ‘SEA Aeroporti di Milano’, a good example of coordination at this scale. The city of Bergamo, however, pursues a strategy that should direct passengers more towards Bergamo, instead of the airport simply being a terminal for passengers to Milan too. In order to do so it has recently changed the name of the airport from ‘Milano Orio al Serio’ to ‘Bergamo Orio al Serio.’ The third scale encompasses the Province of Milan and Province of Monza e Brianza. A diversity of locally rooted economic clusters is home to these territories (see Table 3).

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Economic clusters in the surroundings of Milan</th>
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</thead>
<tbody>
<tr>
<td>North of Milan ‘Brianza region’</td>
<td>Furniture</td>
</tr>
<tr>
<td>North-East of Milan ‘Vimercate’</td>
<td>Communication, media, ICT</td>
</tr>
<tr>
<td>North-South of Milan ‘Legnano’</td>
<td>Textile, elector mechanical industries</td>
</tr>
<tr>
<td>South of Milan</td>
<td>Agro-food business</td>
</tr>
</tbody>
</table>
These businesses are often characterised by a small size, family-oriented structure and local orientation. They are lacking a managerial culture and many of these businesses compete with each other at this local scale, while in the light of globalisation it would make sense for them to cooperate and compete at a more global scale. In order to remain internationally competitive, it is deemed vital to induce scale enlargement in these businesses by letting them cooperate and compete with foreign businesses instead.

The economic integration at this scale is far from perfect, and cross-sector connections can be further developed. While there is much interrelationship (commuting, business links) between the suburban towns and Milan, there is quite little interaction between the suburban towns. Moreover, the suburban area offers little variation in the housing market and has few regionally important services or attractions. The only exception is Monza, with its historic centre, the Villa Reale (albeit empty now), the Parco di Monza and the Monza racing circuit. Increasingly, large retail stores are developing next to highways, in response to the rising land prices in the city of Milan.

The fourth scale is the city of Milan itself. The city is the 'immaterial centre', the meeting place and international marketplace, as well as 'material centre' for services in the field of finance, insurance and marketing. A higher growth rate of jobs in the suburban area seems to hint at more balanced development and there were actually plans to relocate the Museum of Contemporary Art and several university campuses to places outside the city. In the end these plans were not implemented. In fact, it marked the start of a new phase of centralisation. A good example is the effort the municipality of Milan put in attracting the broadcasting company Sky to the city. In this case there was a clear competition between Milan and municipalities in the north-eastern part of the area where more media-related companies are clustered. As long as there is still place for new developments in Milan the process of centralisation will continue. For economic reasons as well as symbolic reasons Milan wants to have investments of the real estate sector within their territory. The strong competition between the municipalities can be explained by their fiscal problems. The municipalities have less tax-income, but can earn substantial amounts money by giving planning permissions for new developments. This partly explains why municipalities pay more attention to local rather than regional interests.

The replacement of the fair of Milan to the adjacent municipality of Rho might be a first sign of a changing attitude of the municipality of Milan. Also some university faculties have left the city for a location in one of the surrounding municipalities. The medical faculty of Bicocca University has moved to Monza, and another faculty is planned to be moved to Desio. The philosophical faculty of the San Raffaele University is housed in Cesano Moderno. These developments strengthen the relationships between Milan and its suburbs. There was, however, no metropolitan development rationale behind these developments, since they happened beyond the influence of the municipality of Milan itself. Besides these success stories, other attempts to decentralize metropolitan functions failed. For instance, the building of another new university campus in Gorgonzola failed. The municipality of Milan extended a metro line to the proposed site of the campus. At the end, the campus was never realised and the site remains empty. An adverse situation for both municipalities; the municipality of Gorgonzola has to deal with empty land around the station that they cannot develop and the municipality of Milan invested in the extension of a metro-line and in land around the station while they cannot earn their investments back since the campus is less likely to be build.

Metropolitan functions

Milan is making use of the critical mass of the broader metropolitan area. Only 15 percent of the total population actually lives in the city of Milan and consequently Milan strongly depends on its surrounding region. The main metropolitan functions, such as for example (inter)national headquarters and high-end cultural amenities, are still located within the city. The policy of the municipality of Milan strongly focuses on keeping the high-end functions within its borders. This leads to continued agglomeration of high-end functions in Milan, thus raising land and housing prices in the already crowded city. Low-end functions, like large-scale retail, are therefore gradually pushed outwards to the suburbs. The result is that disparities between Milan and its surroundings will gradually exacerbate.

Since the crisis the municipality of Milan is especially very keen on maintaining and attracting new metropolitan functions to its territory in order to remain competitive. A decade ago there was a period of decentralisation and competition between Milan and its suburbs. There was, however, no metropolitan development rationale behind these developments, since they happened...
the connection between the national/regional trains and the city’s public transport (e.g. metro, trams, and buses, operated by the Milanese municipality) is weak. Additionally, regional trains also run on low frequencies. The current infrastructure system of Milan hampers a further regional integration. The city of Milan is trying to tackle this by building parking spaces near metro stops at the outskirts of the city and by extending the three metro lines to surrounding municipalities. For example the red line towards the municipality of Sesto San Giovanni and Rho (location new fair) and the green line towards Abbiategrasso (see Figure 23). Remarkable is the investment of private money in the extension of the green metro line to the south. By providing a better connection with the surrounding municipalities the change might be that people move out of the centre of Milan to the end of the lines. The Passante is a new underground rail line that connects various terminus stations with each other (see the blue line in Figure 23). The line is developed to improve the regional rail infrastructure. Regional trains are now able to continue their journey beyond Milan. Criticism has been given to the new Milanese transport plan which mainly focuses on improving the connections within the city rather than improving the connections with the broader region. While precisely this regional perspective in (rail) transport becomes increasingly necessary to combat traffic jams and promotes the development of sites outside the city for new services. There are plans to erect a regional transport authority that should integrate the regional transport operators. A further integration of local and regional trains into a one ticket system would be an ideal situation. For now the Milan transport operator (ATM) has a standardized ticket that is valid in buses, trams and metro. There are also plans to improve the road infrastructure within the region. For example, the Pedemontana is a new highway in the north of Milan’s metropolitan area that will improve the east-west connection. This highway also connects Malpensa airport with the airport of Bergamo. The highway is likely to reduce the pressure on the (road) infrastructure of Milan as for now all roads are pointed towards Milan in a radial pattern. The promotion of a more concentric rather than radial infrastructure pattern will reduce the travel time between various parts of the region. It is, however, unknown when the Pedemontana highway will actually get implemented. The highway is an initiative and project of the Region of Lombardy without involvement of the municipality of Milan.

8.3.2 Cultural integration
With regard to the cultural integration within the region, Milan has a quite homogenous cultural identity. Cultural differences within the metropolitan area gradually have been mitigated due to increased functional integration and suburbanisation the last decades. Many people that do not live in Milan but for example Sesto San Giovanni, will say to the people from outside that they are from Milan. Especially immigrants, which make up an ever increasing share of the population of the metropolitan area, have no connection to ‘old’ local identities. For them, the whole metropolitan area (and even beyond) is referred to as Milan.

This situation differs for the municipalities in the northern part of Milan with historic cities such as Monza and Brianza. Traditionally there is a strong local identity present in this area and the local inhabitants often oppose themselves to Milanese domination. The Monza region is traditionally home to more prosperous people and this allows them to be more independent from Milan. Their own identity was the main reason for a group of municipalities in the Brianza region to split away from the Province of Milan and erect the Province of Monza e Brianza. This decision hampers a future regional integration within the Milanese metropolitan area. While Monza and Milan are very much integrated from a functional perspective, there is no metro line running to and from Milan to Monza city centre. Instead, this M1 line stops in the middle, at Sesto San Giovanni. It would make sense to lengthen it towards Monza, but the municipality of Monza is hampering this process. At the moment, an extension of the metro line is under construction but the line will bypass the city centre of Monza.

From a marketing perspective, the ‘brand’ Milan is quite strong due to the city’s history and important industrial city and its current economic position. Businesses located in the surroundings of Milan are generally making use of this brand. However, this brand is not (yet) translated into one coherent marketing strategy of the Milan Metropolitan Area. The Universal Exposition ‘Expo 2015’ in Milan could be an important event to spur this regional marketing identity. This upcoming exhibition poses opportunities for more coordinated efforts towards a joint regional marketing identity. Official institutional partners of the Expo are the city and Province of Milan, the Lombardy Region and the national Ministry of Economics and Finance. Until now, the event is largely focusing on the opportunities that Milan provides. Surrounding towns and municipalities, within the Province of Milan and beyond, are now developing their own strategies to promote their territories, while a coordinated effort could prove more valuable. Also the city of Bergamo wants to profit of the upcoming Expo 2015 and is therefore developing a strategy to draw more attention (and tourists) to the city.
8.3.3 Institutional integration

The decisions of the municipalities to split from the Province of Monza to form the Province of Monza e Brianza is characteristic for the extent of institutional integration within the metropolitan area. Municipalities have problems with the dominant role of the city of Milan and prefer to be on their own. Because of the many small municipalities that are located around Milan and their fragmented spatial planning policies, there is no strong need for Milan to cooperate with them to ‘get things done’. Instead, Milan prefers to cooperate directly with the regional authority and the national government in Rome. The lack of cooperation between Milan and its direct neighbouring municipalities is therefore not so much caused by a political cleavage such as left and right wing politicians or differing stakes. Instead, it is caused by the fact that Milan is so dominant that, for their own territory, they can operate independently from neighbouring municipalities. The new mayor of Milan who is elected in May 2011 is more open for cooperation which might change the institutional situation slightly.

One of the reasons why there is not a strong institutional integration within the region is the hierarchical relation between the three tiers of government. There is limited cooperation between the region, the provinces and the municipalities. Within the Milan metropolitan area, voluntary cooperation gained momentum in the early 1990s. The redevelopment of brownfield sites was one particular theme on which municipalities started to cooperate, since brownfields became an increasing phenomenon around Milan due to deindustrialisation processes. The Milano Metropoli agency was born out of this initiative, and today has a much wider perspective than brownfield redevelopment. Milano Metropoli is a development agency with various public shareholders that tries to stimulate coordination between the municipalities. Various municipalities around the city of Milan are member of the organisation as well as Province of Milan and the Milan Chamber of Commerce. But the fact that the city of Milan is not participating as a partner does not help institutional integration in this respect. Milano Metropoli does not formulate policies, but links together the municipalities through various projects (amongst others) land use, marketing and industrial services. The shareholders provide capital for individual projects, but for stability reasons the agency is thinking about regular fees. The activities of these intermediate bodies are very much project-oriented and do not (yet) have a strong impact on policy development. Better coordinated efforts should also be pursued within the field of business services. At the moment the Chamber of Commerce operates at the provincial level, but in practice all municipalities have their own regulations. This is confusing for firms that want to establish themselves in the region.

Another example of intermediate bodies that aim to stimulate coordination and cooperation within the region is Centro Studi PIM, which is an organisation that is erected in the 1960s by several municipalities. They deliver scientific-technical and operational support towards the associated municipalities as well as the Province of Milan and other public entities. One of their main tasks is to coordinate the local spatial plans of various municipalities although there are not any significant market failures such as an extreme oversupply of office space, or duplication of services. But the fact that each municipality has developed its own office parks does lead to negative externalities for neighbouring municipalities. Centro Studi PIM aims to avoid this kind of problems by integrating the different plans. The activities of Milano Metropoli and Centro Studi PIM show that there are interesting experiences to stimulate coordination and cooperation across scales and sectors, but their activities have relative little impact. At the moment the problems of metropolitan governance or governance coordination have not been solved yet. In any case, there is not a single metropolitan authority responsible for a future integration of the entire region.

8.4 SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>• Strong functional integration in terms of housing market and labour market.</td>
<td>• There is little sign of awareness that ‘what is good for Milan is good for its surroundings’ and vice versa.</td>
</tr>
<tr>
<td>• Complementarity of economic sectors within the region (Milan: city of design and fashion with furniture and textile clusters in the surroundings).</td>
<td>• Hierarchical way of working between layers of government which causes a lack of coordination and collaboration.</td>
</tr>
<tr>
<td>• Milan is the focal point of the region and an international gateway for local economic clusters.</td>
<td>• Large amount of small municipalities with individual land use plans, which leads to fragmented spatial planning and negative externalities.</td>
</tr>
<tr>
<td>• Strong (inter)national brand of Milan and important driver of the national economy.</td>
<td>• There appears to be strong local competition between firms (often family-oriented and lacking a managerial culture), instead of reaping the benefits of clusters together.</td>
</tr>
<tr>
<td>• The regional public transport system is not well integrated with the Milanese public transport system; trains run on too low frequencies.</td>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• Milan starts thinking and acting beyond their municipal borders (see example fair and extension of metro lines).</td>
<td>• Negative externalities in Milan such as pollution, congestion, lack of affordable housing require a regional approach, but the conditions for such an approach are hardly present.</td>
</tr>
<tr>
<td>• Suburbs could become less dependent on Milan since they experience a relatively higher growth of employment than Milan.</td>
<td>• Continuing institutional fragmentation, such as splitting up the Milan province in 2009, and a lack of a culture of cooperation makes metropolitan governance complicated.</td>
</tr>
<tr>
<td>• Expo 2015 can create a stronger regional marketing brand.</td>
<td>• Lack of space for new development in Milan, and continued policies for centralisation of higher-order urban functions may hamper their development.</td>
</tr>
<tr>
<td>• Strong feeling of urgency to improve the infrastructure system (road and rail) in order to reduce congestion (counts mainly for Region of Lombardy).</td>
<td>• Negative externalities in Milan such as pollution, congestion, lack of affordable housing require a regional approach, but the conditions for such an approach are hardly present.</td>
</tr>
<tr>
<td>• Future governance arrangements can build on the activities of existing inter-municipal platforms such as Centro Studi PIM and Milano Metropoli.</td>
<td>• Continuing institutional fragmentation, such as splitting up the Milan province in 2009, and a lack of a culture of cooperation makes metropolitan governance complicated.</td>
</tr>
<tr>
<td>• Continuation of policies for centralisation of higher-order urban functions may hamper their development.</td>
<td>• Lack of space for new development in Milan, and continued policies for centralisation of higher-order urban functions may hamper their development.</td>
</tr>
</tbody>
</table>
8.5 Conclusions

The city of Milan seems to make use of the critical mass available in the broader metropolitan area. The concentration of high-end business services, high-level cultural amenities and important (governmental) institutions makes the city important, also on the international stage. The surrounding municipalities have few resources to compete with Milan since their offer of housing is quite undiversified and they have little regionally important services to offer. So, it seems that Milan ‘borrows size’ from its surroundings and not vice versa. Although Milan is the undisputed central city of the northern part of Italy, it is questionable whether the city can hold this position without using the opportunities provided by its wider metropolitan area. There appears to be a lack of understanding of the importance of the city and the region for each other, which is reflected in the lack of cooperation at the metropolitan scale, and the at times individualistic operation of the city.

