ESPON

GEOSPECS

Geographic specificities and Development Potentials in Europe

Inner Peripheries: a socio-economic territorial specificity

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The partnershInner Peripheriesbehind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

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List of abbreviations

FUA	Functional Urban Area
GDP	Gross Domestic Product
ICT	Information and Communication Technologies
IP	Inner Peripheries
LAU	Local Area Unit
MUA	Morphological Urban Area
NUTS	Nomenclature Unifiée des Territoires Statistiques
SGI	Services of General Interest
SPA	Sparsely populated areas
TPG	Transnational Project Group
WMK	Werra-Meißner Kreis

A Executive summary

Territorial specificities are mostly described as geographic, i.e. sparsely populated, insular, border, and mountainous regions, and generally result in economic and social performance levels around or below European averages. However, other territorial specificities are also found in Europe, in which the socio-economic characteristics prevail above the geographic ones. These specificities include 'areas affected by industrial transition', as mentioned in article 174 of the Treaty on the Functioning of the European Union among 'the regions concerned that should be paid particular attention'. Some countries and regions have identified these peripheral areas 'out of the socio-economic loop' as 'Inner Peripheries' (IP). No policy documents at European level (e.g. The Territorial Agenda of the EU 2020, the European Commission's 2008 Green Paper on Territorial Cohesion and legislative proposals for the EU Cohesion Policy 2014-2020) address these explicitly, illustrating that the concept of IP as such is new in the European policy arena.

However, different policy and scientific documents on spatial planning and regional development at the national level specifically approach those 'places' that suffer from socio-economic decline or stagnation. For these reasons, face-to-face interviews with national experts were conducted, in addition to literature review of national policy documents and grey literature. From the literature and interviews emerge the various reasons for the socio-economic 'peripherality' in these regions. The distances that create situations of "inner peripherality" are not the Euclidian ones to a hypothetical "centre", but linked to the configuration of physical, social, economic, institutional and cultural networks. This makes the concept quite complex. Admittedly, the functioning of these networks of interaction may in turn be influenced by the settlement structures of the region/country (centralised or polycentric) or specific bio-physical characteristics and socio-economic trends (e.g. land cover and linked land use dynamics and functionalities, population density, accessibility). Inner peripherality may appear more frequently in rural areas that are "in the shadow" of larger metropolitan areas or separated from nearby rural centres by national borders. However, no territorial configuration directly or necessarily leads to a situation of inner peripherality. This is why the concept of IP is wide-ranging and impossible to delineate for the whole ESPON area. Thus, as IP are not primarily defined by their geographic characteristics, this category of areas is different from the other categories studied in the GEOSPECS project (i.e. border areas, coastal zones, islands, mountains, Outermost Regions, and sparsely populated areas) and should not be considered as a geographic specificity. For this reason, it was decided to describe the project findings on IP separately in the current report.

The overall objectives of this report are:

- to develop a coherent concept of IP as a new socio-economic territorial specificity;
- to identify the key characteristics of IP that will provide the basis for the delineation of these areas;
- to explore policy alternatives for these areas by taking better account of the diversity of development preconditions linked to their peripherality using, as an analysis tool, the GEOSPECS nexus approach;

- to identify future research options to further develop this new concept at European level.

This analysis faces multiple challenges:

- First, the concept of IP as such is new in the European policy arena. Inner Peripheries are also unaddressed in most European countries. Therefore the concept has to be built based on the heterogeneous interpretations found in the few countries dealing with it. The scope of enquiry is therefore limited but heterogeneous;
- Second, the limited availability of socio-economic data at the appropriate spatial (LAU2 level) and temporal (from 1990's onwards) resolutions implies that an analysis at European level is not feasible;
- Third, the broad contextual differences between IP imply that a benchmarking of IP against European target values and/or average performances is not meaningful.

Two areas were selected as case studies to get a deeper insight into the IP concept, based on suggestions from the Dutch and German key experts interviewed as part of the empirical work in the individual case study areas. These areas are Parkstad Limburg (The Netherlands) and "Werra-Meißner-Kreis" (Germany). Both areas suffer from socio-economic decline and are disconnected from the surrounding development hubs, despite being centrally located territories in Europe. A detailed description of the case studies is presented in the Annexes.

Identification of Inner Peripheries

Inner Peripheries can be *identified* on the basis of two overall principles:

- they are the result of significant spatial-temporal socio-economic developments, which usually receive political responses;
- they can be described as being "in the shadow" of neighbouring metropolitan areas within a macro-regional context.

The application of these principles for the broad European identification of IP has proved to be challenging due to the lack of harmonised datasets on socio-economic indicators at relevant spatial and (particularly) time scales. In addition, the identification of the relevant neighbouring metropolitan areas to IP requires hypotheses on the types of proximity that can be relevant from the point of view of socio-economic development (e.g. jobs, services of general interest, accessibility).

IP have a socio-economically defined border that changes over time. The political and biophysical characteristics are also relevant and can help to define the individual context of each periphery. The reality of these borders is therefore multidimensional, because it simultaneously involves other important features (e.g., natural obstacles, political borders, restricted development areas/zoning, socio-cultural dividing lines). This multidimensional reality of IP generates a variety of positive or negative developments with different time paths, which are caused by the interlinked complex cross-relationships and cross-impacts or

feedback loops. In this aspect, the IP are similar and sometimes linked to the GEOSPECS 'Border areas'. These effects influence the socio-economic development of an IP that may be more or less distant from a metropolitan area (i.e. not only in the immediate surroundings), depending on the theme or the specific issue at stake. Consequently, the TPG did not consider it meaningful to produce a general *delineation* of IP following administrative boundaries (i.e. the LAU2 regions used for the other GEOSPECS project areas).

Despite the complexity of the IP notion, and the difficulty to find harmonised datasets on socio-economic indicators at relevant spatial and time scales, some of the key elements (i.e. accessibility to the relevant metropolitan cores in terms of travel time, population potentials and socio-economic indicators as a proxy for the functioning of regional economies) can be used to create meaningful delineations of IP at the regional scale. These delineations have been made for the two IP case studies in Werra-Meißner-Kreis (DE) and Parkstad (NL). Overall, these delineations demonstrate the need for multi-scalar (spatial and temporal) analyses to understand patterns of socio-economic specificity, which has concrete implications for the design of policies taking into account the IP specificities of territories.

Key findings

After reviewing the different concepts gathered during the face-to-face interviews, and those found in grey literature, the following elements appear overall as key for understanding IP:

- IP can be primarily described by *socio-economic characteristics*, and therefore cannot be considered as geographical specificities. Political and geophysical characteristics play a secondary role. The peripherality is not limited to the outer margins of any given territory. The distances that contribute to determining the conditions for economic and social development are not the Euclidian ones to a hypothetical "centre", but linked to the configuration of physical, social, economic, institutional and cultural networks. "Peripheries" may therefore be situated in areas that what would geometrically be characterised as the centre of a given territory;
- IP are identified with a *development concept* that is not a question of urban or rural but of being a centre or a periphery, so that IP are found in both urban and rural environments;
- IP are *permanent in neither time nor place*, but appear and disappear in the course of the history of a region. IP differ in this aspect from the geographic specificities studied in the GEOSPECS project (except for border areas and Sparsely Populated Areas);
- IP are initially recognisable by a shrinkage (*demographic decline*) initiated by the disappearance of the main economic activity;
- In general, IP are located in the *vicinity of strong development centres* (i.e. metropolitan areas) associated with the provision of Services of General Interest, defined by population, jobs, universities, hospitals, administrative centres, etc.