The Milan Metropolitan Area is spatial-functionally integrated with regard to the labour market, the housing market, business relations and amenities. Due to the complementarity of the different economic sectors present in the region there are strong linkages. Since economic clusters are an important asset of the region, their potentials should be regionally exploited. Regional policies could let to more functionally integrated clusters and better overall competitiveness of Milan Metropolitan Area. Furthermore, there are initiatives taken to enhance a further functional integration of the region by reducing the congestion. It depends on the actual implementation of all proposed infrastructure projects whether or not the situation will change within the coming years. Moreover, it is questionable whether it is wise for Milan to put much effort in maintaining central urban functions within its city borders, as the surrounding areas present development opportunities that may allow these urban functions to perform better. The opening of a trade fair outside of Milan is a case in point. On the longer term, the city will increasingly lack available space for new developments and nowadays it is already dealing with many negative externalities of growth, such as pollution, congestion and a lack of affordable housing and public green spaces.

The Milan Metropolitan Area is integrated in term of cultural identity and marketing. People and firms consider themselves as being part of Milan. Only the municipalities in the Province of Monza e Brianza prefer to be autonomous and do not share the Milanese identity. The regional identity can be enhanced by better exploiting the opportunities offered by for example the Expo 2015. The institutional integration is lacking behind in the metropolitan area of Milan. Municipalities, the provinces and the region all work in quite a hierarchical way and there is no metropolitan coordination within the area. The municipalities are small in size and large in numbers, which creates a patchwork of relative autonomous areas. At the same time, provinces have little competences to enforce cooperation between the municipalities. Metropolitan coordination is being pursued by voluntary and intermediate institutes such as Milano Metropoli, but their actual influence is rather limited. The fact that Milan is not part of such a cooperation platforms is a sign of its individualistic behaviour.

Overall, it would be wise for Milan, as well as other cities, to recognise the crucial role other municipalities play in the broader metropolitan region. A process should be started that stimulates cooperation between municipalities and make integrated policies that enhance the region as a whole. This requires, however, more insights in the actual benefits of stronger functional, cultural and institutional integration of the region.
9 Tri-City Region (Gdańsk-Gdynia-Sopot)

9.1 Introduction to the region

The Tri-City Region in Poland is located at the Baltic Sea. As the name Tri-City Region implies, the region consists of three major cities: Gdańsk, Gdynia and Sopot. Gdańsk is the capital city of the Pomeranian Region; one of the sixteen Voivodeships (regions) in Poland. The three cities are closely located to each other with a distance of 22 km from the city centre of Gdańsk to the centre of Gdynia, with the city of Sopot in between (see Figure 24). The capital of Poland, Warsaw, is located at 300 km distance, and Poznan is 250 km away. This implies that there are no larger urban centres in the wider area surrounding the Tri-City region, also making it the undoubted core urban area of its region.

The Tri-City Region counts nearly one million residents: Gdańsk counts 450,000 residents, Gdynia 250,000. The population figures for the three cities are in decline due to suburbanisation, a process that is partly triggered by the availability of affordable housing in...
suburban towns and villages. The population of the metropolitan region as a whole, including several suburban towns, is rather stable. The Tri-City Region is the largest academic and scientific centre of northern Poland as well as the main cultural centre. Gdańsk appears to be the leading city but Gdynia is a strong competitor with a comparable economic and demographic profile. The health-spa and tourist resort Sopot is one of the richest cities of Poland and is the residence of several key figures of the Polish cultural and political elite. The profile of the cities is strongly determined by the history of the region.

**History**

The history of the region is highly relevant for understanding the dynamics within the region. In the 19th and early 20th century Gdańsk and Sopot were part of different administrative forms managed by Polish and German rulers. After the First World War Gdańsk (German name Danzig) came under the sovereignty of the League of Nations. The ‘Free City of Danzig’ was a semi-autonomous city-state that existed between 1920 and 1939, consisting of the Baltic Sea port of Danzig and surrounding areas (amongst others Sopot). Due to the troublesome collaboration over the joint use of the port of Gdańsk the new Polish government quickly decided to build its own port, and chose as its location the then little Polish seaside resort village of Gdynia. Gdynia was to become the maritime capital of the Second Polish Republic. The city was being built from scratch and grew quickly from 6,000 to 250,000 inhabitants. While Gdynia developed into a power symbol for a reborn Poland, the emergence of a competing port right on its doorstep and the loss of its economic hinterland led to a deep economic crisis for Gdańsk. After the Second World War, Gdańsk became part of the People’s Republic of Poland. The city was resettled by a Polish population, itself mostly expelled from the pre-war Polish eastern territories annexed by the Soviet Union. In economic development terms, a special impetus was given to the extension of the port and industrial sites, notably the shipyards. The communist central state decided to foster development in Gdańsk as well as in Gdynia. This resulted in the fact that both cities grew spatially together, with the city of Sopot in-between them (Tölle, 2008).

**Tri-City Region as case study**

This case study discusses the polycentric development of the Tri-City Region by describing the state of the art of the integration of the three cities into one metropolitan area. Gdynia is developed to be the competitor of Gdańsk and therefore it is interesting to analyse the role of cultural identity in this region. The case study is based on in-depth interviews held with the key-actors within the Tri-City Region during a three days visit to the region. Moreover, policy documents and (academic) papers about the region are used for this study.

**9.2 Strategies for regional cooperation and integration**

**Pomeranian Region**

After the reform of Poland in 1989 a process of decentralisation started which gave the local government level substantial powers. In comparison with the local government, the regional government is rather weak since they do not have much (financial) means to steer developments. In 1998 the act on regional government has been adopted and sixteen Voivodeships (regions) were assigned in Poland. The regional authority is responsible for the European Union regional development policy programmes, such as the Regional Operational Program 2007-2013, and the preparation of the Regional Development Strategy till 2020. The Pomeranian Region mainly focuses on developing strategic guidelines for the region that should be followed by the cities. Since the regional government cannot directly interrupt development processes they cannot force the actual implementation of the plan at the local level.

The main objective of the ‘Spatial Development Plan for Pomeranian Voivodeship’ (approved in 2009) is to shape a functional-spatial structure of the region in order to “create favourable conditions for balancing utilisation of spatial qualities, values and resources with economic growth, higher standard and quality of life and per-
manent preservation of natural environmental values” (Summary; p.7). The plan emphasises the role of the Tri-City Region and its polycentric diversity with regard to the competitiveness of the entire region. Figure 25 illustrates the hierarchy of centres, agglomeration area and functional urban areas in the Pomeranian Region. In this document the centre hierarchy is defined as follows: Gdańsk is the supra-regional centre, Gdynia the agglomeration centre and Sopot is an agglomeration supplementary centre. The three cities are all part of one larger functional urban area. Noticeable is the hierarchy made between the three cities rather than defining the cities as one supra-regional centre of the region.

Metropolitan planning

According to the Polish Planning Act defined in 2003 the marshal of the Voivodeship should prepare a special planning document for metropolitan areas which is more detailed in comparison with the plans for the entire Voivodeship. The same act also declares that the borders of metropolitan areas should be indicated in the National Spatial Planning Concept and in first instance only Warsaw was indicated as a metropolitan area. Last years the Polish government recognizes more ‘metropolitan areas’ across Poland, and they also acknowledge the Tri-City Region as one of them. These metropolitan areas are selected on the criteria to be strong centres of entrepreneurship and innovation influencing both Poland and Europe. As a metropolitan area the Tri-City Region does receive more attention but no additional funding. To stimulate the metropolitan areas across Poland, the national government proposed a Metropolitan Act in 2008, but this act is not (yet) adopted by the National Assembly. This act defines a new mode of governance for metropolitan areas and gives regional authorities competences to prepare a more detailed spatial development plan for Polish metropolitan areas. In 2003 the Marshall Office of the Pomeranian Region initiated a ‘Metropolitan Board’ with the aim of stimulating the integration of the cities within the Tri-City region. Representatives of the Pomeranian Region and the cities are present at these meetings. The board is not a legal institution but is based on voluntary participation of the cities. In addition to the ‘Metropolitan Board there is an ‘Expert Council’ that consist of several experts that come together every two or three weeks. The aim of the council, established in 2011, is to push forward cooperation at the metropolitan level.

Metropolitan Area Associations

Taken into account the growing attention for metropolitan areas at national level, the city of Gdańsk decided in 2011 to initiate a metropolitan area by themselves by setting up the Gdańsk Metropolitan Area Association. The association consist of 35 communes, including municipalities (see Figure 26 for all members of the association). From the outsider perspective, and in contrast with the Spatial Development Plan of Pomeranian Voivodeship (2009), it is surprising that Gdynia is not part of this metropolitan area. One of the reasons why Gdynia did not want to be part of the Gdańsk association is the name. Gdynia did not want to be part of the Gdańsk Metropolitan Area, and on their turn, Gdańsk did not want to use the name Gdańsk-Gdynia Metropolitan Area. Gdańsk argued that they have a much stronger (international) brand in comparison to Gdynia. Another reason why they do not join the same metropolitan association is the poor (personal) relations between the two mayors who barely work together.

The aim of the Gdańsk Metropolitan Area Association is to create an attractive market for investors in the region and to stimulate the integration of the labour market, education and business (Municipality of Gdańsk, 2012). The members of the association pay
a fee in order to create commitment and to provide the association with financial means. Every month there is a meeting with the Management Board of the Gdansk Metropolitan Area Association which consist of nine people with the Marshal of Gdansk as the chair.

As a reaction on the Gdansk Metropolitan Association, Gdynia started their own metropolitan association with cities in their surroundings, called ‘Norda’. The collaboration with these municipalities is mainly focused on the integration of the physical infrastructure and coordination of regional services such as collecting garbage, water reservoirs et cetera. Striking enough some municipalities are member of both metropolitan associations. This indicates that there is a certain amount of overlap between them. The Pomeranian Region is not involved in one of the associations, since they do not want to support such separated initiatives of the cities. They want Gdansk and Gdynia to actually work together within one metropolitan association. Since both metropolitan associations are just recently set-up, it is unknown how they will develop within the coming years. At the moment, Gdansk Metropolitan Area Association is thinking of preparing their own act on metropolitan areas and prosing this act to the Polish parliament. The Gdansk Metropolitan Area Association still hopes that Gdynia will become one of their members on the longer term but whether this would actually happen is questionable.

To sum up: The Tri-City Region is lacking one coherent regional platform for cooperation. The Pomeranian Voivodeship tries to stimulate cooperation within the region but this is not an easy task. Since the spatial development plan is not an act of local law, the plan can only relate to issues of supra-local and regional importance. The municipalities must follow these regulations in their local planning documents. Municipalities and communes are making their own spatial plans and there is not much inter-municipal or regional integration between these plans. Still, there are some promising first signs of cooperation between the policy-makers of the three cities. For example, the joint efforts to create a regional cycling infrastructure and a shared road traffic management system.

9.3 State of integration

9.3.1 Spatial-functional integration

The labour market is highly integrated looking at the commuting patterns between the three cities; many people live in Gdansk, but work in Gdynia (and vice versa). During rush hours there are major commuting streams between the cities. The SKM train line between Gdansk and Gdynia, crossing Sopot halfway, is an important public transport link. The train frequently runs between the three cities and is, especially during rush hours, very busy. The SKM can be seen as the backbone of the Tri-City Region. Along the line and its stations the area is highly urbanized; offices, housing and shopping malls are all build in its proximity. The capacity of the road infrastructure between the cities is insufficient, certainly given the rapid increase of car-ownership, and every day there are long traffic jams. The nomination of Gdansk as one of the playing cities of the UEFA European Football Championship 2012 gives a major impulse to the city since the national government invested heavily in the road and rail infrastructure of the region. Central and regional governments are making plans to develop a new ring road in order to improve the connectivity of the cities, and its suburbs. Besides the road infrastructure, the rail infrastructure will be improved as well with the development of the Pomeranian Metropolitan Railway, which is a new rail line (20 km) that will link Gdansk and the airport of Gdansk with the already existing rail line towards Gdynia. In total eight new train stations will be developed and they are likely to give a major impulse to the area.

As well as the labour market the housing market of the Tri-City Region is rather integrated. There is, a regional market that is even bigger than the Tri-City Region itself. This can be explained by the good information system within the region, such as fairs that present new projects available in the entire region. Caused by a process of suburbanisation, the housing market is rather spread out. People are leaving the city for a much bigger house in a saver, greener and relatively quieter environment. The housing prices in Sopot are more expensive in comparison with Gdansk and Gdynia; they even belong to the highest property prices in Poland. According to the interviewees, the amenities of the three cities differ from each other and there is not much duplication. This seems to be the result of luck rather than good coordination between the cities. The cities strongly believe in the coordination power of the market. It is believed that the market prevents the development of an oversupply of housing, cultural amenities and sport facilities.

Enterprises and institutes are not limited at all by the municipal borders of the three cities when doing business. They chose their location on the basis of the given conditions. The cities start to cooperate with each other with regard to the (inter)national profiling of the region. Since the cities are using different brand names the profiling is rather...
weak. The city of Gdańsk is convinced that Gdańsk is the strongest brand for the entire region and they prefer this brand above the Tri-City Region or Pomeranian Region. Gdynia, however, refuses to use Gdańsk as a brand name which Limits the cooperation to attract business together.

The cities have a rather similar economic profile which can be explained by the historical reason that Gdynia was developed as a rival port city to the port city of Gdańsk. Both cities depended for a long time on powerful shipyards. In 1979 in port of Gdynia the first container terminal in Poland (Baltic Container Terminal) started to operate. It strongly influenced on the specialisation of the Gdynia port as a general cargo port. In the Gdańsk port the bulk cargo dominated. In 2007 Gdańsk completed the development of a new deep-water container terminal. At that moment, the port of Gdynia handled 80 percent of the container traffic for all Polish ports. By developing a new terminal in Gdańsk, the port authorities are often in competition with each other and the capacity of all terminals together is not being fully used (yet). Stories go that ships, when they arrive in the area, start to negotiate with both ports and then decide to opt for the one that promises the cheapest handling of their containers. Rather than developing another terminal, it would probably have been wiser to invest in the connecting land infrastructure. The lack of good hinterland connections, such as motorways, makes the Tri-City region not very competitive compared to other seaports in north-west Europe. There is a discussion going on about specializing the ports in order to make them more complementary. Fact is that the tallest ships have difficulty to enter the Gdynia port, given the lack of space to move. In this respect, the deep-water container terminal of Gdańsk is important for the region. Interesting is the fact that in the Socialist era, the ports were unified in one port authority, and they got separated after the changes in 1989. In general, the public opinion seems to be that competition between the ports is better than for instance merging the port authorities.

Within a few years, it is highly likely that there will be two airports in the Tri-City Region. Gdańsk has its own airport and currently Gdynia is strongly supporting the transformation of the military airport in Kosakowo, a commune adjacent in the north of Gdynia. The planning is to transform this former military airport into a passenger and cargo airport. They want to develop a supplementary airport that can be used in times of emergence, or when weather conditions do not allow to land at the nearby Gdańsk airport. In first instance, the city of Gdańsk and the Pomeranian Region did not support the plan of (re)development of this military airport. With the development of the Pomorskie Metropolitan Rail that connects both airports with each other, they implicitly approved the (re)development of the airport. The recently renewed airport of Gdańsk has a limited capacity since there is not much space for expansion such as a second landing ground, an additional cargo terminal or new parking plots. Taken this into account, it is considered that the airport of Gdynia can be complementary to the airport of Gdańsk. Nevertheless, there is a higher chance for competition since low cost carriers that are now flying on Gdańsk are likely to switch to Gdynia/Kosakowo if they can offer a better price. Interesting is that the city of Gdynia even has a share in the airport of Gdańsk, and hence, profits from this airport doing well. Obviously, one may doubt whether a metropolitan area of just one million inhabitants is capable of supporting two airports, and this seems to be a crucial issue for regional coordination.

9.3.2 Cultural integration
At first impression, the name ‘Tri-City Region’ may seem to be a modern label to market the area externally, and to foster a sense of belonging together within the region. In reality, however, the label ‘Tri-city Region’ (Trójmiasto in Polish) circulates already for decades and its origins, some-where in the post-War period, are hard to trace. The name tended to be used informally by its inhabitants to indicate of which part of Poland they come from. Within the Tri-City Region there is not a culture of collaboration, and this can be explained by the cultural-historical background of the region. Gdynia is developed to be a competitor of Gdańsk and consequently the cities are used to be each other competitors rather than co-operators. Given the history of both cities it is understandable that there are not much examples of metropolitan coordination. As stated before, mainly the mayors are used to compete rather than cooperate with each other. The recent election took place in

Figure 29 City Centre of Sopot
November 2010 and in both cities the same mayors were re-elected. The attitude of the mayors towards each other and the cities they are representing seems to help them to get re-elected. Hence, this seems to reflect popular feelings of identity and rivalry.

It is certainly true that the citizens of Gdańsk, Gdynia and Sopot tend to have a strong local identity leading to pride. Although Gdańsk and Gdynia are both port cities, the cultural identity differs. Gdynia’s residents are proud of their efforts to develop the urban economy so quickly in the 1930s and again after Second World War. It is considered a truly Polish city, whereas Gdańsk obviously was a former German city. In fact, the first shootings of Second World War occurred in an attempt to regain the then Free city of Gdańsk. After the war, Gdańsk was repopulated by people from central Poland, what is now Latvia and Ukraine, and cities such as Vilnius and Lviv. The new inhabitants made great efforts to rebuild the devastated city. Now, Gdańsk, as the capital city of the Pomeranian Region, is more a city for public administration and related services. The city centre is still largely populated by the people who rebuild the city after the war and their children, which also implies that gentrification is hardly an issue. It also means that the potential for commercial and tourist functions is more limited than one would normally expect to find. Despite the strong local cultural identities, people and firms do not feel limited by the boundaries of their city. People live in Gdańsk, work in Gdynia and go for entertainment to Sopot. The cultural identity of the people does not hamper the further integration of the region. As stated before, the cultural rivalry is mainly noticeable amongst the politicians of the cities.

### 9.3.3 Institutional integration

The institutional integration within the region is rather weak due to a lack of political willingness to join forces. The recent initiative to set-up two metropolitan associations within the same metropolitan region is characteristic for the regional cooperation within the Tri-City Region. Unfortunately, the Pomeranian Region has not enough power to change the current situation. Due to a weak political integration there is a lack of metropolitan coordination in the region, especially at the strategic level. One regional plan for the entire Tri-City Region requires that either Gdańsk or Gdynia has to take the lead. But since both cities do not want to be dominated by each other it is difficult, and maybe even impossible, to define a joint (spatial) strategy. Exemplary of a lack of a joint strategy is the development of two container terminals and two airports within the region. Also the introduction of a public transport card that is valid in all three cities took ten years of discussion. Finally, the cities and the public transport companies agreed on the introduction of the Metropolitan Ticket. The ticket is, however, more a tourist ticket since it is too expensive for the daily commuters between Gdańsk and Gdynia to buy this card. For them it is still cheaper to buy two or three different tickets, when travelling through multiple cities.

On the longer term, institutional integration might improve within the coming years, since the politicians will get used to work together. There is, for example, an increasing amount of interaction and coordination between the policy-makers at the city’s departments. Again the historical context is important here, since municipalities were weak during the Communist rule and they only got powers again after the reform of 1989. This explains why the municipalities are reluctant to give some power away again to other governmental levels. Given this situation, it is understandable that it will take some time before politicians see the advantages of cooperation and coordination.

### 9.4 SWOT analysis

#### Strengths

- Functional-spatial integration of the region in terms of labour market, housing market, retail and leisure as well as business relations.
- Business and people are thinking and acting "regionally" (strong cross-border behaviour).

#### Weaknesses

- Establishment of two metropolitan area associations rather than one, which represents the limited willingness to cooperate at the metropolitan scale.
- Similar urban economic profile (two seaports, two airports) leads to strong competition and leaves room for firms to play off the cities against each other leading to suboptimal outcomes for the metropolitan areas.
- Use of different brands for the region (Pomeranian Voivodeship, Tri-City Region, Gdańsk Metropolitan Areas) weaken the (inter)national profiling.
- The current institutional framework does not support metropolitan cooperation very well.

#### Opportunities

- High potential of the region: skilled working force with a good working mentality and a flexible attitude.
- Enough space for new developments within the region in combination with major infrastructure investments made by national government for the European Football Championship 2012.
- Plans to improve (physical) connection between the cities by road- and rail infrastructure projects.
- New elections might bring new political leadership that is more open to avoiding wasteful duplication and regional cooperation and coordination.
- First signs of cooperation between the cities in several projects or programs (e.g. bicycling lanes, (inter)national profiling, metropolitan ticket).
- Improved hinterland connections may enhance competition with other metropolitan regions in Poland, which may raise awareness of better positioning the metropolitan area jointly.

#### Threats

- Lack of urgency to join forces since the cities are doing relatively well in terms of economic development.
- Political rivalry between mayors and politicians can instigate the cultural rivalry between citizens and business.
- Lack of a culture of cooperation between the cities; cities are used to competition.
9.5 Conclusions

Interesting in the Tri-City Region is the fact that strong functional integration comes coupled with a severe lack of regional governance and cultural unity, which may at first sight raise questions over the importance of regional cooperation and coordination as it does not seem to hamper functional integration. Despite the lack of political will to work together, business and people are thinking and acting ‘regionally’. They are not hampered by the municipality boundaries and see the Tri-City Region as one regional functional entity rather than three different cities. The lack of political cooperation can be explained by the historical-cultural background of the region. Gdynia is developed to be a competitor of Gdansk and therefore the economic profile of both cities is similar. Due to its history and a lack of metropolitan coordination between the cities there is less complementarity between Gdansk and Gdynia; they are both seaport cities with a container terminal and, in the near future, an airport. Last de-cennia, small steps are taken forward towards a more integrated, polycentric development of the Tri-City Region, and the Pomeranian Region has particularly been steering into that direction, even though power lies almost entirely with the municipalities. After years of discussion a ‘Metropolitan Ticket’ is launched that is valid in the public transport of all three cities and also in new infrastructure projects the cities are intensively working together. The case study of the Tri-City Region teaches us that political commitment is not the most important factor for metropolitan development, since the functional integration of the region is occurring even when the political leaders are hampering this process. Perhaps it is just a matter of time that Gdansk and Gdynia forget their traditional role as being each other competitors and that they see the advantages of regional coordination rather than competition. The merge of Gdansk Metropolitan Area with ‘Norda’ (Gdynia’s metropolitan association) within the Gdansk-Gdynia Metropolitan Area might be a good first step, but this step is not foreseen in the near future. As long as the cities refuse to cooperate with each other within one metropolitan area association, the Pomeranian Region has a difficult, perhaps impossible, task to stimulate metropolitan coordination. Their role, however, strongly depends whether the Polish government will finally approve the ‘Metropolitan Act’ as was proposed in 2008. Obviously, it is unknown what could have been achieved already when regional governance in the Tri-City Region would have been developed better already. It seems that a lot of potentials of the metropolitan region are now not fully exploited.

10 Case study Mitteldeutschland

10.1 Introduction to the region

The metropolitan region ‘Mitteldeutschland’ is located in the eastern part of Germany (see Figure 30). The name of the region is perhaps somewhat misleading since the region is no longer located in the central (mittel) part of Germany, but rather in its eastern part close to the border with the Czech Republic and Poland. The region has a historical-cultural name rather than a geographical name.

The discussion concerning the ‘Metropolregion Mitteldeutschland’ has its roots in a former spatial concept; the ‘Saxon Triangle’, which was introduced by the Saxon State Development Plan in 1994. This Triangle comprised a partnership between the cities of Dresden, Leipzig, Halle, Chemnitz and Zwickau. In 2005 federal politicians suggested to enlarge the ‘Saxon Triangle’ by involving the largest cities of the federal states of Saxony-Anhalt and Thuringia as well. At the moment, the metropolitan region Mitteldeutschland consists of eleven cities which are located in three federal states (see Table 4).

The population of the Metropolregion Mitteldeutschland is approximately 2.4 million and the total number of inhabitants of
Polycentric Metropolitan Areas in Europe

Regional challenges

From 1949 till the reunification in 1990 the region belonged to the German Democratic Republic. After the breakdown of the Communist regime, the collapse of non-competitive former GDR-industries temporarily caused severe economic problems. In the last decades, the region rapidly transformed towards a modern market economy. Massive investments in infrastructure have taken place, new firms have been attracted to the region, and new clusters emerged. Despite a successful economic transformation the region is still facing some major challenges. The region wishes to shift towards a more knowledge-driven economy and is therefore giving high priority to science and education in order to create "a large workforce consisting of well-qualified and highly-motivated specialists." (Wirtschaftsinitiative für Mitteldeutschland, 2010). Public expenditure on research and development in Mitteldeutschland is higher than the national average and outstrips countries in Eastern Europe, like the Czech Republic and Poland. With these investments Mitteldeutschland is aiming to become “one of Europe’s most attractive and pioneering industrial regions, combining dynamic growth with a high quality of life.” (Wirtschaftsinitiative für Mitteldeutschland, 2010). During the last decades the region had to deal with a brain drain with highly-skilled people moving towards the western part of Germany. At present, there are not a sufficient amount of jobs available for all graduate students. In economic and demographic terms, Dresden has become one of the growth poles in an otherwise shrinking region. But in comparison with prosperous German cities like Munich, Frankfurt or Hamburg, the position of Dresden is still challenging. According to the interviewees, one of the main challenges of the region is to attract more firms, and especially (inter)national headquarters. In order to attract headquarters or other metropolitan functions it is important to create a strong(er) critical mass. It is a challenge to let the eleven cities function as one large city with critical mass. It is a challenge to let the eleven cities function as one large city with critical mass. It is a challenge to let the eleven cities function as one large city with critical mass. It is a challenge to let the eleven cities function as one large city with critical mass. It is a challenge to let the eleven cities function as one large city with critical mass.

Metropolregion Mitteldeutschland as case study

The Metropolregion Mitteldeutschland has been selected as one of the case studies of EMI’s Knowledge and Research Agenda on ‘Polycentric Metropolitan Areas’. The region is a good example of a fusion type region consisting of a constellation of once rather distinct medium and small-sized cities, which are now becoming increasingly dependent upon each other. The regional cooperation within the Metropolregion Mitteldeutschland is often called a ‘network of cities’ or a ‘network of networks’. It is interesting to analyse how the German cities are functionally, culturally and institutionally integrated and what kind of metropolitan strategy or vision is behind it. The case study is based on in-depth interviews with various key experts in the region, from representatives of government authorities (city of Halle, Leipzig and Dresden), to academics specialized in urban and regional planning as well as representatives of the metropolitan association. Besides interviews, policy documents and academic articles on Mitteldeutschland’s polycentric urban structure have been used to develop this case study. The study discusses the Metropolregion Mitteldeutschland with a particular focus on the cities Leipzig and Halle. It is interesting to analyse how these two cities, located closely to one another, are functionally, culturally and institutionally integrated, and how they function within the broader metropolitan region.

10.2 Strategies for regional cooperation and integration

This chapter discusses the metropolitan development strategies that are in place by describing the formal and informal ways of regional cooperation within the metropolitan region. According to Egermann, polycentric metropolitan regions are expected to “play an important role in spatial development in Germany and in Europe. The question remains unanswered whether these polycentric regions can be building blocks of a metropolitan policy” (Egermann, 2009:277).

National and federal state(s)

Following the policy of the European Union, the German national government supports regional cooperation and the set-up of ‘European metropolitan regions’ across the country. In 1997, after years of discussion, the German government officially acknowledged seven European metropolitan regions in Germany. These regions are seen as the engines of societal (economic, social and cultural) development which ought to con-

Table 4

<table>
<thead>
<tr>
<th>Saxony</th>
<th>Saxony-Anhalt</th>
<th>Thuringia</th>
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</thead>
<tbody>
<tr>
<td>Chemnitz</td>
<td>Dessau-Roßlau</td>
<td>Erfurt*</td>
</tr>
<tr>
<td>Dresden*</td>
<td>Halle</td>
<td>Gera</td>
</tr>
<tr>
<td>Leipzig</td>
<td>Magdeburg*</td>
<td>Jena</td>
</tr>
<tr>
<td>Zwickau</td>
<td></td>
<td>Weimar</td>
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</tbody>
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* = capital cities of the federal states

Since 2004 the cities Erfurt, Weimar and Jena are working together in the ImPuls-Region.
Polycentric Metropolitan Areas in Europe

Polycentric Metropolitan Areas in Europe

tribute to the acceleration of the European integration process (Egermann, 2009). The Halle/Leipzig-'Saxon Triangle' was one of the seven metropolitan regions. The region consisted of five cities: Dresden, Leipzig, Halle, Chemnitz and Zwickau. In first instance, the Saxon Triangle remained a planning concept but after a while the cities started to cooperate by creating a standing working group. The mayors of the cities agreed on a programme of action for the 'Saxon Triangle' metropolitan region and subsequently signed a cooperation agreement outlining closer cooperation in the future. In 2005 the situation changed drastically following a discussion by the prime ministers of Saxony, Saxony-Anhalt and Thuringia. They considered the metropolitan region concept as a special opportunity for the 'Central German' economic area to position itself favourably within the European economic area as a whole. They suggested that the 'Saxon Triangle' metropolitan region should include the cities of Magdeburg, Dessau-Roßlau, Erfurt, Weimar, Jena and Gera as well (see Figure 31). From 2005 onwards there were many discussions about the formal extension of the metropolitan region and how the decision-making structure needed to be organised. Step by step the four new cities were accepted as full members of the metropolitan regions, while the cities of Erfurt and Weimar are still represented by the city of Jena in both the steering committee and the management board. Within the ImPuls-Region, Erfurt, Weimar and Jena are internally discussing issues. This enables Jena to represent all three cities within the Metropolregion. Currently, it is still point of discussion whether or not Erfurt and Weimar will become official members.