The following *indicators* therefore appear as relevant to identify IP: demographic trends (total population by age segments and out- and in-migration), commuting patterns (based on the working and living locations), size of labour market, and access to Services of General Interest. What remains challenging is the identification of critical thresholds for these indicators at the pan-European level.

Given the complex multidimensional reality of IP, data availability and the novelty of the concept, the analysis of *social, economic and environmental trends* that may be associated with IP was limited to the most important aspects represented in the two case studies. The trends were analysed following the eight transversal themes defined in GEOPSPECS: economic vulnerability, demographic trends, accessibility and access to Services of General Interest, residential attractiveness, role of Information and Communication Technologies, natural resource exploitation, ecosystem services and protected areas and biodiversity as factors of development. The findings are synthesised as strengths and weaknesses linked to development opportunities.

The strengths of IP are generally associated with the functions that are scarce in the neighbouring areas ('filling the gap'), although this is obviously not all that matters. The main identified strengths are:

- Presence of natural areas, relevant for nature conservation itself, and also for other functions. Protected nature is attractive to live in and for recreation, e.g. the Green Heart in the Netherlands. However, if many people move there, this specific attractiveness will disappear;
- Unexploited space in central locations between cities or countries that can be used as 'low pressure' areas in highly densely populated regions or countries, for different functions such as: building areas for industrial estates or residential areas; recreation and leisure activities; new green natural spaces that can be used for multiple functions; production of energy, by using the space to provide the infrastructure for power lines, wind turbines, solar energy parks, etc.; production of food, biofuels and timber; cultural and historical heritage, which is crucial for the regional identity of the population; lower land prices in rural or peri-urban areas close to city centres; quietness and safety.

The *weaknesses of IP* are mainly associated to the fact that the number of people living there is below the threshold for a healthy and stable economy and for the provision of Services of General Interest. The main weaknesses recognised in the present study are listed below. This is the full list and does not apply to every IP:

- Ageing of the population, with young people leaving the area in search of jobs;
- Lack of jobs and high unemployment rates, fragile economic life;
- Poor public transport services, resulting in high travel times;
- Not all Services of General Interest are available, e.g. few or non-existent primary and secondary schools, health centres, cultural centres, cinemas, theatres, shopping centres;
- Non-existent, slow or expensive broadband connections.

The main obstacle to economic development is that not all the required services required to establish a new company are available nearby, e.g. banks, or tax experts.

The “nexus model” developed in the GEOSPECS project was applied to the two case study areas to identify the key linkages between defining features and challenges and opportunities, through intermediary processes. Thereafter a synthetic “nexus model” was prepared for IP to summarize the set of processes that can be said to take place in all IP, providing an overall synthesis of the main findings. Many parallels exist between this socio-economic specificity and the geographical specificities studied in GEOSPECS. The lack of critical mass is a recurring component of the “defining features”. They produce similar effects in mountain areas, islands, Sparsely Populated Areas and Outermost Regions, generating not only challenges, such as structurally imbalanced migration patterns and limited access to services, but also opportunities based on strong local identities and other factors of quality of life. These parallels seem to be a logical consequence from the fact that many geographic specificities result in areas of socio-economic stagnation.

Policy options to approach challenges and develop opportunities in IP

Many of the opportunities identified through the nexus model are based on “soft factors” such as social cohesion, trust, tradition and adaptive capacity. These aspects concern all types of territorial specificities, and suggest that policies focusing on positive self-perceptions and internal branding could be further developed as instruments to counter the imbalanced demographic flows and brain-drain characterising IP.

At the *national level*, different approaches are found in Belgium, Germany and the Netherlands to stimulate these “low dynamic areas”. Some measures focus on increasing the ‘critical mass’ of the individual municipalities by merging them, whereas others focus on promoting economic development by supporting new economic sectors and local enterprises. Sectoral policies, such as for agriculture, and especially those linked to the provision of Services of General Interest, i.e. housing, education, energy and transport, can play a very relevant role. A crucial aspect is governance, particularly to determine the appropriate administrative level (national, province or municipal) responsible for the measures.

The concept of IP, as considered at the national level, will probably change when approached at the *pan-European level*. For example, the two case study areas in Germany and the Netherlands are low development areas within their respective countries. However, they have the potential to become development regions because they are centrally situated in Europe and could become connection nodes. In addition, IP close to national borders could change their role if approached at trans-national level. Therefore, at the European level, the first question is to find out if there could be a unique contribution of IP to the macro-regions, and what it is; and second, what policies are needed to ensure that they develop these potential contributions.

Within this context, the European policy areas that have been identified to be most amenable for developing IP are:

- Territorial cohesion, by helping to identify regions with similar socio-economic decline problems, analyse their common challenges and learn from best practices to address these;
- Trans-European Networks (TEN) would be interesting for IP if they also focused on the development of the secondary lines (local and inter-regional transport). The current TEN infrastructure connects only large cities and enhances the isolation of IP;
- Structural Funds at national level; although some countries may have problems with eligibility;
- The Europe 2020 growth strategy offers great opportunities to boost the development of IP because its five objectives aim to deliver high levels of employment, productivity and social cohesion, which are directly linked to the challenges and opportunities identified for IP. In this regard, it is important to consider the interplay between the regional and the macro-regional scale, which is key in addressing IP. Policies seeking to maximise short-term growth in each region of Europe by focusing development on the centres of metropolitan regions ignore IP and will enhance population decline and other negative trends in these areas. In contrast, long-term policies maximising smart, sustainable and inclusive growth will need to be designed for macro-regions, considering the specific characteristics of each region and its unique contribution to the overall economic, social and environmental performance. Hence the role of IP will become apparent. The current approach, in which each Member State adopts its own national targets, will not deliver the expected outcomes without considering the differences between the regions and their different contributions;
- The national partnerships could help promoting the development of IP, using Structural Funds instruments for the next programming period such as CLLD. LEADER groups promote the participation of local stakeholders in the processes of development and are also appropriate to approach the population shrinkage and other negative trends in IP;
- IP could play an important role in the innovation of the agricultural sector (e.g. bio-based energy, provision of environmental services) because there are few conflicts over land use. Thus the new Common Agricultural Policy could support these developments.

Future research alternatives

The findings indicate that IP are a socio-economic specificity that cannot be delineated in one coherent way at the European scale. The large variability of thresholds for the variables to be considered, and the current lack of harmonised datasets on socio-economic indicators at relevant spatial and time scales make this an unattainable task.

However, the analysis of the two case studies has revealed that some indicators are particularly useful to describe their specific situation, e.g. accessibility to metropolitan cores in terms of travel time and population potentials. The data on employment per economic branch and on the number of gainfully employed

persons provide variable results when analysed for a single time step without a trend analysis. Consequently, quantitative analyses of the socio-economic specificity of IP should be carried out at a meaningful spatial level, showing the real socio-economic dependencies. Such analyses require compilations of LAU2 data and data processing which are most efficiently carried out at the level of the ESPON programme as a whole. This calls for an alternative organisation of data collection and quantitative analysis.

The analysis of historical trends in demography (population, migration, ageing) and sectoral employment seems to be essential for mapping hot-spot areas for IP. In addition, further research should focus on describing the macro-regional context in order to understand the process leading a region to become an IP. What were the historical changes and the concurrent biophysical, economic and cultural context in that specific area and the surrounding areas? Considering the complexity of the interactions, the analysis should be done for several case studies distributed across the European continent, with available regional datasets at relevant spatial and time scales.