The three federal states do not develop or support one integral regional (spatial) strategy for the whole metropolitan region. Consequently, there is less coordination between the spatial plans of the federal states. According to the interviewees, the federal borders remain considerable institutional barriers hampering further regional coordination and cooperation between the cities. Due to the federal borders between the cities Leipzig and Halle it is less likely that these cities will integrate to become a single city-region, although there is a lot of potential. The federal states appear to be hesitant about the Metropolregion Mitteldeutschland. While ministries responsible for spatial planning clearly support the partnership, the federal governments of the three states do not wholeheartedly support the metropolitan region. This is mainly because in some eyes the metropolitan region is considered a pre-stage of unification of the three federal states, which would mean loss of power and competences.

Metropolregion Mitteldeutschland

The Metropolregion Mitteldeutschland is the main driver for regional cooperation between the involved cities. There are, however, strategies for regional cooperation at the city-region level as well. The Metropolregion Mitteldeutschland regards its role as that of “stimulus provider for innovation and sustainable economic development within the entire region”. As a ‘network of networks’ it aims to bring together energy, identities, potential and interests from the economy, science, politics and society (Metropolregion Mitteldeutschland, 2012). In comparison with other German metropolitan partnerships (like in Munich, Stuttgart and Hamburg), the Metropolregion Mitteldeutschland is a small organisation. Only two or three persons work for the coordination office of the region, while in other German metropolitan regions this number is tripled or even quadrupled. The cities pay an annual fee for the coordination office of the metropolitan region. Being part of a metropolitan region is considered to be of strategic and (potentially) financial importance. The management board of the Metropolregion comprises the nine mayors of the member cities. They meet two or three times each year, which enhances the coordination between the cities, builds trust among the partners and creates more commitment to the partnership. The steering group consists of the city planners of the nine cities and they meet about six or seven times each year. Representatives of the eleven cities work together in five working groups, which also include participants from government, industry, science and society.

Workings groups

The themes of the working groups and the
main objectives are formulated by the cities (see Table 5). Generally speaking, the ambitions of the working groups are high; the objectives of each group are then translated into smaller and more concrete projects. According to the interviewees, the working groups do not address the main problems and challenges of the region; they are more focused on quick-wins such as joint publications and marketing and branding activities. Some of the (preliminary) results of the working groups will be discussed in the following chapters.

The city representatives of the working groups discuss progress every six weeks. However, some cities are slightly reluctant to put much effort, time and money into the working groups. This point to the danger of free-rider behaviour of one or more cities. Others are very enthusiastic and try to bring regional cooperation to a higher level. Even though most of the groups have faced some start-up problems, they are now producing promising first results (like joint publications). For various reasons there is a lack of priority amongst the cities for setting up additional working groups or other regional activities.

The working group ‘trans-regional cooperation’ is the result of a national demonstration project (MORO) of the national Ministry for Transport, Building and Urban Development. They recently finished the project ‘Trans-regional partnerships: innovative projects on regional cooperation, networking and shared large-scale responsibility’. Several German metropolitan regions were part of this project and the Metropolregion Mitteldeutschland was one of these ‘model regions’. The aim of this project was to prove that supra-regional partnerships can actually work. The project addressed the question ‘how to generate blueprints and partnerships that “generate growth and innovative capacity for the region as a whole as optimally promote the contribution to the development of all sub-regions in accordance with their individual starting position.”’ (BMBS, 2011:4). The development of a suitable organisational model was one of the projects of the Metropolregion Mitteldeutschland.

To sum up: The German reunification is still fresh in the minds of many. In 1990, after forty years of Communism, the federal states and municipalities received autonomy, which enabled them to determine their own policy. In comparison with the municipalities in the western part of Germany, the eastern part of the country does not have as much of a culture of cooperation. The municipalities in, for example, the Ruhr-area had more time to develop such a culture. Perhaps it is just a matter of time before the municipalities start to cooperate more intensively with each other. Despite the difficult start-up phase Metropolregion Mitteldeutschland experienced, this platform could play a pivotal role in supporting regional cooperation and coordination. The institutional framework of the organisation forces representatives of the eleven cities to cooperate and collaborate with each other at a metropolitan level.

### 10.3 State of integration

#### 10.3.1 Spatial-functional integration

The functional relations between the cities are rather limited due to the large distances between the cities. It is, for example, uncommon to live in Dresden and to work in Magdeburg. The distances between these cities are too extensive for having frequent connections. This might be the reason for the existing duplication of amenities in the region, such as theatres and sport stadiums. People are unlikely to travel to another city to attend a concert when it takes more than one hour. But even when it comes to cities in close vicinity to each other (Leipzig-Halle) one can see a duplication of amenities and living environments. The cities are not used to coordinating such metropolitan functions; they are more used to competing rather than cooperating with each other. This can be explained by the historic backgrounds of the cities and the autonomy they received in 1990 after the German reunification. They are not (yet) willing to give up their autonomy and they do not see the advantages of intensive cooperation and coordination. Leipzig and Halle are both located in different federal states and the federal borders between the cities, to a certain extent, limit further functional integration.

Both cities can offer different business conditions due to different federal financial and subsidy structures. A good example of inter-city competition is how both cities are attempting to attract a new BMW factory (automotive company). When BMW announced that it intends to open a new factory in the region, many cities offered the company a new plot for the building of its factory. Both Leipzig and Halle put much effort into attracting the company by offering the best plots. BMW finally decided to build its factory in Leipzig. Halle consequently ended up with an empty plot of land. It is questionable whether such form of competition between the cities is advisable. The employees of the new BMW factory are likely to live in Leipzig and Halle. So, in theory, it is not that important whether the factory is located in Leipzig or Halle since both cities will still profit. In practice, Leipzig is pleased to have the factory within their municipal boundaries.
Functional relations between the cities vary from commuting, leisure and business relations. The number of traffic jams is very low and even during rush hour the trains between both cities are relatively empty (see Figure 32) – which probably also shows that functional interactions between the cities have not been fully developed. Interviewees did feel that the cities share one regional labour market; people from Leipzig look for jobs opportunities in Halle and vice versa. In order to improve the functional integration within the region, a new infrastructure project is currently under construction with the potential to bring the region closer to each other. This ‘city tunnel’ project consists of a two km railway tunnel connecting Leipzig Central Station to the Bayern Central Station. The tunnel improves the accessibility of Leipzig by rail and creates a better connection between Leipzig and Halle with Chemnitz and Zwickau. This improved infrastructure connection can enhance the functional relations between the cities.

In the case of the airport Leipzig-Halle, the cities are used to cooperating with each other. In order to demonstrate that the airport is a joint project of both federal states, the airport is located exactly on the federal border. Although both cities cooperate when it comes to this project, the amount of efforts put in by each city is rather lopsided. The working group ‘transport & mobility’ of the Metropolregion Mitteldeutschland tries to stimulate a further spatial-functional integration within the region. Until now, the groups are not (yet) very effective as there is strong disagreement about priorities. Both Leipzig and Dresden want to improve their road connections with Berlin. But instead of agreeing on one strong lobby towards the national government for a new connection, the decision-making process has entered an impasse; each city resents the other an improved connection. This is exemplary for the complicated cooperation within certain working groups.

The working group ‘business & science’ presents the region as an innovation know-how centre with outstanding knowledge networks in business and science. With 48 universities and colleges along with well over 100 research centres, the region has a good (knowledge) basis. The practical transfer of knowledge between industry and science is facilitated by numerous networks of excellence and cooperation projects. Still, there is not so much cooperation between the universities in the region. The national government recently challenged regions to create ‘centres of excellence’ and this initiative triggered them to intensively cooperate with each other.

Besides the Metropolregion Mitteldeutschland, the ‘Wirtschaftsinitiative für Mitteldeutschland GmbH’ supports a strong external marketing strategy for the regional economy. The Wirtschaftsinitiative is a private initiative with the objective to promote and strengthen regional competitiveness. Sixty members are part of this organisation (including international private investors such as BMW and Siemens) as well as the cities of Leipzig, Halle, Magdeburg, Jena, Gera and Dessau, the chambers of commerce and the three federal states. In order to make the region more attractive to investors and creative forces the Wirtschaftsinitiative selected eight successful clusters. By promoting these clusters they try to attract more business and highly-skilled people to the region. This is done by, for example, organising excursions to interesting parts of the region and showing the unused potential that can be drawn upon.

8 Since 2011 both organisations are located in the same building which supports short linkages between their activities. They are exploring ways of further cooperation.

8 The clusters of the region are (amongst others): automotive, biotech/life sciences, chemical industry and plastics, food industry, information technology, solar energy, optoelectronics and microelectronics.
The cities seem to be relatively complementary to one another and the differences in economic sectors have actually increased over the last years (Franz and Hornych, 2009). However, it remains unclear to which extent the potential of a complementary economy profile is utilized. Urban actors still struggle with the question how the diversity of economic clusters can be used in the most optimal way.

10.3.2 Cultural integration

The metropolitan region is not characterised by a shared regional identity. People strongly identify themselves with their federal state or the city in which they live. The federal states of Thuringia and Saxony in particular traditionally have a strong sense of pride and regional identity, which may hamper further regional integration. Amongst inhabitants there is little awareness that they would be part of a metropolitan region. Interviewees suggest that a majority of the inhabitants has never heard of the ‘Metropolregion Mitteldeutschland’. Most likely, the former Saxon Triangle was more appealing to them. The brand ‘Mitteldeutschland’, introduced in 2009, is still very new and it takes a while before inhabitants and firms start using it.

In contrast to the limited shared identity among inhabitants is the conviction among firms that this part of Germany requires better external positioning and marketing. They demand action from the government, and organized themselves in the Wirtschaftsinitiative together with local authorities and business chambers. They are striving for a successful development and marketing of the regional economy. Apparently, the key corporations in the region are aware that the fragmented spatial structure and urban system is detrimental to this external positioning. They feel the need to market the region as a single entity.

Here, one needs to consider that the marketing of the region is mainly focused on the external rather than on the internal, which may explain the lack of a regional identity among inhabitants. The strategy of the Wirtschaftsinitiative strongly focuses on attracting new business and economic clusters to the region triggered by the urgency to catch up with other German metropolitan regions. On the longer term joint economic profiling can create a shared regional identity amongst residents as well. All cities have a more or less similar history as former GDR industrial cities, which are nowadays transforming to more knowledge-driven economic clusters such as the solar cluster. This shared identity can create a mutual sense of belonging but for now it is too early to speak of a regional identity.

The working groups of the Metropolregion Mitteldeutschland also try to stimulate cultural integration. The working group ‘culture & tourism’ aims to reinforce the culture of democracy in the region and to promote integration processes by, for example, stimulating integrated cross-border offers for residents and visitors of the region. One of the products of the working group is a travel brochure for the entire region. However, the publication of this brochure led to rising tensions between the cities. Some cities claimed that there was a disproportionate amount of attention paid to certain cities in the brochure. These cities would have liked a more prominent position in the publication. Due to these kind of disagreements it took almost four years before the brochure was finally finished. This example can be considered as exemplary for the cooperation within the five working groups of the Metropolregion Mitteldeutschland.

10.3.3 Institutional integration

From 2005 onwards there were many discussions about the formal extension of cooperation, for example, about veto rights of the new cities. Step by step, the four new member cities were allocated a seat in the management board and the steering committee of the region. This process triggered a new discussion about the name of the partnership. Cities in Saxony-Anhalt and Thuringia (like Jena, Magdeburg and Gera) did not want to cooperate under the label ‘Saxon Triangle’. They proposed the name Mitteldeutschland. Dresden disagreed with this name since the name could potentially harm their relationship with Polish cities as Wroclaw. The name Mitteldeutschland implicitly suggests that if Dresden is located in the central (mittel) part of Germany, Poland would as a consequence be East-Germany. After long debates, all partners finally agreed with the name. Another point of discussion was the location of the coordination office of the Metropolregion Mitteldeutschland. Since the cities could not find agreement they decided to have a rotating office, that is, change the location every two years. The office was firstly located in Leipzig, then in Chemnitz and Dresden, after which it relocates to Leipzig again. Dresden did not complete their two-year term, since the other cities complained that they did not put enough effort in coordinating all activities. The two-year circulation of the office has turned out to not be very efficient. The start-up phases in the different cities and the frequently changing coordinators meant a loss of valuable time and expertise. The management board recently decided that the office will be permanently based in Leipzig.
The strategies for regional cooperation are mainly based on voluntary participation of the cities rather than on decisive powers. The veto right of each mayor complicates the decision-making process of the metropolitan region. In practice it turns out that it is difficult to formulate plans that will be approved by all mayors. The organisational structure of the metropolitan region might change within the coming years since there are proposals to set up an association. This was one of the results of the working group trans-regional cooperation within the ‘Supra-regional partnership’ pilot for the Metropolregion Mitteldeutschland (BMVBS, 2011). It is, however, uncertain whether the city councils will approve this proposal. By giving the Metropolregion Mitteldeutschland a formal status, the city councils might fear losing a certain amount of autonomy.

Another difficult decision that needs to be addressed concerns the role of the counties in the metropolitan region. At the moment, Metropolregion Mitteldeutschland is a network of main cities rather than a network presenting the entire region including the smaller counties. But if all counties join, the cooperation platform will be enlarged from eleven to over one hundred members. This problem of ensuring involvement of counties can be solved by developing city-regions around the eleven main cities, and subsequently having the main cities represent the surrounding counties in their city-region.

The institutional integration within the region strongly depends on the relationship between the cities and the three federal states. After reunification, the three federal states also impedes the institutional integration within the region since they do not want the region to become too important. The mayor of Jena once supported the idea of a common federal state ‘Mitteldeutschland’ and he argued that the metropolitan region is one step in that direction. The federal states as well as the capital cities of these states (Dresden, Erfurt and Magdeburg) do not support the idea of one common federal state since they are afraid of losing their superior position. Rumour has it that these capital cities want to keep an eye on the process and therefore are participating in the metropolitan initiative. The political colour of the cities and the federal governments also impedes the institutional integration. With the exception of Dresden all cities are social-democratic while the three federal states and the city of Dresden are conservative. Because of the political colour of Dresden, the federal states want Dresden to be part of the metropolitan region so they can influence the process that would otherwise be entirely determined by the social-democratic party. This ‘strategic’ position of Dresden can harm the future institutional integration of the metropolitan region. Since Dresden obviously has shown little enthusiasm for the cooperation within the metropolitan partnership over the past few years, and it has been suggested that it would be better for the cooperation if Dresden would no longer be a member.

To sum up: The institutional integration within the Metropolregion Mitteldeutschland, with its eleven cities in three individual federal states, turns out to be complicated. Lengthy discussions took place concerning the name of the partnership, the location of the coordination office and the organisational structure. But perhaps these are just typical problems characteristic for the start-up phase of such initiatives. The five working groups are likely to enhance a stronger institutional integration within the region since they provide a certain alignment for regional activities and cities must necessarily work together in these groups. Still, it is difficult to say something about the success of these working groups since most of the groups have only been up-and-running for two or three years.

10.4 SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Traditional industrial profile of the region (like automotive, chemicals) in combination with various new economic clusters.</td>
<td>• Metropolitan region depends on a varying support of the cities and federal states, and in fact, strongly diverging support for further cooperation and integration.</td>
</tr>
<tr>
<td>• Cooperation in working groups; alignment of (regional) activities.</td>
<td>• Lack of a functional rationale, or at least uncertainty about the extent to which the cities actually form a metropolitan region in practice.</td>
</tr>
<tr>
<td>• Good infrastructure connections between the cities.</td>
<td>• Metropolregion Mitteldeutschland is a network of major cities rather than a network of the entire region including smaller municipalities.</td>
</tr>
<tr>
<td>• Institutional framework of the metropolitan partnership with a management board, steering group, working groups and a coordination office.</td>
<td>• The institutional structure of the Metropolregion is point of discussion (e.g. veto positions of member cities).</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sense of urgency for more regional cooperation, coordination and integration (especially focused on the economy) in order to catch up with other German metropolitan regions.</td>
<td>• Working groups are not addressing the main issues but mainly focusing on quick wins as joint publications and marketing.</td>
</tr>
<tr>
<td>• Strong involvement of the private sector through the ‘Wirtschaftsinitiative für Mitteldeutschland’.</td>
<td>• Free-rider behaviour of cities: some cities only profit from cooperation without putting any effort, time or money in it.</td>
</tr>
<tr>
<td>• Increasing attention for metropolitan development on the economy) in order to catch up with other German metropolitan regions.</td>
<td>• Lack of trade-off mechanisms to enhance regional cooperation and collaboration.</td>
</tr>
<tr>
<td>• Cities have shown that they can take difficult decisions even without the support of the federal states.</td>
<td>• Diverging (hidden) political interests and agendas of the three federal states versus the cities, and among the cities.</td>
</tr>
</tbody>
</table>

9 The Solidarity Pact II provides the financial basis for the advancement and special promotion of the economy of the new federal states until 2019.
11 Rotterdam – The Hague Metropolitan Area

11.1 Introduction to the region

The Metropoolregio Rotterdam-The Hague is located in the south-western part of the Netherlands (see Figure 34). Rotterdam (617,000 inhabitants) and The Hague (500,000 inhabitants) are the main cities of the Metropoolregio together with another 22 small- and medium-sized municipalities. In total, around 2.2 million people live in the metropolitan region. The region is located in the economic heart of the Netherlands where a major part of the gross national product is earned. The region is well connected; there are highways to the other major cities of the Netherlands, being Amsterdam, Utrecht and Eindhoven. Furthermore, an efficient rail network is provided and used with high intensity. A high speed train connects Rotterdam with Amsterdam, Schiphol Airport, Antwerp, Brussels and Paris. International destinations can also be reached from the seaport Rotterdam and Rotterdam-The Hague Airport.

The Metropoolregio is an area with a mix of characteristics and a high diversity: Rotterdam and its surrounding municipalities boast a large sea port with many related industrial and transport activities, while The Hague and its surrounding towns are home to many national and international political and juridical institutions. The city of Delft, which hosts many knowledge-generating institutions, lies right in between them. The Westland area and the area around Lansingerland and Pijnacker-Noorddorp is home to world leading clusters of horticultural businesses, while Zoetermeer is a typical new town that recently profiles itself as a ‘leisure city’ by boasting large leisure facilities (indoor skiing, water rides etc.). Furthermore, there are important clusters in clean technology, medical technology, architecture and design and security.

The Metropoolregio has to operate in a very fragmented institutional structure. The Metropoolregio covers most of the urbanized (hence most important) parts of the Province of South-Holland. Within the Metropoolregio there are currently two regional authorities operational, which fall under the ‘WGR+’ legislation: Stadsregio Rotterdam (including Rotterdam and surrounding municipalities) and Stadsdrecht Haaglanden (including The Hague and surrounding municipalities). The WGR+ regions are currently point of political discussion since there are plans to abolish them in order to cut budgets and reduce bureaucracy. It is, however, still unknown whether these plans will be executed. Realizing that metropolitan governance is still needed if the WGR+ regions will be abolished, the 24 municipalities intend to join forces and continue to cooperate within a larger platform: the ‘Metropoolregio Rotterdam-The Hague’ – from now on referred to as ‘Metropoolregio’ in this report. The city councils, however, have not decided yet on cooperation at a larger metropolitan scale.

Regional challenges

One of the main challenges of the Metropoolregio is to improve the international competitiveness of the region and to increase their contribution to the national economy. In Europe and worldwide metropolitan areas are increasing seen as the right scale to compete. The productivity growth in the South Wing is relatively low...
and much focus is put on generating or transporting high volumes instead of more value-added economic activities (OECD, 2007). Problems concerning congestion, mismatch in the housing market and lack of high-quality education and research and development (R&D) investments are all points of attention that threaten the competitive position of the Rotterdam-The Hague region. At the same time, the Amsterdam Metropolitan Area in the northern part of the Randstad has been outperforming its southern part over the last decade. The acknowledgement of the perceived slowly but steady decrease of the international competitiveness is an important motivation for the cities in the south wing of the Randstad to join forces.

Another challenge the region is facing has a more spatial character since Rotterdam and The Hague are steadily growing towards each other. Housing, retail and office developments (although currently tempered because of the economic crisis), agricultural and horticulture activities, green areas and space reserved for climate adaption lay an increasing claim on the land that is only scarcely available. The Metropoolregio will need to deal with a variety of land use claims that can contradict or harm each other. Another challenge is to deal with the institutional fragmentation within the region. The relatively proximity of cities in the Randstad makes it difficult to define the boundaries of the Metropoolregio. The 24 municipalities do not form a ‘closed system’ since cities as Leiden and Dordrecht can very well be considered to be part of the same region. The Hague has strong relations with Amsterdam as well and on a mega-region scale Rotterdam has relations with Breda and Antwerp. The challenge is to deal with all these different dimensions in a flexible and adaptive way and to cooperate with local, regional, and national authorities on the one hand and semi-public and private actors on another hand. This new cooperation builds on some tradition of cooperation, since there are already several other platforms for cooperation in the South Wing region, and the area of the Metropoolregio corresponds for a large part also with the economic core of the Province of South-Holland. As we see it, the position of the Metropoolregio with respect to these governments and government structures needs to be clear in order to make the cooperation work, and to really tackle the challenges just mentioned.

Metropoolregio Rotterdam-The Hague as case study

Randstad Holland, together with the Ruhr area in Germany and the Flemish Diamond in Belgium, is a well-known example of a polycentric region with four medium-sized cities that are often considered part of one larger mega-city region. Dutch planners have for decades wavered between the option of either positioning the Randstad Holland as the right scale for metropolitan development, or focus on its North Wing (Amsterdam, Utrecht) and South Wing (Leiden, The Hague, Delft, Rotterdam, Dordrecht and Gouda) separately. At this moment, opinions are strongly in favour of a focus on the both wings of the Randstad since this would reflect daily urban systems better. This was also underpinned by studies on functional coherence within the Randstad which showed that the both wings were more appropriate units for metropolitan cooperation than the Randstad as a whole (RPB/PBL, 2006). It is interesting to analyze how Rotterdam and The Hague are joining forces at the metropolitan level since the metropolitan initiative developed in a fast pace recent years.

Input for the case study is generated during a roundtable discussion attended by representatives of the local and regional authorities. Policy documents and (academic) papers about the region have also been used for this study. Furthermore, EMI researchers attended the ‘Metropoolregiodag’, a conference organized by the Metropoolregio to inform all politicians in the region about the progress of regional cooperation. Another aim was to create a stronger commitment amongst all involved actors.

11.2 Strategies for regional cooperation and integration

This paragraph discusses the strategies that foster regional cooperation and integration at the metropolitan level. Within the Metropoolregio, a range of formal and infor-
Polycentric Metropolitan Areas in Europe

In the Netherlands, provinces are a directly democratically chosen regional layer of government dating back to the late Middle Ages. The Province of South Holland has a coordinating role in various policy spheres, but its most notable activities are in the field of spatial planning. The province makes territorial structure plans in principle, not binding for the municipalities, but in case municipalities make local plans that contradict the provincial plans, the province is allowed to override municipalities and make ‘integration plans’. To a certain extent, the province is responsible for infrastructure developments, like contracting the public transport operators within its territory with exception of the WGR+ regions. As will be mentioned more in detail in paragraph 3.3, the Province of South-Holland is looking with some suspicion to the Metropoolregio initiative, as the metropolitan region covers most of the urbanized (hence most important) parts of the province (see Figure 35).

The territory of the province contains two WGR+ regions; the Stadsregio Rotterdam includes 15 municipalities and the Stadsgewest Haaglanden encompasses 9 municipalities. Their main tasks lay in coordinating environmental, economic and spatial planning; and to allocate budgets for youth care, infrastructure and transport (BZK, 2010). For the latter they receive grants from the national government and they have the same tasks and responsibilities as the Dutch provinces. Additional budget from both the national government and contributions from the participating municipalities make sure these regions are able to operate and finance their coordinating activities in environmental, economic and spatial planning. The Stadsregio Rotterdam and Stadsgewest Haaglanden are not separate layers of government as the responsibilities are carried by the individual municipalities, while the Province of South-Holland and the national government are the overarching layers of government.

The WGR+ regions are used to cooperate with each other since they are located in each other’s proximity. They have to cooperate on issues such as public transport since busses, trams and light-rail connections are almost everywhere crossing the border of the city-regions. The RandstadRail is the most notable cooperation project. Stadsgewest Haaglanden and Stadsregio Rotterdam are strong supporters of the Metropoolregio, partly because of the fact that there already is so much interaction between the two territories, partly because regional cooperation between the two areas needs to be maintained if the WGR+ regions will be abolished.

Informal regional strategies and policies

In the Netherlands there is a long tradition of voluntary informal collaborations at the scale of the Randstad, the North Wing and South Wing. The ‘South Wing Platform’ is a good example of informal ways of cooperation and coordination. The platform is coordinated by various partners amongst others the Province of South-Holland, the Stadsregio Rotterdam, Stadsgewest Haaglanden, Holland-Rijnland (cooperating municipalities around Leiden), Midden-Holland (cooperating municipalities around Gouda), Drechtsteden (cooperating municipalities around Dordrecht), and the cities of Rotterdam and The Hague. The South Wing platform has a focus on coordinating economic policies, urban/green development and transport planning. The platform strongly focuses on a transit-oriented development strategy of the region. The project ‘StedenbaanPlus’ aims for a concentration of urban developments around public transport-systems. It should ensure the harmonisation and implementation of the spatial development policies of the participating cities and regions, while at the same time respecting the provincial plans.

From 2010 onwards, the Metropoolregio has taken off in a fast pace. Once started as an informal cooperation between several cities on a project-basis, the Metropoolregio is nowadays a platform with strategies, policies and a proposal for a legitimate institutional structure. The Metropoolregio is not a new layer of government, but depends on the voluntary efforts of the participating municipalities. The individual councils of the participating municipalities all appoint a representative for the daily management of the Metropoolregio. The tasks that flow from the activities will be managed by the various departments from the municipalities. In December 2011, the mayors of Rotterdam and The Hague presented a regional cooperation strategy for the Metropoolregio. Focus of the document is to stimulate cooperation in and integration of the region, thereby providing inhabitants and firms in the region with more opportunities (Metropoolregio Rotterdam Den Haag, 2012b). It is the ambition of the Metropoolregio to work on a sustainable and international area, with an internationally competitive business climate. The document identifies three strategies to foster the process of metropolitan development within the region:

The first strategy is to make better use of the daily urban system in the region. Every day approximately 500,000 commuters are travelling around in the region to work, sport or leisure. It is the ambition of the Metropoolregio to improve the connectivity of the region, for example by making sure all important assets of the region are accessible within 45 minutes. The plan of the national government to assign a special transport authority to the Metropoolregio is still point of political discussion. But in case this authority will be established, this implies a certain budget granted by the national government to implement the authority and contract public transport operators. The transport authority will also make plans for road projects. The second strategy of the Metropoolregio is to make better use of and invest in the knowledge and innovation potential of the region. As stated before, the region consists of various economic sectors and many knowledge and research institutes are located in the region. The third strategy is a better exploitation the amenities and services that the region offers. Hereby it is important to put the metropolitan region on the mental map of people and firms so they can make optimal use of the amenities, services and green offered in the region.

In order to implement these three strategies, each strategy is linked to pillars and within
each pillar concrete actions are listed (see Table 6). Cooperation within these pillars is driven by the needs of all societal stakeholders and the need for more efficiency. Within each pillar representatives of the local and regional authorities are joining forces to translate the strategies into policy and practice. For each pillar, two politicians from the region have been made responsible, in order to make sure that there are ‘problem-owners’ and to prevent that issues remain unaddressed. The (voluntary) cooperation within the seven pillars is still in its infancy, so it is difficult to predict the success of these attempts of regional cooperation, although the regular meetings of the pillar-groups look promising.

The future of the Metropoolregio largely depends on the political decision to abolish the WGR+ regions. At the moment, it is still unknown what the national government will decide. Currently, there are two political scenarios; in the first scenario the WGR+ regions remain to exist and the regions will merge into the WGR+ Metropoolregio. In this case, the two regions will merge their budgets and no major changes will appear with regard to their current tasks and responsibilities. In the second scenario the WGR+ regions will be abolished and the municipalities continue cooperation within the Metropoolregio with the transport authority as its fundamental pillar. In this scenario, the region will receive an annual funding of the national government specifically for organizing regional transport. Informal cooperation regarding spatial planning and other matters will continue as well. In both scenarios the municipalities pay a relatively small part of the budget which is likely to decrease rather than increase within the coming years.