Finally, the assessment should be completed with analysis of the territorial dynamics of human attitudes. Why do investments in regional development work in some regions and not in others? Is there a human factor? In this regard, the use of agent-based modelling will be a useful tool to identify the human drivers and their inter-linkages.

B Report

1. Europe's Inner Peripheries: a new territorial concept

1.1 Introduction

Regions with specific territorial features have received increasing attention in recent years. Most significantly, article 174 of the Treaty on European Union (TFEU) reads as follows:

> *"In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion.*
>
> *In particular, the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions.*
>
> *Among the regions concerned, particular attention shall be paid to rural areas,* ***areas affected by industrial transition****, and regions which suffer from severe and permanent natural or demographic handicaps such as the northernmost regions with very low population density and island, cross-border and mountain regions."*

Thus, in policy terms, regions with territorial specificities are currently approached as a subset of disadvantaged and least favoured regions. Their specificities are described as "handicaps", and they are primarily identified in the context of efforts to reduce disparities between European regions.

These territorial specificities are mostly described as geographic, i.e. sparsely populated, insular, border, and mountainous regions, and generally result in economic and social performance levels around or below European averages[1]. However, other territorial specificities are also found in Europe. These include areas affected by industrial transition, in which the socio-economic characteristics prevail over the geographic ones, identified by some countries and regions as 'Inner Peripheries'.

The concept of Inner Peripheries (IP) as such is new in the European policy arena, as illustrated by the fact that there are no policy documents dealing explicitly with it:

- The Territorial Agenda of the EU 2020, agreed in 2011 (EUROPEAN COMMISSION, 2011a) only deals with specific types of territories by referring to "areas with specific geographic challenges and needs (e.g. structurally weak parts of islands, coastal zones and mountainous areas)" and otherwise considers coastal zones and mountainous areas from a natural risk management perspective;

[1] As described in the GEOSPECS Final Report

- The European Commission's 2008 Green Paper on Territorial Cohesion (EUROPEAN COMMISSION, 2008), although taking a different angle expressed by "Turning territorial diversity into strength", does not consider explicitly IP as such and only refers to "regions with specific geographical features" as areas that "face particular development challenges".
- The European Commission's legislative proposals for the EU Cohesion Policy 2014-2020 do not include the concept of IP for any of the funding schemes.

However, certain different policy and scientific documents on spatial planning and regional development at national level specifically approach those 'places' that suffer from socio-economic decline or stagnation. The reasons for the socio-economic 'peripherality' of these regions are various, depending mainly on the settlement structure of the region/country and its socio-economic trends and biophysical characteristics. Thus, the concept of IP is wide-ranging and impossible to delineate for the whole ESPON area. This difficulty of identifying and mapping these areas may also be the reason they are not considered in EU policy documents.

Among the innovative measures for the 2014-2020 period, the renewed focus on Community-led local development (CLLD) might be particularly relevant for these IP, for which re-building of local identity is a key issue. Building on, for example, existing LEADER action groups and the URBAN pilot project, the European Commission wishes to fund programmes for capacity building, local public-private partnerships, networking and exchange of experience. Considering that the loss of local identity (mostly for historical reasons) is one of the defining features of IP, this factor may play an important role in future bottom-up processes leading to the definition of CLLD projects (EUROPEAN COMMISSION, 2011b).

Such policy processes and discussions provide the context for the GEOSPECS (GEOgraphic SPECificitieS and Development Potentials in Europe) project. With its focus on identifying possible effects of geographic specificity on regional and local development processes, it is intended to contribute to these processes and discussions. During the development of the project, it became apparent that IP could not be considered as a category of geographic specificity, in contrast to the other six types (or 'GEOSPECS areas'): border areas, coastal zones, islands, mountains, Outermost Regions, and sparsely populated areas. The reason for this is that IP are characterised by socio-economic historical processes, leading a centrally located territory to be disconnected from physical, social and economic networks and to experience relative or absolute decline. For this reason, it was decided to describe the project findings on IP separately in the current report.

The objectives of this report are:

- to develop a coherent concept of Inner Peripheries as a new socio-economic territorial specificity;
- to identify the key characteristics of Inner Peripheries that will provide the basis for the delineation of these areas;

- to explore policy alternatives for these areas by taking better account of the diversity of development preconditions linked to their peripherality using, as an analysis tool, the GEOSPECS nexus approach;
- to identify future research options to further develop this new concept at European level.

This analysis faces multiple challenges:

- First, the concept of IP as such is new in the European policy arena, and IP are not addressed in most European countries. Therefore the concept has to be built based on the heterogeneous interpretations found in the few countries dealing with it. The scope of enquiry is therefore limited but heterogeneous.
- Second, the limited availability of socio-economic data at the appropriate spatial (LAU2 level) and temporal (from 1990s onwards) resolutions implies that an analysis at European level is not feasible.
- Third, the broad contextual differences between IP imply that a benchmarking of IP against European target values and/or average performances is not meaningful.

Two areas were selected as case studies to get a deeper insight into the IP concept: Parkstad Limburg (The Netherlands) and “Werra-Meißner-Kreis” (Germany). In both countries, there is existing knowledge on the IP concept; thus, the areas were selected based on suggestions from the Dutch and German key experts interviewed as part of the empirical work in the individual case study areas. Both areas suffer from socio-economic decline and are disconnected from the surrounding development hubs, despite being centrally located in Europe. Parkstad Limburg is considered in The Netherlands as a shrinkage region with a strong population decline. This decline is mainly due to its peripheral location in the south-eastern part of the Netherlands, close to the German and Belgian national borders. From a European perspective, this region is quite central, but it shows a clear border effect compared to the neighbouring areas (De Jong & Van Duin 2010: 10; Parkstadmonitor, 2010). “Werra-Meißner-Kreis” (WMK) is geographically located in the centre of Germany, in the border triangle of the federal states of Hesse-Thuringia and Saxony. Before the reunion of East and West Germany, WMK was located at the edge of the inner German border, on the West German side.

1.2 Project process

The GEOSPECS project was undertaken by a consortium of research institutes – the "Transnational Project Group" (TPG) – each of which had specialist competence for a specific category of geographic specificity (for IP, this was Alterra). Three of the TPG members also had a coordination role.

Following agreement on the conceptual understanding of each category, the TPG decided to prepare maps, based on delineations at the LAU2 level, corresponding to municipalities in most European countries. Data were then compiled at this scale to characterise the IP in the two case studies that were undertaken to investigate the concept and interactions between the key factors.

To take due consideration of the opinions and policy demands of key stakeholders, the project included two stakeholder consultations. The first consultation for IP took the form of face-to-face interviews based on a structured questionnaire, which was sent out in advance, and answered during the interview by stakeholders specifically concerned with the different geographic specificities. The second consultation was a stakeholder conference, which took place in Brussels on 8 December 2011, bringing together about 30 representatives of geographic specificities. Both processes enquired into the stakeholders' views on policy needs for "their" areas. The stakeholder conference focused particularly on the European Commission's proposal for a future (2014-2020) Cohesion Policy.

The TPG has previously delivered an inception report, an interim report and a draft final report. Responses to comments on these reports from the ESPON Coordination Unit and Monitoring Committee members have been incorporated in the present report. This report only focuses on IP and presents the concept, main characteristics, policy-relevant options and suggestions for further research.

1.3 GEOSPECS Inner Peripheries

The first task for Alterra was to conceptualise IP by specifying principles and characteristics that would provide the basis for the delineation of these areas.

As noted above, the concept of IP as such is new in the European policy arena, and no policy documents at European level deal explicitly with it. In addition, few European countries address IP. However, different policy and scientific documents on spatial planning and regional development at the national level specifically approach those 'places' that suffer from socio-economic decline or stagnation. For these reasons, Alterra researchers conducted face-to-face interviews with national experts, in addition to the literature review of national policy documents and grey literature.

From the literature and interviews emerges the fact that in this case, the term 'peripherality' does not primarily refer to being in the outer margins of any given territory. It is more often used to describe territories that are considered to be "out of the loop" and whose socio-economic performance is below the regional average.

The distances that create situations of "inner peripherality" are not the Euclidian ones to a hypothetical "centre", but linked to the configuration of physical, social, economic, institutional and cultural networks. This makes the concept quite complex. Admittedly, the functioning of these networks of interaction may in turn be influenced by the settlement structures of the region/country (centralised or polycentric), as well as by specific bio-physical characteristics and socio-economic trends (e.g. land cover and linked land use dynamics and functionalities, population density, accessibility). Inner peripherality may appear more frequently in rural areas that are "in the shadow" of larger metropolitan areas or separated from nearby rural centres by national borders. However, no territorial configuration directly or necessarily leads to a situation of inner peripherality. This is why the concept of IP is wide-ranging and impossible to delineate for the whole ESPON area. Thus, as IP are not primarily defined by their geographic characteristics, this category of areas is different from the other categories studied in GEOSPECS and should not be considered as a geographic specificity.

1.4 The concept of Inner Peripheries

The literature review on IP revealed scarce and patchy information, insufficient to achieve a comprehensive understanding of the concept. Consequently, as noted above, researchers from Alterra decided to have face-to-face interviews with experts who steer spatial planning at a strategic level. As IP are a new category in EU policymaking, there are no pre-defined groups of stakeholders. The consultation process in this case focused on quality instead of quantity: three extensive interviews were conducted with experts from Belgium (General Management of Territory Facilities of the Walloon Area), Germany (Federal Office for Building and Regional Planning BBR), and The Netherlands (Ministry of Infrastructure and Environment).

None of the experts offered an official definition of IP. However, some descriptions were proposed:

- The Dutch Environmental Assessment Agency (PBL) uses the concepts of high dynamic and low dynamic areas: the latter could be considered as IP. Examples: The Green Heart (Groene Hart), East Groningen, Zeeuws-Vlaanderen, Parkstad Limburg.
- In Germany, IP are described by several indicators based on the accessibility model, i.e. population density, accessibility of daily population, potential population or potential jobs; also, IP are never relevant urban centres. The German concept differentiates between urban and rural IP. Examples: Altmark (area between Sachsen-

Anhalt, Niedersachsen and Brandenburg); the centre of the triangle between Dresden, Leipzig and Chemnitz; the area around Kassel; the Eifel region.

- For Belgium, an IP could be understood as an area where the rural economy (agriculture and animal breeding) is not important enough for the area to be defined as "rural", but where the population is not dense enough for it to be called "urban". In this context, IP appeared when the proportion of agriculture in GDP decreased rapidly (now 2.5% of GDP, compared to 20% 50 years ago) and the suburbanisation of the cities increased. Thanks to cars and the development of the road network, people moved out of the cities to settle in peripheries. Each IP is necessarily always defined in relation to a nearby city, on which it relies: if the city is not doing well, neither is the IP. There are many examples of IP in Wallonia, e.g. Philippeville, Couvin, Virton, Chymay and Marche.

The perception of the characteristics of, and processes in, IP seems to differ significantly between Belgium, on one hand, and Germany and the Netherlands on the other. For the Netherlands, the population decline in IP is one of the main problems (partly due to their location at a border),correlated with a decline of Services of General Interest. A similar perception prevails in Germany, where poor accessibility/transport connections and a lack of jobs are also seen as problems. In contrast, in Belgium, there is an increase of population, particularly commuters, in IP. People who live in these areas are wealthy, attracted by the low price of land, low property tax, and the quiet and safe (i.e. less crime) environment. However, the Belgian experts recognize that economic life is fragile in IP, as many people only live there but do not work there; as soon as fuel prices rise significantly, the situation may deteriorate since commuters are dependent on their cars. The lack of local services is also seen as the main obstacle for companies to establish themselves there. Corresponding to their less positive view of IP, experts from Germany and The Netherlands also see different opportunities for these areas (as compared to Belgium): IP could make use of their often relatively pristine nature and open spaces to promote recreational and touristic activities; they could also be advertised as "low pressure" living areas, especially for retired people (but care has to be taken that not too many people are attracted, otherwise the area loses its advantage). Also, the availability of space lends itself to activities such as food production, nature conservation, and energy production (including infrastructure facilities such as power lines).

For all the three countries, the following sectoral policies were deemed most important for IP: agriculture, housing, regional development, energy, transport and education.

The main relevant planning documents are listed in Text Box 1, while key findings of the survey are summarised in Table 1.

Text Box 1 Key references

The Netherlands:

- Nota Ruimte (2006). 'One of the main conclusions is that the conservation of nature/landscape and accessibility will benefit from the concentration of urban developments. The Policy Document on Spatial Planning aims to concentrate new urban developments around existing larger cities. This gives the opportunity to create the desired urban and green living environments, while at the same time it will minimize the negative impacts on nature and landscape and keep employment and services accessible'.
- 'Ruimte in cijfers' (2008). In this report, the Netherlands Environmental Assessment Agency provides insight on relevant spatial and societal developments in the Netherlands by focusing on eight themes: space, population, housing, employment, agriculture, nature, recreation and mobility. The demographic decreases in some regions of the Netherlands (Parkstad Limburg, Noord-Groningen or Zeeuws Vlaanderen) are analysed. Special attention is given to the need to restructure the housing market in these regions in response to the drop in demand, suggesting three alternatives: stopping expansion opportunities, improving the quality of housing and neighbourhoods, and regional coordination.
- 'Vele steden maken nog geen randstad' (2006) Report on commuting patterns and the urban hinterland 'het nieuwe ommeland'. The travel time is much more relevant than the Euclidian distance. The latest developments in the high-speed train network show a trend in which only very large cities are connected.
- 'De nieuwe groei heet krimp. Een perspectief voor Parkstad Limburg' (2009). This report prepared by the Nicis Institute and Parkstad Limburg analyses the background for the demographic developments in Parkstad Limburg as a way to understand the current situation. Future perspectives are presented with the hope that they can help society to realise that demographic shrinkage can become the ground for qualitative growth.

Germany:

- The most important reference source is the Spatial planning report (published every 5 years). It provides the basis for analysing spatial changes and differences throughout the country and for discussing and developing guiding principles for spatial development, and approaches to action. The spatial categories are areas defined in terms of specific criteria in which comparable structures exist and where similar goals are pursued. The most important spatial

categories analysed include *structurally weak areas*, defined as 'areas where living conditions as a whole are well below the national average or where a decline is expected. [...] Policy makers have a particular responsibility in these areas to do justice to the constitutional requirement of establishing equivalent living conditions'.