### 11.3 State of integration

#### 11.3.1 Spatial-functional integration

The spatial structure of the region is dominated by the two city-regions of Rotterdam and The Hague which largely corresponds with the boundaries of Stadsgewest Haaglanden and Stadsregio Rotterdam. The city-region of Rotterdam consists of Rotterdam and the neighbouring municipalities (such as Capelle a/d IJssel, Schiedam and Vlaardingen) that are morphologically part of the Rotterdam conurbation, and that do not have a strong, characteristic economic profile. The same goes for The Hague, where municipalities like Rijswijk and Leidschendam-Voorburg are physically and functionally closely connected to the city. The identification of both city-regions makes the functional relations between cities such as Capelle a/d IJssel (Rotterdam) and Rijswijk (The Hague) not so obvious. Other municipalities (like Delft, Westland, Zoetermeer, Lansingerland and Pijnacker-Nootdorp) can be considered part of both city-regions. They have functional ties with both city-regions and have more characteristic economic activities.

The ambition of the Metropoolregio is make better use of the potentials within the region. The second and third strategy, as introduced in the previous chapter, should make sure that potentials within the spheres of regional economy, knowledge, spatial development and cultural amenities are better coordinated. Because of these efforts, the functional linkages within the Metropoolregio can be strengthened as well, both between the larger cities and between the smaller municipalities of the city-regions. As stated before, the region is not a closed daily urban system, since sig-
nificant commuting patterns are crossing the borders. Consequently, it is important for the Metropoolregio to facilitate and coordinate these functional linkages at a regional scale.

**Transport and mobility**

Every day around 500,000 people are traveling crisscross the metropolitan region by public transport, by car and by bike. Between Rotterdam and The Hague there is a dense network of road and rail infrastructure. In order to facilitate strengthened functional linkages, the Metropoolregio aims to increase the capacity of infrastructure and to reduce travel times within the area. The RandstadRail, a light rail connection between Rotterdam and The Hague, is an important project that enhanced the functional integration of the region. The Stadsregio Rotterdam and Stadsgewest Haaglanden jointly cooperated to transform a formerly national rail line from The Hague to Zoetermeer and Rotterdam into a light rail connection that connects the central rail stations of both cities (see Figure 36). Both public transport operators of Rotterdam and The Hague needed to make use of part of this line, which required extensive (technical) cooperation. The RandstadRail service became operational between 2006 in 2011 and the results are very positive, with large increases in passengers compared to the former national rail line. Many more people now make use of it, thereby helping to further integrate the region.

During rush hour, the capacity of the road infrastructure is insufficient resulting in many traffic jams. There are plans to improve this by creating more highways (see Figure 36). Most notable is the extension of the A4 highway from The Hague, via Delft towards Rotterdam. This plan got in a political impasse from more than fifty years since the highway negatively affects the green areas of Midden-Delfland (area in-between Rotterdam and The Hague). Despite these environmental concerns, national politicians recently decided to extend the highway based on a proposal developed by the regional authorities under supervision of the Province of South-Holland. The extension of only 7 km of high-way will be finished in 2015 and is likely to have a positive impact on the further functional integration of the region. Another major infrastructure project is the expansion of the rail capacity between The Hague and Rotterdam.

Politicians and policy-makers in the region continue to work intensively together on issues concerning transport and mobility. Even when they do not know whether the plans of the former national government to assign a transport authority to the metropolitan level will be implemented. With a transport authority it would be easier to coordinate all the different (local) transport services, but the example of the RandstadRail shows that the transport services are also able to cooperate with each other without such an overarching authority.

**Economic competitiveness**

One of the strategies of the metropolitan region is to make better use of, and invest in, the knowledge and innovation potential of the region. The region consists of a diverse pattern of economic clusters and sectors varying from the port-related industries and services in Rotterdam to the governmental services in The Hague. It is the objective of the metropolitan region to make optimal use of the complementarity of the economic sectors within the region. Complementarity is considered to be more efficient and more competitive, since it leads to diversification and avoids the duplication of services. Moreover, the Metropoolregio aims at generating extra spinoff by better connecting the universities and other educational institutions to the various economic sectors and create triple helix constructions. Recently, the Leiden University (with a campus in The Hague), Erasmus University Rotterdam and Delft University of Technology have put forward their intention for closer collaboration. The Schools of Arts of Rotterdam and The Hague decided to merge, since they have the idea that they can offer a better quality together than alone. The schools will intensively start to cooperate with each other, for example by exchanging teachers and a joint lobby towards the national government for more (art) subsidies. The diversity in the region offers opportunities for spin-offs between different economic sectors. For example, a spin-off firm from the Delft University of Technology could do work (or research) that benefits the horticultural clusters in Westland and Lansingerland, settle in the harbour area of Rotterdam and benefit from the patent registration knowledge available in Rijswijk and The Hague. The diversity of

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**Figure 36** Proposed and planned projects to improve the accessibility of the region

![Berekbaarheidspakket ZuidVleugel](Source: Metropoolregio Rotterdam-Den Haag, 2012)
economic activities within the Metropoolregio can result in innovations within and between economic sectors.

However, a study by the predecessor of the Netherlands Environmental Assessment Agency from 2006 showed that business relations between The Hague and Rotterdam are not as fully developed as expected, based on the mass of both cities (RPB/PBL, 2006). This ‘underachieving’ could have to do with the differing economic profiles of both cities/city-regions boast: political-governmental institutions in/near The Hague do not have much in common with harbour and transport related activities in/near Rotterdam. It suggests that we need to move away from an understanding of complementarity as being different, but related. This apparent lack of understanding of complementarity as just being different to an understanding of complementarity as being different, but related. This apparent lack of ‘relatedness’ might mean that firm linkages between Rotterdam and The Hague will remain limited. The firms located in the sea-port of Rotterdam are very often more connected to related firms in Dordrecht and Antwerp rather than The Hague. Vice versa, the firms and institutions in The Hague might be more connected to the service-oriented cities Leiden and Amsterdam. This example is indicative for the multi-scalarity of the metropolitan region. It might mean that the Metropoolregio is more about integrating the labour market, the housing market and the market for services and amenities than that it should foster inter-firm linkages on a large scale.

**Diversity in the region: significant choice of housing, amenities and landscape assets**

The third strategy of the metropolitan region is to fully exploit the wide diversity in amenities, services and landscape assets of the region. The diversity of the region offers an attractive and significant choice for people and is an important indicator of quality of life. The Metropoolregio considers landscape assets also as an important indicator of quality of life. This explains why ‘green’ is one of the seven pillars of the metropolitan strategy. The cities, in close cooperation with the province, want to keep the green areas open, enhance the agricultural use of the landscape and support an efficient and effective maintenance of the landscapes. Moreover, they jointly promote the leisure function of these areas, for example by improving the cycling lanes in order to improve the accessibility of the areas. Also amenities, cultural services, sport- and leisure activities determines the (inter)national attractiveness of the region. Although the region offers a widespread variety of theaters, cinemas and cultural events, common developments can further enhance the attractiveness and quality of them and prevent duplication of similar events.

With regard to the housing market, the Metropoolregio wants to match the demand and supply on the regional housing market by coordinating the housing programs of the municipalities. A wide variety of living environments offers consumers a significant choice and has a positive influence on the attractiveness of the region. At the scale of the city-regions, the municipalities make already such agreements about, amongst others, the spread of different types of housing or amount of office space across the region. The question remains what the right level of scale is for coordination and cooperation on the housing market as the metropolitan scale might be too comprehensive.

**11.3.2 Cultural integration**

The external (international) marketing strategy of the Metropoolregio is important to promote the economic diversity of the region and the region’s knowledge-driven and innovative potential. At the moment, various organisations actively promote various parts of the Metropoolregio area. For example the West-Holland Foreign Investment Agency (WFIA), which promotes the area of The Hague, Westland, Zoetermeer, Lansingerland and extends it to Leiden. The Rotterdam Investment Agency (RIA) is responsible for the branding and marketing of the city of Rotterdam and immediate surroundings. The presence of various organisations within the Metropoolregio is seen as a positive thing: “Cooperation in promotion and acquisition offers mutual opportunities, but at the same time some degree of competition is an incentive for providing the best offer to organisations settling in the region.” (Metropoolregio Rotterdam Den Haag, 2012b). Both organisations work together based on a covenant signed for the period 2010-2014. Within the Metropoolregio, cities are busy coordinating the different cultural activities and to promote each other’s events. Rotterdam supports, for example, The Hague to become Cultural Capital 2018 while The Hague on their turn supports Rotterdam in its bid for the Olympic Games of 2028 (in cooperation with Amsterdam).

The expectation is that the external marketing strategy will ‘trickle down’ to citizens on the long run. There is not regional identity in the Metropoolregio since identities are very much attached to the two largest cities Rotterdam and The Hague, while also Delft has a distinct identity. Suburban municipalities like Rijswijk or Wassenaar (near The Hague) or Capelle a/d IJssel (bordering Rotterdam) are predominantly culturally
linked to their larger neighbour rather than the broader region. The inhabitants of Rotterdam are proud of their hands-on mentality, which is linked to the industrial and harbour related history of the area. The Westland area is a distinct area with a high degree of entrepreneurship in horticulture and a strong sense of community. There is no intention that the citizens call themselves inhabitants of the Metropoolregio, but it is important that they see the advantages of a strongly integrated region. The region offers them a broad choice of amenities and services. The main objective of the pillar group ‘culture’ is to make the advantages of the region visible. For example by introducing a ‘metropool-card’; a discount card for cultural amenities in the region. Another tool to strengthen the regional identity is the bundling of the magazines of the two WGR+ regions in a new magazine named ‘Metropoolregio Rotterdam Den Haag’. This is primarily targeted to politicians and civil servants within the area and emphasizes the need for cooperation among politicians and policy makers in the area. Another step to create a joint regional identity is the renaming of the airport from Rotterdam Airport into Rotterdam The Hague Airport (see Figure 38). This may appear as a symbolic action at the first sight, but is at the same time a powerful message to the public at large that both cities belong together.

11.3.3 Institutional integration
Various joint projects and policies (such as the RandstadRail, the Metropool-card and the joint efforts to keep the area between Rotterdam and The Hague green) has enhanced the institutional integration within the region. From 2010 onwards, the process of institutional integration accelerated, triggered by the national discussion about abolishing the WGR+ regions and the quest for an authority that covers the metropolitan scale (including its daily urban systems) and is capable to deal with certain tasks and responsibilities in return for significant budgets.

Political leadership
The mayors of Rotterdam and The Hague played a catalytic role in the metropolitan initiative. Without the strong political commitment of these political leaders, the current intensively cooperation between cities would be less likely. The mayors both underline that cooperation and coordination is needed to remain competitive in today’s globalizing world. The mayors of Delft, Lansingerland, Westland, Vlaardingen and Capelle a/d IJssel are also very supportive to the metropolitan region. Noticeable is that there is less political commitment amongst the politicians of the smaller participating municipalities. They fear that the local councils will be overruled by a dominant metropolitan authority and that a further integration means that ‘big city problems’ (like crime, pollution) will be exported to their municipality. Until now, the Metropoolregio is mainly an initiative of the larger municipalities, and the smaller municipalities have the feeling that they may get less out of the cooperation and might lose their influence. In order to get more support of the smaller municipalities more prove of the added-value of the metropolitan region is needed. Hereby it is important to make clear how they can benefit from the Metropoolregio. Together they should define ways how they can improve the competitive position and the business climate of the region since this is of importance for all cities. Defining a ‘common denominator’ could tie all involved stakeholders together.

Dealing with multi-scalarity
The metropolitan region operates within a densely populated area that extends to Leiden, Dordrecht, Gouda, Breda, Amsterdam, Utrecht and on a larger scale to Antwerp. The 24 municipalities do not form a ‘closed system’ since The Hague has strong relations with Leiden and Amsterdam while Rotterdam is more focused on cities as Dordrecht and Antwerp. Consequently, there is not one appropriate spatial scale of cooperation. There is a tension between looking inward to the participating municipalities and outward, which could cause a status quo in the development of the metropolitan region. In order to deal with the multi-scalarity of the region, the Metropoolregio introduced a three-ring-model that can deal with the different levels of institutional integration (Metropoolregio Rotterdam-Den Haag, 2012b):

1 Mandatory cooperation between the 24 cities whereby budgets, tasks and responsibilities are shared and designated (for example the transport authority or investments in green spaces).
2 Mandatory cooperation and joint decision-making of the 24 cities without shared budgets (for example with regard to programming real estate; housing, offices, retail, business parks).
3 Voluntary cooperation between certain municipalities and business, knowledge-

Figure 38 Rotterdam-The Hague Airport and the Randstadrail

Source: Shutterstock ID 1787965
Source: Shutterstock ID 6504124
and research institutions which are not part of the metropolitan region.

In the third ring the Metropoolregio can cooperate with private sector actors, universities, semi-public organisations within a triple helix construction. It enables the region to take a central position in society by bringing various actors and initiatives together. In this way, they can make optimal use of the actors and their ideas and activities. In principle, the three-ring-model provides a way to incorporate other partners in the process. Moreover, it is clear for all partners in which cases there are shared budgets, tasks and responsibilities. The model is still point of political discussion since not all municipal councils have approved it yet. Therefore, it is (yet) unknown how this model will work in practice, but it can be seen as a good example of institutional integration as the model offers opportunities for different ways of (in) formal cooperation.

**Relation province and metropolitan region**

The relationship between the metropolitan region and the Province of South-Holland is precarious. Although the province supports a further institutional integration within the region, they are not enthusiastic about assigning the transport authority to the Metropoolregio. Most likely the province is afraid to lose its competencies and its coordination role in this field. The Metropoolregio covers a major part of the province in terms of population and in terms of economic sectors. Nevertheless, the province remains the main driver for coordinated spatial development. Together with the resources of the province, the actors could steer the coordinated efforts of the Metropoolregio in a better way.

In recent years, the metropolitan initiative has taken off in a fast pace. The cities defined ambitions, strategies and objectives in seven different pillars (with often several subdivisions). It can be questioned whether the scope of the Metropoolregio is not too broad. All the different initiatives could stall the process and could result in bureaucratic and ineffective decision-making as long as all 24 city councils have to agree with it. This is a danger since some of the smaller municipalities are questioning the added value of the Metropoolregio. Noticeable is the shift from a project-oriented form of cooperation towards a more institutionalized way of cooperation with difficult discussions about democratic legitimacy and shared budgets, tasks and responsibilities. According to the interviewees, the institutional legitimacy of the Metropoolregio is tied to the content of the metropolitan agenda. It is the content of this agenda that determines the action points, the way of cooperation and the use of budgets. At this moment, the pillars are still in its infancy and it is uncertain how they will work in practice. First, the metropolitan plan for the region needs to be adopted by the individual city councils. The coming years will learn us whether the metropolitan strategies of the Metropoolregio were effective.