- Perspectives of Spatial Development in Germany, BBR Bonn (2006). This special publication of the Ministry of Transport, Building and Urban Affairs (BMVBS) and Federal Office for Building and Regional Planning (BBR) shows the correlation between the analysed spatial development (status and tendencies) and the challenges and principles of a future spatial development policy derived from this. It develops principles regarding the main contents and approaches based on the most important results of the Spatial Planning Report 2005. It also includes a short outlook on the focal points of future spatial development policy. On the basis of extensive graphic and map material, the spatial planning strategies for the promotion of growth and innovation inside and outside of metropolitan regions, for the covering of the public social security provision - *especially in regions with negative growth* - and for the development of the cultural landscape are shown.
- Concepts and Strategies for Spatial Development in Germany, Secretariat of the Standing Conference of Ministers responsible for Spatial Planning, Federal Ministry of Transport, Building and Urban Affairs, Berlin (2006). These documents were developed as an update to the Guidelines and Framework for Action in regional planning drawn up in 1992 and 1995, respectively, and considered as a guiding principle for joint action undertaken by the Federal Government and the federal states in June 2006. They are based on the results and proposals from a two-year technical and political discussion process as well as the 2005 Spatial Planning Report. The priority tasks defined for spatial planning in the following years were: growth and innovation, ensuring services of public interest and conservation of resources and shaping of cultural landscapes.

Belgium:

- The SDER (Schéma de développement de l'espace régional), also called RSDP (Regional Spatial Development Perspective) (1999). It is a cross-sectional and evolving document used for spatial planning in the Walloon Region, at regional and supra-regional level. It gives orientations for the critical review of development plans and is used as a reference for decisions relating to housing conditions,

environment, travel, economic activities, urbanism, nature conservation… in other words for the development of the whole territory. It is an essential document for the future of Wallonia.

This plan contains the following components:

- an evaluation of the social, economic, cultural and environmental needs, as well as an analysis of the constraints and opportunities of the territory;
- the overall objectives in the field of harmonization of activities, mobility, sparse soil management, conservation and development of cultural heritage;
- the preferred options and sectoral objectives to be achieved, especially in terms of mobility, equipment and infrastructure of regional and supra-regional importance.

The cooperation of all private and public actors (inhabitants, companies, local authorities) is essential to achieve territorial development. It includes a diagnosis being updated by the Conférence Permanente du Développement Territorial (CPDT). The new version of the document should be definitely approved by the government at the end of 2013. It is interesting to observe the different planning process in the neighbouring Flanders region, where the provinces, and not the whole region (as in Wallonia), are designated for the preparation of the spatial planning.

Table 1 Summary of results of first consultation on Inner Peripheries in Europe

Country	Concept of Inner Periphery	Definition	Examples	National policies dealing with the concept
Belgium (only Wallonia)	The concept is linked to areas that have lost their identity as urban or rural, i.e. they are neither rural nor urban, but "in between".	There is no definition of IP at the national/regional level. However, they could be defined as areas where the traditional rural economy has lost importance, so that it is no longer appropriate to talk about a rural area; and where the population is not dense enough to be called an urban area.	Couvin, Philpeville, Chymay, Marche. The west-east industrial axis: Sambre, Meuse and Vesdre.	The Plan Regional d'Amenagement du Territoire (PRAT) was created in the 1980s and ignored until 1991 when it generated debate. As a result, it became the Schema de développement de l'espace regional (SDER) in 1999. The new version of the document should be definitely approved by the government at the end of 2013.

Country	Concept of Inner Periphery	Definition	Examples	National policies dealing with the concept
Germany	The origin of the concept is the settlement structure in Germany, which is polycentric and not centralised. IP are identified with a development concept that is a question not of urban or rural, but of being a centre or a periphery. The IP concept is about 30 years old. There is a classic typology in Germany dealing with population density and centrality. Centrality is based on important urban centres (high-order and middle-order) for the functions of infrastructure and services (defined by population, jobs, universities, hospitals, administrative centres, etc.). These urban centres are defined by the Länder. There are approx. 120 high-order and 900 middle-order centres. These typologies have an analytical purpose and make the types comparable to each other. The function of other typologies is to divide Germany into zones that should cooperate, giving direction for planning; they are not based on political divisions. There is a relevant map to identify IP that shows commuting patterns, based on the working and living locations that are registered by the German social security ((BBR, 2006, p 26).	IP are described by several indicators based on the accessibility model, i.e. population density, accessibility of daily population, potential population or potential jobs. Another criterion is that IP do not have – high-order or middle-order urban centres.	Arendsee (Altmark) located between three Länder; area around Kassel (including Werra Meiβner Kreis); Northwestern area close to the islands of the Baltic Sea; in the Eiffel region; the centre of the triangle between Dresden, Leipzig and Chemnitz.	

Country	Concept of Inner Periphery	Definition	Examples	National policies dealing with the concept
The Netherlands	Does not exist as a policy category but has been defined in different ways depending on the philosophies of successive governments.	The Netherlands Environmental Assessment Agency (PBL) uses the concepts of high dynamic and low dynamic areas. The latter could be considered as IP.	Restricted development areas (the Green Heart); regions suffering from decline or stagnation (East Groningen, Parkstad Limburg, Zeeuws-Vlaanderen).	The socio-economic policies in the 1950s-1980s focused on de-concentration of urbanisation (so-called 'guided de-concentration'), in which attention was given to the rural areas with low amenity levels and population decline. In contrast, policies in the 1990s focused on strengthening regions with economic growth, e.g. Nota Ruimte (2004) focused on the main development ports. The latest policies have further put the focus on economic strength, and shifted the governance from national to provincial authorities.

Although IP are mainly socio-economic specificities, they still have interlinkages with certain geographic specificities. Some IP are linked to *Border Areas*, as the word 'periphery' suggests, because they are located on the political borders between two or more countries; this has important consequences for their development as marginal areas (e.g. part of the Netherlands close to the German and Belgian borders). Similarly, some IP are located in *Coastal Areas* that can be seen as a kind of periphery between the land and the sea (e.g. German coast in the Baltic Sea). Finally, although *Sparsely Populated Areas* have many characteristics in common with IP, such as low population density and low level of Services of General Interest, they are different from IP because their characteristics are geographically determined, and therefore they do not have a critical mass for development in relation to the surrounding areas, i.e. they are isolated whereas IP are relatively close to hubs of development.

1.5 Characterisation of Inner Peripheries

The document analysis and the expert interviews reveal that IP is a broad concept that can be generally described according to socio-economic, political and geophysical characteristics, in that order of importance, as shown in Table 2.

Table 2 Main socio-economic, political and geophysical characteristics of Inner Peripheries

Category	Characteristics
Socio-economic	• Demographic decline (due to e.g. lower birth rates, migration) • Ageing • Decline in Services of General Interest (e.g. hospitals, schools) • Relatively close to hubs of large economic development, but too far away to profit from them directly (accessibility in time) • Lack of economic diversity • Loss of local identity
Political	• Political border between countries, e.g. Parkstad in NL (border with DE and BE) • Political borders within countries, e.g. Länder borders in DE • Restricted development areas/zoning, e.g. Green Heart (Groene Hart) in NL • Closing down of main economic activities, e.g. mines in Limburg (NL) • Closing down of Services of General Interest
Geophysical	• Close to natural barriers, e.g. the estuary of the Scheldt river (NL)

As shown by the socio-economic characteristics, the concept of IP is dynamic, i.e. they are stable neither in time nor in space. Consequently, their description should not be only limited to the current state but needs to consider historical

trends leading to the present situation. It is worth noting that this is also true for some Sparsely Populated Areas (SPAs, one of the geographically-specific categories studied in GEOPSECS) because of changes in population density. However, SPAs differ essentially from IPs since they do not have a critical mass for development, i.e. a carrier of some functions to be created in the region.