**11.4 SWOT analysis**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>• Strong diversity in terms of housing, amenities, retail, leisure activities, and services</td>
<td>• Competitive position of the region is under pressure</td>
</tr>
<tr>
<td>• Already strong functional, cultural and institutional integration</td>
<td>• Branding of the region is still in its infancy</td>
</tr>
<tr>
<td>• Catalyst role of the mayors of Rotterdam and The Hague</td>
<td>• Lack of critical mass to offer high-end amenities and services in the region</td>
</tr>
<tr>
<td>• High degree and tradition of (in)formal cooperation. Metropoolregio can build on earlier cooperation at the scale of both city-regions</td>
<td>• Multi-scalar context of the metropolitan region; there are major overlaps with cities close by (Leiden, Dordrecht) and further away (Amsterdam, Breda, Antwerp) that interfere governance arrangements and cause fragmented governance patterns.</td>
</tr>
<tr>
<td>• Cooperation is made visible for citizens: Rotterdam-The Hague airport, RandstadRail, Metropoolpas</td>
<td>• Sensitive relationship between the Metropoolregio and the Province of South-Holland</td>
</tr>
<tr>
<td>• Strong commitment between actors to prevent green spaces in order to keep the region attractive (quality of life)</td>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• If the WGR+ regions will be abolished, the Metropoolregio can take over. The transport authority could significantly strengthen the position of the Metropoolregio, because specific financial resources need to be managed.</td>
<td>• Uncertainty with regard to the future status of the WGR+ regions. If these continue to exist, the status of the Metropoolregio may be harmed.</td>
</tr>
<tr>
<td>• Close proximity of all cities and population density is beneficial for creating one critical mass</td>
<td>• The necessity for cooperation and benefits of integration is not clear to smaller municipalities within the Metropoolregio, which could lead to dwindling support</td>
</tr>
<tr>
<td>• Metropoolregio could benefit from increased cooperation or even merging of the two investment agencies that are currently active</td>
<td>• Identities of citizens are more likely to remain attached to Rotterdam, The Hague or Westland, which could be reflected in local politics, hence could hamper local support.</td>
</tr>
<tr>
<td>• Cooperation/coordination between the knowledge institutions and the economic clusters (triple helix) can increase links between businesses and knowledge institutions and increase competitiveness</td>
<td>• Lack of relatedness of economic sectors could hamper functional integration of the Metropoolregio</td>
</tr>
<tr>
<td>• High attention for improving accessibility and the relationship with urbanisation (RandstadRail, South Wing, transport authority)</td>
<td>• The Metropoolregio has taken off in a fast pace, with ambitions on many policy areas (seven pillars with sometimes subdivisions). Too many initiatives in too many areas could stall the process.</td>
</tr>
<tr>
<td></td>
<td>• Strong dependence on the political leadership of the two mayors of The Hague and Rotterdam may turn into a threat when new mayors have a different agenda.</td>
</tr>
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<td></td>
<td>• Continued discussions about governance aspects could draw attention away from concrete projects and policy initiatives together with other institutions (triple helix).</td>
</tr>
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</table>
11.5 Conclusions

In recent years, the metropolitan initiative in the South Wing of the Randstad has taken off in a fast pace. The involved cities and city-regions defined strategies, policies, inter-municipality working groups and a proposed institution structure in just a few years. Although the metropolitan initiative is still in its infancy, it created much energy amongst the share- and stakeholders. This can be explained by the fact that the basis for further region integration was already there since the region is building on the already existing functional, cultural and institutional relations. The strong political commitment can be explained by the catalyst role of the mayors of The Hague and Rotterdam. Smaller municipalities have a relatively reluctant attitude towards the Metropoolregio. To create more support amongst these municipalities it would be important to discuss with them how they could benefit from a further functional, cultural and institutional integration of the region. By involving them in the debate they can influence the metropolitan agenda and they feel more represent by the metropolitan authority.

Functional – The metropolitan region is functionally integrated in terms of the labour market, housing market, business relations and amenities. It is the strategy of the metropolitan region to make better use of the opportunities offered by the daily urban systems within the region, by including a variety of stakeholders. Since these daily urban systems are often crossing the borders, the Metropoolregio also has to cooperate with other cities, regions and provinces. On paper the three-ring-model seems to a good instrument to deal with the multi-scalarity of the region, but it is unknown how it will work in practice.

Cultural – In terms of cultural integration, several initiatives and decisions have promoted the metropolitan region (inter)nationally, such as the renaming of the airport and two investments agencies. It is not the ambition of the Metropoolregio to create one regional identity, but they want the region to be part of the mental map of its inhabitants and firms. They would benefit from taking into account all the opportunities the region has to offer them.

Institutional – Further institutional integration towards a metropolitan authority is currently point of political discussion. The Metropoolregio published an ambitious program with seven different pillars. This enthusiasm brings along the danger that the focus shifts from specific issues or projects to cooperation in itself. It is questionable whether it is necessary to cooperate with all cities in all pillars. To prevent the process from becoming a bureaucratic and inefficient decision-making process, it would be wise to focus on the aspects that are of high importance for the metropolitan region.

The coming years will tell us to what extent the ambitions and strategies of the Metropoolregio will be achieved and how the cities operationalised the various objectives. The decision of the national government whether or not to abolish the WGR+ regions and whether or not a transport authority will be assigned towards the metropolitan level are important decisions that are likely to have a significant impact on its further metropolitan development. Therefore, it is important that the involved share- and stakeholders stayed focused on the content of cooperation. Otherwise there will be the danger that the process of further functional, cultural and institutional integration stalled in lengthy political discussions and conflicts of interests.
12 Synthesis case studies

This section discusses the main findings of the six case studies. In line with the case studies it is divided in the (spatial)-functional, cultural and institutional dimension of integration, but first the metropolitan strategies and policies will be discussed.

12.1 Metropolitan development strategies

Metropolitan initiatives can be find all across Europe. Part of the explanation is also the increasing attention of the European Union towards metropolitan areas. Although various reasons were given why the cities are developing a metropolitan development strategy or policy, they all identify ‘to improve international competitiveness’ as a main motivation, which goes hand-in-hand with the increasing awareness that metropolitan areas are the right scale to compete internationally. The metropolitan development strategies are focusing on fostering cooperation and coordination at the regional scale in order to become economically more competitive.

The metropolitan strategy of the Metropoolregio Rotterdam-The Hague is by far the most detailed one. They defined three strategies linked to seven pillars that are of importance for the region. In contrast with the other case studies cities, they argue that the metropolitan region is already there, and functioning as a daily urban system, but that the potentialities of this are not sufficiently exploited. One of the strategies it to facilitate the daily urban systems in the region better and improve the region’s connectivity and accessibility. Also the metropolitan strategy of Linköping – Norrköping is well developed, and striking is the urgency felt among stakeholders to exploit the benefits of the shared critical mass of both cities.

The metropolitan development strategies of Porto and Milan are strongly focused on the external branding or marketing of the region. For the Tri-City Region and Metropolregion Mitteldeutschland the main trigger is the national attention for metropolitan areas. By setting up a metropolitan authority the region is more likely to receive additional funding.

There appears to be a difference in perspective between these cases and the Dutch and Swedish case. The latter are much more focused on exploiting internal potentialities that are present, while the other four are seeking to exploit external opportunities that may arise. Obviously, there is a mixture of both in all six cases, but there are striking differences in focus.

12.2 Spatial-functional integration

Citizens and firms increasingly make use of the opportunities offered at a regional scale, even without supporting policies from the various cities that make up the region. With exception of the case of Mitteldeutschland, most metropolitan areas are functionally integrated in terms of labour market, (higher) education, and the use of high-end services and metropolitan functions. The extent of integration is influenced by the size of the cities and distance between them; the smaller the size of a city and the more the distance between the cities, the less integration within the region, very much
as predicted by Newton's law of gravity. Consequently, polycentric metropolitan regions like Linköping-Norrköping and Mitteldeutschland are less integrated in comparison with metropolitan areas like Rotterdam-The Hague and Milan, which on their turn appear less strongly integrated than the Polish Tri-City Region and Porto.

Based on the case studies one can conclude that the main drivers behind (further) functional integration are physical connections (infrastructure; transit systems) and complementarity. One cannot emphasise enough how important good connections between the cities are in order to exploit the benefits of critical mass.

Infrastructure and transportation are the condition sine qua non to enter the process of metropolisation, and hence reap the benefits of agglomeration in a network of cities. New or improved infrastructure connections foster both functional integration, cultural integration and institutional integration. The cases of the Tri-City Region, Rotterdam-The Hague and Porto illustrate the importance of a light-rail for further functional integration, and the way hospitals are made more complementary in Sweden, hence fostering integration. The latter is an important issue to emphasise: it is the combination of complementarity and integration that yields enormous potential for polycentric metropolitan areas.

12.3 Cultural dimension
Perhaps due to rather strong levels of spatial-functional integration in many of our cases, many inhabitants cognitively consider themselves part of the wider (polycentric) metropolitan area, while at the same time they feel much more attached to their own city. In metropolitan areas where a large central city dominates the metropolitan area the cognitive effect was quite strong. Often this effect is fostered through symbols that unite a metropolitan area, such as for instance a famous sports team in the central city. Local identities (often tied to individual cities) are omnipresent, but generally do not appear to stand in the way of awareness that the scale of the larger metropolitan areas provides many opportunities for citizens and firms. Our impression was that politicians often feel reluctant to engage in regional co-operation because of their perception of strong local identities standing such co-operation in the way. Yet, it appears that the spatial behaviour of people and firms is often already on a higher scale, and as long as ‘regional identity’ (cognitive) and ‘local attachment’ (affective) are not confused, it should not stand such co-operation in the way.

This leads to the conclusion that it is easier for an incorporation-type metropolitan area to develop a coherent external/internal branding/marketing strategy for the entire region that is supported by the surrounding cities as well. The Porto metropolitan area is a good example in this respect since the city combines the urban amenities of the central city with the rural amenities of the Douro region. Indeed, most metropolitan areas with a balanced pattern of settlements (fusion-type) do not have such integrated branding strategies, but a strong and historically institutionalised regional government (like Östergötland for Linköping-Norrköping) can overcome this.

Strategies promoting a regional identity are also more externally (business) oriented than internally towards the citizens and existing firms within the region. The implicit hope of politicians and policy makers is that the effects of an externally oriented branding policy will gradually ‘trickle down’ to the inhabitants and firms within the metropolitan area. It is not the idea that the inhabitants should take on a regional identity, but rather that they develop a regional ‘mental map’ which enables them to make better use of possibilities offered in the whole metropolitan region.

12.4 Institutional dimension
For coherent metropolitan policies and coordination, it was found that some basic institutional characteristics are important. First of all, the relationship with the overarching regional government is highly important. A regional government with many competences and a strong metropolitan focus can be very beneficial for the formation of coherent policies on the metropolitan level. On the other hand, if metropolitan areas are part of several regions, or if the region doesn’t have a metropolitan focus nor much competences, the municipalities of the metropolitan area are left to coordinate matters themselves. Second, the differences in importance of municipalities within metropolitan areas are important. There is a tension between larger and smaller municipalities in that the dominating larger ones often tend to follow their own agendas, which is party caused by the act that the agendas of smaller municipalities are sometimes strikingly different. Particularly in Milan and to a lesser extent Porto, it was evident that the central city often operates independent from other municipalities. This may be harmful when issues that require a regional response are at stake.

Second, it appears that institutional cooperation is highly dependent on political leadership and a culture of cooperation. For the Metropoolregio Rotterdam-The Hague the mayors of both cities played a catalyst role. Also, in metropolitan areas where a culture of cooperation is more developed, intermediary bodies that cut across policy sectors and municipalities are more capable of organising policy coordination. However, this
can sometimes lead to the danger of ‘over-institutionalisation’, in which metropolitan coordination efforts becomes a goal in itself for politicians and policy makers.

Of course there are other matters that influence institutional integration. Problems related to unbalanced regional developments, the economic crisis and international competitiveness increasingly make politicians and policy makers aware of the fact that regional coordination and cooperation is necessary. Nevertheless, politicians are still appointed by the local population which, together with a perception of historically grown inter-city rivalry, leads to an emphasis on short-term, locally coloured political agendas. Without hard evidence on how decisions taken for ‘the regional good’ trickle down locally, and how regional performance affects local performance, also on the long run, it is hard to overcome this gap between regional issues and local administration.

We saw that in case cities were complementary, it was easier to develop regional coordination and cooperation. However, this does not mean that co-operation between complementary cities is necessarily more fruitful. Perhaps on the contrary, potential gains seem also large in the case of co-operation between more homogeneous cities, since the issues of duplication and competition arise more prominently.

One policy sector that made case for regional cooperation and coordination point-blank is the development of new urban areas. Without regional coordination, local building and housing policies may create regional imbalances and oversupply. Opportunities to build or maintain regionally important assets (new housing, shopping malls, and airports) are eagerly seized by individual municipalities, which have led to severe oversupply of such new urban amenities. Porto is a very clear example, but it basically also holds for the other metropolitan areas where high vacancy rates in the offices sector and on business sites are at least partly due to a lack of coordination. The economic crisis has made the consequences particularly clear. Finally, there is also a tension between the scale of co-operation (which local actors are involved?) and the scale at which spatial issues arise. While the first tends to be more fixed, such policy issues arise at a wide variety flexible scales. This is a complicating factor for any platform for regional cooperation.

12.5 Challenges and questions addressed by urban practitioners

The case studies demonstrate a widespread conviction that regional coordination and cooperation is needed in the fields of transport, economy, spatial development, labour market etc. in order to improve the international competitive position of the metropolitan areas as a whole and to make it a more attractive city-region to live and work. But despite this awareness, European metropolitan areas are still facing considerable challenges such as the prevailing focus on local interests over the common regional good.

It seems that functional integration between the cities in the various cases is taking place even without dedicated supporting policies. Therefore it can be concluded that political commitment is not the most important factor that stimulates functional integration: it is the scaling-up of activities undertaken by people and firms themselves that often drives integration. Policies for regional integration should focus on certain aspects that really need a certain boost. Policies regarding transport and complementarity/related economic clusters are ways to identify common goals for the whole metropolitan area.

The interviewees employed by local and regional government authority indicate that they are often uncertain about the role other cities play in the metropolitan area and the effects these other cities have on the performance of their own city. They often have difficulties in assessing which inter-city relationships are most beneficial for further development. There is a huge demand for insight into (spatial and financial) instruments that allow trade-offs to be made for the greater regional good, while, at the same time, accounting for the fact that benefits and costs of such coordinated decisions are not balanced over the various actors involved and are often also not balanced in time.