The temporal dimension is fundamental for characterising IP. Figure 1 shows three possible socio-economic developments that differ in time in three IP regions (*a, b* and *c*): (i) in the time period 0-1, the three regions show similar socio-economic decline; (ii) in time period 1-2, socio-economic decline continues in region *a*, whereas regions *b* and *c* become stable; (iii) in time period 2-3, region *a* keeps declining, region *b* remains stable and region *c* starts a positive socio-economic development. Therefore, the socio-economic characteristics differ depending on the time period chosen for the analysis. In addition, the temporal changes in IP are closely linked to the temporal changes in neighbouring metropolitan areas, which are mainly caused by flows of population between these two types of area. This explains why a static map for a specific time cannot describe IP appropriately (i.e. 'you don't know where you are in the development process'); spatial-temporal dynamic maps are required for their characterisation, defined on the basis of socio-economic gradients with surrounding metropolitan areas.

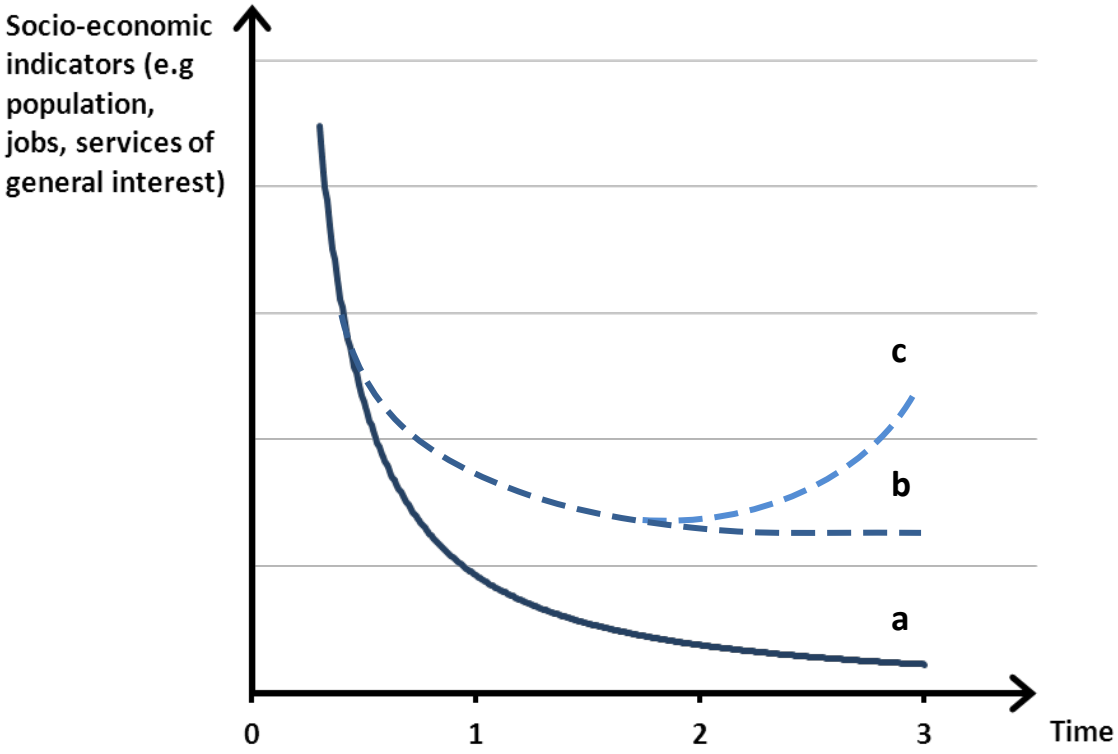


Figure 1 **Three different socio-economic developments in time in Inner Periphery regions (a, b and c)**

This implies that the characterisation of IP at the European level is very difficult since it is context/place-based and requires historical datasets for socio-economic indicators that are not available at pan-European level at the appropriate spatial resolution.

In an attempt to classify the various types of IP, a range of categories may be used, bearing in mind the contextual differences mentioned above:

- Shrinking or growing IP areas (based on population density trends);
- With or without regional centres;
- Urban or rural;
- Cities or regions.

To our knowledge, the category of IP only exists as such in a few countries. In our research, Germany was the only country for which (recent) 'Inner Peripheries' literature was found (see Text Box 1). In the other countries studied, although the category of IP does not exist as such, several available datasets show trends linked to these different low-dynamic areas. The indicators selected will depend on the specific characteristics of the country. For example, in the Netherlands, the Dutch Central Statistical Office (CBS) and Netherlands Environmental Assessment Agency (PBL) have conducted analyses on past and future trends on employment, income, and total population that are used for monitoring but not specifically regarding the regions associated with 'Inner Peripheries'. There are yearly national evaluation reports on societal trends from PBL: 'Balans voor de leefomgeving' (Human environment status report, e.g. PBL 2010); another national monitor on spatial developments is the Nota Ruimte (2006). In Wallonia (Belgium), there are some studies on socio-economic developments from the Conférence Permanente du Développement Territorial (CPDT) (see Text Box 1). In the United Kingdom, general socio-economic trends can be found on the Office of National Statistics website (www.ons.gov.uk).

At the regional level, countries have different classifications and measures to monitor socio-economic developments in regions with characteristics of IP. However, as mentioned above, to our knowledge Germany is the only European country where administrative regions (the *Länder*) have their own classifications and measurements to identify IP. At the national level, the work of the Federal Office for Building and Regional Planning (BBSR) provides to the Länder the concepts and guidelines for the characterisation of IP. In the spatial planning rules for the whole of Germany, each *Land* has to take into account the planning of adjacent *Länder* (horizontal) and the planning at other levels (vertical). The guiding principle is to have a coherent development framework. Data on spatial observation can be found on the BBSR website (www.raumbeobachtung.de). The developments are monitored by the Federal Statistical Offices that collect regional statistics. BBR builds indicators based on these statistics, which are like 'early warning systems' on living conditions at the federal level, e.g. regional population prognoses based on the demographic structure of the population, historical trends and national and international mobility. In addition, each *Land* has its own statistical office monitoring specific developments in its territory.

Table 3 shows the main conceptual and methodological interpretation of IP in comparison with geographically-specific (GEOSPECS) areas.

Table 3 Differences in the conceptual and methodological interpretation of Inner Peripheries in comparison with geographically specific (GEOSPECS) areas

	Category of GEOSPECS area						
	Outermost	**Islands**	**Mountains**	**Sparsely populated**	**Border**	**Coastal**	**Inner Peripheries**
Delineation principle	Given		Based on threshold values		Based on distances to a line		Based on spatial-temporal changes
Nature of specificity	Defined politically, as a response to an inherited situation	Categories designated on the basis of specific physical characteristics		Categories designated on the basis of specific settlement patterns	Categories designated because they act as an interface and/or are situated on the rim of Member States		Categories designated on the basis of socio-economic developments
Data used for delineation	Not applicable		Topography	Population potential	Time-distance, Euclidian distance, topological distance (e.g. contiguity)…		Changes in population potential and jobs
Most relevant territorial context	Macro-regional context		Buffer zone with mutual influence	Macro-regional context	Buffer zone with mutual influence		"In the shadow" of metropolitan areas

2. Socio-economic identification of Inner Peripheries

Inner Peripheries can be identified on the basis of two overall principles, as mentioned in Table 3:

- they are the result of significant spatial-temporal socio-economic developments, which usually receive political responses;
- they can be described as being “in the shadow” of neighbouring metropolitan areas within a macro-regional context.

The application of these principles for the broad European identification of IP has proved to be challenging due to the lack of harmonised datasets on socio-economic indicators at relevant spatial and (particularly) time scales.

In addition, the identification of the relevant neighbouring metropolitan areas to IP requires hypotheses on the types of proximity that can be relevant from the point of view of socio-economic development (e.g. jobs, services of general interest, accessibility).

IP differ from the geographic-specific categories studied in the GEOSPECS project in that they primarily refer to a socio-economic specificity: they have a socio-economically defined border that changes over time. The political and biophysical characteristics are also relevant and can help to define the individual context of each periphery. The reality of these borders is therefore multidimensional because it simultaneously involves other important features (e.g., natural obstacles, political borders, restricted development areas/zoning, socio-cultural dividing lines).

This multidimensional reality of IP generates a variety of positive or negative developments with different time paths, which are caused by the interlinked complex cross-relationships and cross-impacts or feedback loops. In this aspect, the IP are similar and sometimes linked to the GEOSPECS ‘Border areas’ (analysed in detail in section 3.2.5 of the GEOSPECS Scientific Report).

These effects influence the socio-economic development of an IP that may be more or less distant from a metropolitan area (i.e. not only in the immediate surroundings), depending on the theme or the specific issue at stake.

Consequently, the TPG did not consider it meaningful to produce a general delineation of IP following administrative boundaries (i.e. the LAU2 regions used for the other GEOSPECS project areas).

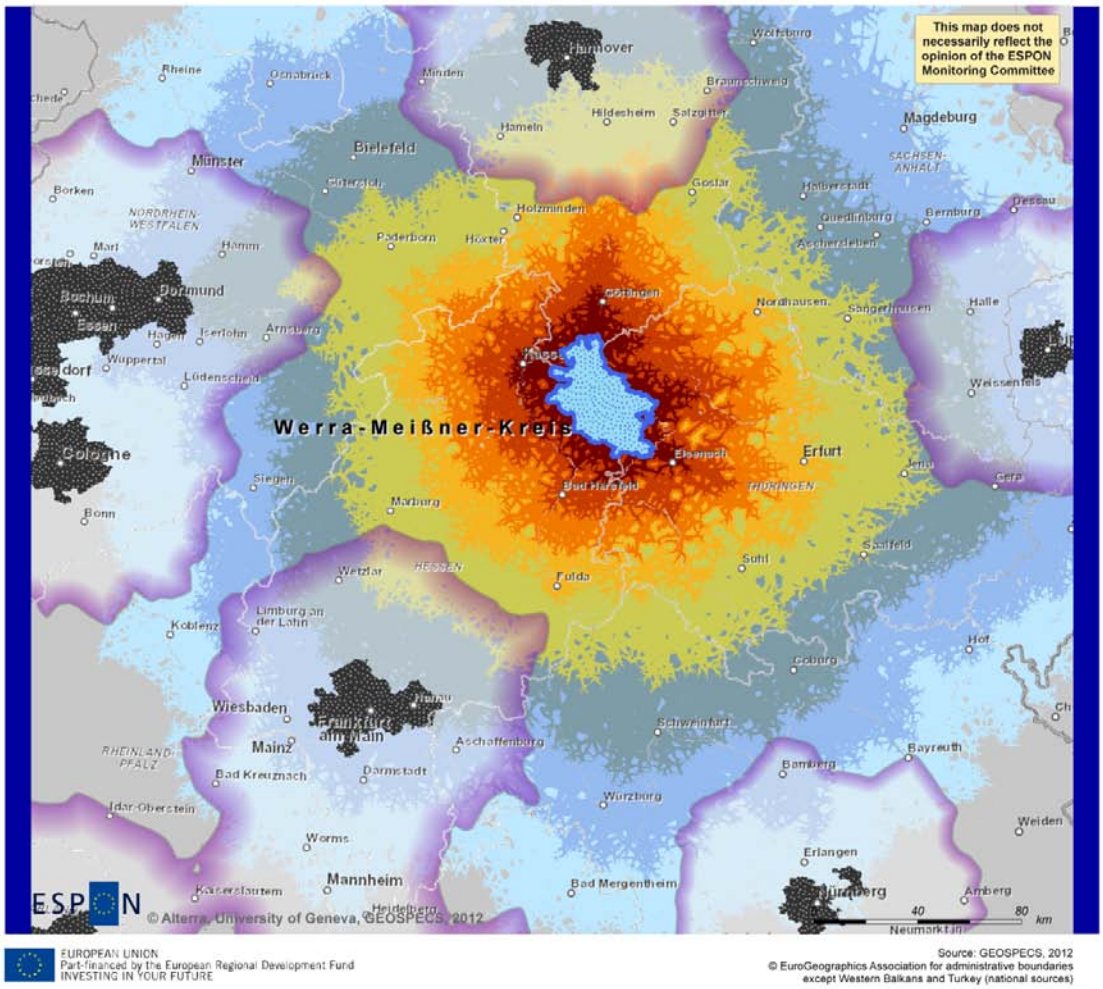
Despite the complexity of the IP concept, and the difficulty to find harmonised datasets on socio-economic indicators at relevant spatial and time scales, some of the key elements acknowledged in Table 3 can be used to create meaningful delineations of IP at the regional scale. These

delineations have been made for the two GEOSPECS case studies in Werra-Meißner-Kreis (DE) and Parkstad (NL):

- *Accessibility to the relevant metropolitan cores in terms of travel time*: based on a 45- and 90-minute travel time to/from ESPON Morphological Urban Areas (MUA), which corresponds to a reasonable proxy for the maximum generally accepted distance for commuting and daily mobility and for access to Services of General Interest to a metropolitan area in the vicinity (Map 1 and Map 2);
- *Population potentials*, i.e. how many people living in the region can be reached in an acceptable travel time (e.g. 45 minutes) (Map 3 and Map 4);
- *Socio-economic indicators* as a proxy for the functioning of regional economies. NACE LAU2 data can be used to show differences and functional linkages between IP and their surrounding (metropolitan) cores. As examples, Figure 2 and Figure 3 show, respectively, the distribution of job categories and land use categories in the two case studies.