Besides these overall challenges, it is interesting to assess the difference between ‘fusion-type’ and ‘incorporation-type’ regions. For incorporation-type regions, the strong relationships between the central city and surrounding cities are a given fact and most stakeholders acknowledge and accept the leading role of the central city. Stimulating integration is therefore not so much on the agenda, but the issue is more how to accommodate the strong relationships. Issues related to suburbanisation and (de)centralisation of urban functions prevail, and often cause tensions between the municipalities involved. The central city will often rely on the logics of the market to draw functions into their territory, while the smaller surrounding municipalities want a piece of the pie as well. It seems that they are increasingly well positioned to meet the market’s demand: jobs follow people. And often, not all urban functions can be accommodated in the central city. Finding a balance between centralisation and decentralisation of urban functions is a major challenge. Positively, branding strategies that make use of the strong international identity of the central city are widely accepted within the wider region.

In contrast, the challenge for fusion-type metropolitan is more focused on the need to increase integration in order to start a process of metropolisation or ‘borrowing size’ to exploit agglomeration benefits in a network of cities. The historical development trajectory of the involved cities have been much more individual (often leading to rivalry) and only in the last decade or so has evidence become widespread that larger metropolitan areas may be more competitive in an era of globalisation, and are a more relevant scale to consider the activities of people and firms. This requires clear data to convince the involved stakeholders that increased regional integration does benefit the region and their individual city. But even then another challenge will remain: namely the coordination of specific urban functions. While incorporation-type metropolitan areas have a clear focal point where urban functions concentrate, in fusion-type metropolitan areas several cities fulfil this role. Creating clusters of functions that allow cities to “bor-
row size’ from each is essential, but politicians will not be eager to give up possibilities to build or maintain important assets like airports, shopping malls.

A (short) list of challenges and questions addressed by urban practitioners across Europe:

- Making clear the (dynamics in) interdependencies and interactions among cities and their roles and functions (complementarities)
- Developing effective, flexible platforms for co-operation and regional coordination, that take into account the multi-scalarity of spatial development issues and that get support from the public
- Developing instruments to allow for the trade-offs between the regional good and local interests
- How to enter into a process of metropolisation to reap these benefits
- Making visible the benefits and costs of regional integration and the role of regional coordination and cooperation in achieving processes of ‘borrowing size’

13 Knowledge & Research Agenda

13.1 ‘Metropolisation’

In essence, the research needs of cities themselves overlap largely with the research agendas described in the scientific literature. In most parts of Europe, polycentric metropolitan areas present the new scale at which people and firms tend to concentrate many of their activities. Polycentric metropolitan areas are there to stay and will become increasingly important as processes of scaling-up continue. They might not always be daily urban systems already, but have the potential of becoming (more) functionally integrated. Polycentric metropolitan areas are, and will be, the new scale at which agglomeration effects manifest themselves.

Urban professionals are generally well aware of this important spatial transformation from city to polycentric metropolitan area. However, they clearly present that they are in need of more knowledge: they are often willing to look beyond their jurisdictional borders and co-operate with nearby cities, but with which city, for what issue, and what is the potential gain?

As regards the potential gain, research has suggested that a polycentric urban form implies the presence of less agglomeration benefits. At the same time, agglomeration costs are also less, the more polycentric a metropolitan area is. Therefore, the major quest for polycentric metropolitan areas is to organize a higher level of agglomeration benefits, commensurable with the scale of the whole metropolitan area, while keeping the extent to which agglomeration costs appear limited to the scale of single cities. The literature suggests the way to do so:

increased networking between the cities making up the polycentric metropolitan area. Networking may relate to a variety of dimensions: functional, institutional and cultural. These dimensions are not separate, on the contrary, they are strongly linked and influence each other positively: the more one undertakes activities all across the polycentric metropolitan area (functional), the more one starts to identify with this polycentric metropolitan area (cultural), the larger the need and support for regional governance (institutional), which may lead to investments that allow for easier travel within the metropolitan area and fosters more regional activity patterns of people and firms (functional), etc. This process can be labelled ‘metropolisation’, a euro-English term that refers to the process in which a perhaps rather loose collection of nearby cities gains in terms of performance through increased functional, cultural and institutional integration, see Figure 39.

The challenge for cities in polycentric metropolitan areas is to enter the upward spiral of metropolisation, move up in this spiral through fostering functional, cultural and institutional integration allowing to reap the benefits of agglomeration by jointly borrowing size from each other.

Potential gains quantified

Now, how can we quantify this potential gain in metropolitan performance that polycentric metropolitan areas can achieve when they become fully integrated? We can provide the beginning of an answer by examining how agglomeration benefits increase with size. Melo et al. (2009) found in a meta-analysis of the estimates of urban agglomeration effects, that in the Western world, the aver-
age elasticity of size is 5.8%. This means that on average, a city that is twice as large, has a productivity that is 5.8% higher. So in a city (or daily urban system) of 1,000,000 people, labour productivity tends to be 5.8% more high than in a city of 500,000. If a city in a polycentric metropolitan area is not related to the other cities in this area, they will not ‘borrow size’ from each other. They will be separate daily urban systems. If they join forces, however, they can increase their labour productivity substantially.

Labour productivity is generally considered a measure that shows the balance between agglomeration benefits and costs. Therefore, it certainly is not just an indicator of economic performance. If a city has high crime rates, or a not attractive natural environment, it will not be able to maintain or attract the higher skilled workers that are increasingly demanding in terms of quality of life.

Those familiar with agglomeration theories know that the reasons for this are well-known. When the labour market is larger, firms will be able to hire the right person for the job more easily. Likewise, in a larger labour market, employees will be able to find a job that matches their skills and interests better. Obviously, such good matches make workers more productive. Meijers and Burger (2010), among many others, mention the main benefits of agglomeration. It is the availability of a large and multi-functional labour pool and the presence of a good infrastructure and public facilities in dense economic areas that are the sources of agglomeration benefits. Relatively more urbanized areas are also more likely to accommodate universities, R&D laboratories, trade associations, and other knowledge-generating institutions, leading to larger innovation potential in larger metropolitan areas. Moreover, the often diverse industry mix in an economically dense area increases the odds of interaction, generation, replication, modification and recombination of ideas and applications across different sectors (Van Oort, 2004) and protects a region from volatile demand (Frenken et al., 2007). Finally, the presence of a large internal market offers a larger degree of stability and lower transport costs (Siegel et al., 1995).

Let us give a simple example of the potential gain of a metropolisation strategy in a polycentric metropolitan area, based on one of our cases, the Rotterdam – The Hague Metropolitan Area. The general conviction is that this area is still made up of two daily urban systems centred on The Hague and Rotterdam respectively. Both have about 1 million inhabitants. If they would manage to enter the process of metropolisation and reach the scale at which both daily urban systems would have merged into one daily urban system, then they could reap the benefits of agglomeration normally only found in a 2-million inhabitants metropolis. In theory, it would mean that labour productivity would go up 5.8% (they double their size).

Average labour productivity in 2009 in this part of the Netherlands was about 39.000 euro per capita. 5.8%*39.000*2 million inhabitants = more than 4.5 billion euro. So, the potential gain of a metropolisation strategy in the Metropoolregio Rotterdam – The Hague is 4.5 billion euro. Per year, that is! If they would extend it to include the city-regions of Leiden and Dordrecht as well, it would mean a potential gain of 6-7 billion euro. Of course, Rotterdam and The Hague is not a loose collection of nearby cities, but have integrated already to quite some extent, which means that the potential gains are less, but nevertheless amount to billions of Euros each year. These numbers make clear that metropolisation in polycentric metropolitan areas is a highly beneficial development strategy.

However, important knowledge questions need to be addressed in order to develop empirically based regional development strategies for polycentric metropolitan areas.

### 13.2 A research agenda on polycentric metropolitan areas

The process of metropolisation sketched in the previous section provides the basis for our research agenda on polycentric metropolitan areas. This agenda can be subdivided by the different elements of the process as sketched in Figure 39. The main set of research topics concern the entire process of metropolisation and how it is linked to metropolitan performance (see 13.2.1). Yet, we can both broaden the scope – by looking at how general societal and economic trends impact upon this process of metropolisation (13.2.2), and narrow the scope – how individual elements of this process of metropolisation are linked (13.2.3), or by examining research issues that address single elements of this process (13.2.4-13.2.6). Research topics are listed bullet wise.

**13.2.1 The process of metropolisation**

- Gain more insight into the potential benefits of the process of metropolisation in polycentric metropolitan areas – how can cities exploit their joint critical mass?
- Analyse how cities can enter the upward spiral of metropolisation
- Analyse the extent to which polycentric metropolitan areas have progressed in the upward spiral of metropolisation and how it has benefited their metropolitan performance
- Analyse in great detail how networks/integration can provide a substitute for agglomeration
- Analyse in great detail how functional, institutional and cultural integration are linked to each other
- Analyse which factors foster or hamper entering the upward spiral of metropolisation and the process of moving up in this spiral
- Analyse how functional, cultural and institutional factors influence the regionalisation of agglomeration benefits and how they can avoid the regionalisation of agglomeration costs – if at all
- Does the process of metropolisation develop differently in ‘incorporation-type’ versus ‘fusion-type’ polycentric metropolitan areas?

![Figure 39 The upward spiral of metropolisation](image)
13.2.2 Urgency of metropolisation in polycentric metropolitan areas
- Explore how general economic and societal trends drive the development of, and impact upon polycentric metropolitan areas (past, present, future)
- Explore whether globalisation affects the division of labour within polycentric metropolitan areas, and whether this enhances performance
- Explore whether polycentric metropolitan areas with a strong division of labour, a shared identity, a regional branding strategy and/or integrated governance arrangements between its constituent parts perform better than other polycentric metropolitan areas.
- Explore the importance of agglomeration in regional development, also vis-à-vis the importance of international networks
- Explore the idea that metropolisation is a good strategy to combat the economic/financial crisis in Europe

13.2.3 Links between functional, cultural, and institutional integration
- Analyse for which type of persons/households and for which type of firms the polycentric metropolitan area is a functional entity
- Explore whether strong local identities hamper institutional and functional integration, perhaps limiting one’s opportunities
- Explore whether functional integration and a regional identity enhances support for institutional integration

13.2.4 The functional geography of polycentric metropolitan areas
Analyse whether a division of labour (functional/sectoral) is developing within polycentric metropolitan areas as they integrate further, and how different cities perform different functions
- Analyse the extent to which cities are related and the role of transportation systems and infrastructure investments in this
- Develop new methods to identify valuable (potential) relationships between pairs of cities from the viewpoint of labour mobility, innovation and productivity
- Analyse how a top-level of urban/metropolitan functions (in terms of amenities and services, infrastructure provision, specialised residential and business environments) can be arranged in polycentric metropolitan areas
- Develop new ways to delineate polycentric urban regions, using innovative data to monitor flows and interactions between cities

13.2.5 The cultural embeddedness of polycentric metropolitan areas
- Analyse for which type of persons/households and for which type of firms the polycentric metropolitan area is a functional entity
- Analyse the extent to which polycentric metropolitan areas have institutionalized and hence become a frame of reference and orientation for its inhabitants and firms
- Analyse how the rise of the new scale of polycentric metropolitan areas impacts upon local pride and identity and regional attachment and identification
- Explore whether polycentric metropolitan areas are becoming more culturally homogeneous or whether the process of integration leads to a strengthening of local identities and hence more cultural heterogeneity
- How does external marketing of polycentric metropolitan areas relate to internal processes of identification with such metropolitan areas

13.2.6 The institutional challenge of polycentric metropolitan areas
- Analyse different governmental arrangements and assess their effectiveness and efficiency in terms of addressing issues for regional coordination in polycentric metropolitan areas
- Analyse decision-making systems within cooperative platforms and their capability to move beyond decision-making on ‘win-win’ situations
- Analyse how local actors can be well informed about how decisions in the interest of the metropolitan area may benefit local actors indirectly
- Explore which instruments allow to make trade-offs between local actors that are in the interest of the region, but whose benefits and costs are not spread evenly.

13.3 Conclusion
Polycentric metropolitan areas rather than individual cities will become the most appropriate unit for social and economic organisation soon, and in some cases present already the spatial scale at which society is organized. Polycentric metropolitan areas are, or will soon be, the new scale at which agglomeration effects manifest themselves. The city has regionalized. This spatial transformation poses tremendous challenges for urban policy-makers and researchers alike. The past decade, much research effort has been put in identifying this spatial transformation, and capturing it in concepts and theories. Now, we need to move beyond this agenda-setting and conceptual phase: new research should deliver the knowledge that European cities need to face this spatial transformation and turn it to their advantage. Cities in polycentric metropolitan areas will need to engage in a process of metropolisation – an upward spiral of continuously increasing functional, cultural and institutional integration. This will enable them to reap the benefits of the enormous critical mass that is organized in polycentric metropolitan areas. If you were to put a value on this process of metropolisation, it easily reaches the level of billions per polycentric metropolitan area per year, as metropolisation will lead to productivity increases. This makes the further development of polycentric metropolitan areas a key issue for regional development, especially in times of crises. However, important knowledge questions need to be addressed in order to develop empirically based regional development strategies for polycentric metropolitan areas that will allow to reap these huge gains. The European Metropolitan network Institute calls upon all European cities to help address these important research challenges for the benefit of our firms and citizens.
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Frank van der Knaap, Project Leader Transport Authority and Head of the Administration Office, Stadsgewest Haaglanden
Jan Willem Kooijmans, (former) City Planner, City of The Hague
Lodewijk Lacroix, Senior Process Manager, Stadsgewest Haaglanden
Hans Slagboom, Head of Department Living, Green and Environment, Stadsregio Rotterdam
Cees Stoppelenburg, Policy Advisor, Stadsregio Rotterdam
Theo Strijers, Program Manager Metropol, City of The Hague

Andrea Svedlin, Policy Advisor at the Department of Culture, City of Rotterdam
Inge van de Water, Strategic Policy Advisor, City of Delft
Marcel Wijermans, Senior Urban Planner, City of The Hague
Annex 2: Respondents questionnaire

Urban stakeholders from the following European metropolitan areas responded to our questionnaire:

Alicante  
Amsterdam  
Barcelona  
Berlin  
Bilbao  
Birmingham  
Bonn  
Braunschweig  
Brighton & Hove  
Brussels  
Cologne/Köln  
Den Haag/The Hague  
Dresden  
Düsseldorf  
Eindhoven region  
Frankfurt am Main  
Gdansk  
Gijon  
Graz  
Hamburg  
Helsinki  
Leicester  
Lille métropole  
Lisbon  
Madrid  
Malaga  
Malmö  
Manchester  
Newcastle upon Tyne  
Palermo  
Porto  
Portsmouth  
Prague  
Preston  
Riga  
Rotterdam  
Seville  
Stockholm  
Strasbourg  
Stuttgart  
Szczecin  
TheSSaloniki  
Torino  
Utrecht  
Vienna  
Vilnius  
Warsaw