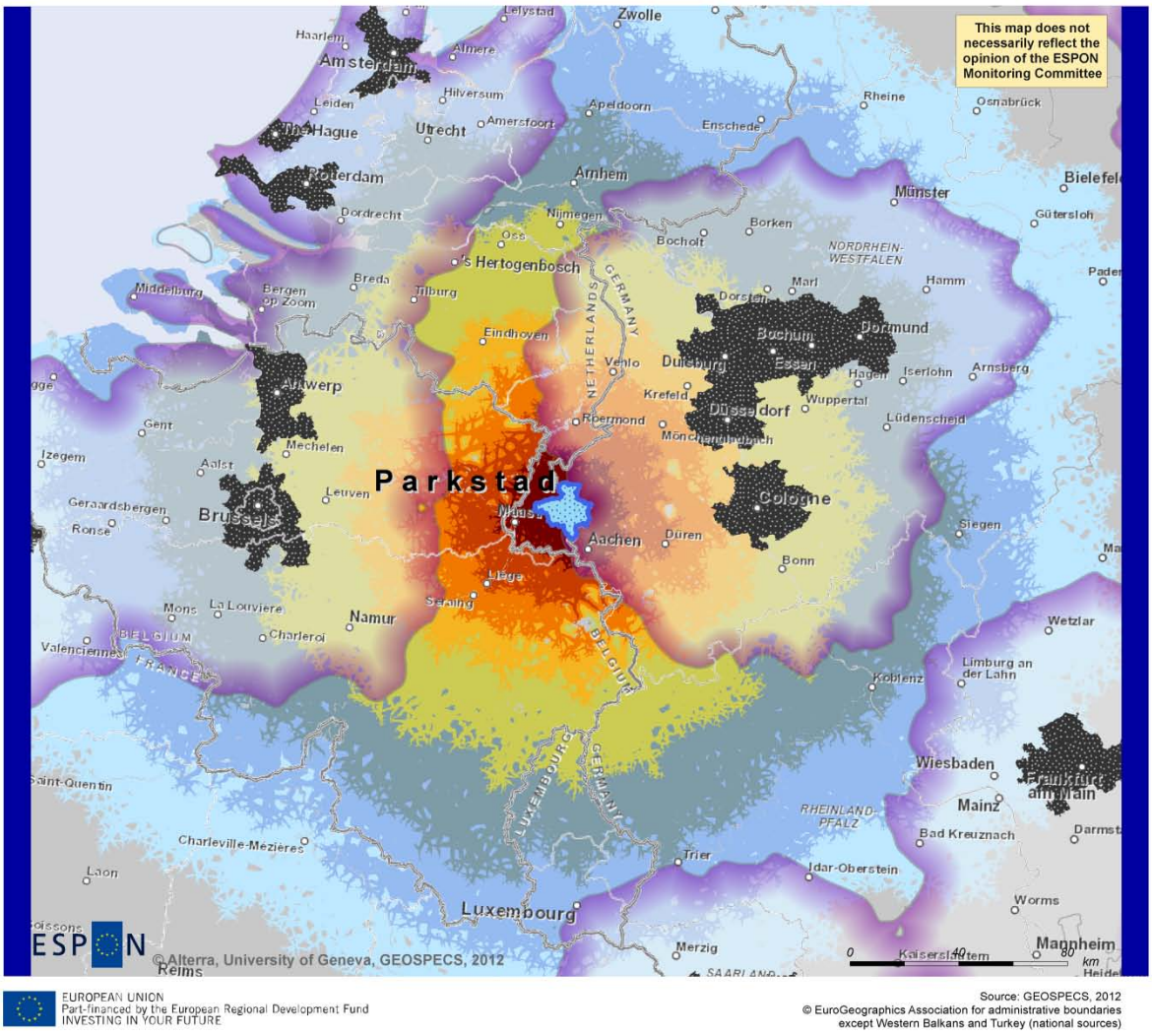
However, these proxies and thresholds do not cover all types of spatial influences. For example, differences in wealth, culture and legislation between neighbouring regions and/or countries can influence the spatial-temporal dependencies.

Overall, these comparisons demonstrate the need for multi-scalar (spatial and temporal) analyses to understand patterns of socio-economic specificity. This has concrete implications for the design of policies taking into account the IP specificities of territories, as further described in chapter 3.



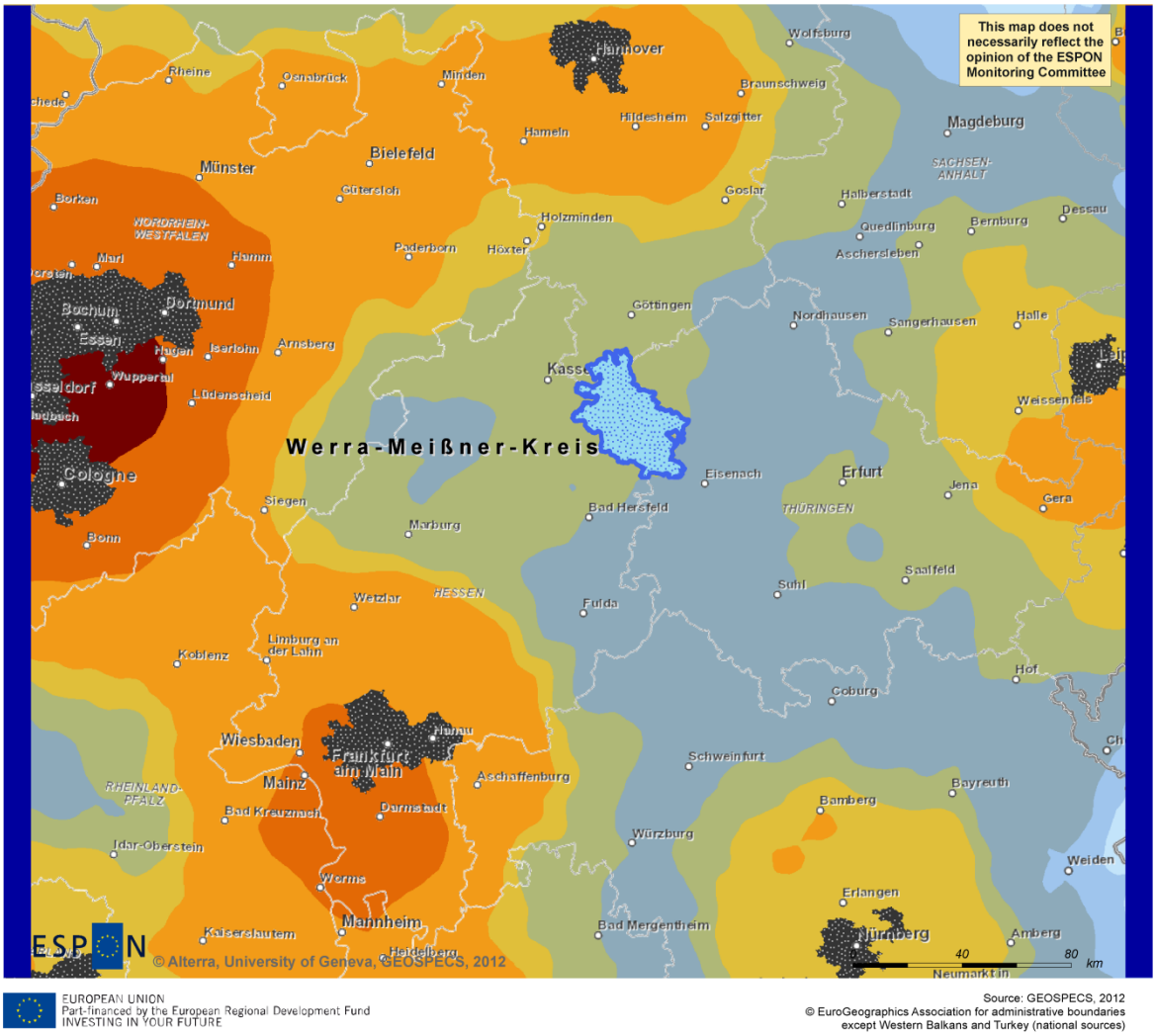
Map 1 Travel time to metropolitan cores calculated at supra-regional level from Werra-Meißner-Kreis

The 500,000 inhabitant threshold used to identified these MUAs corresponds to the population of the Functional Urban Areas (FUA) associated with the MUA.



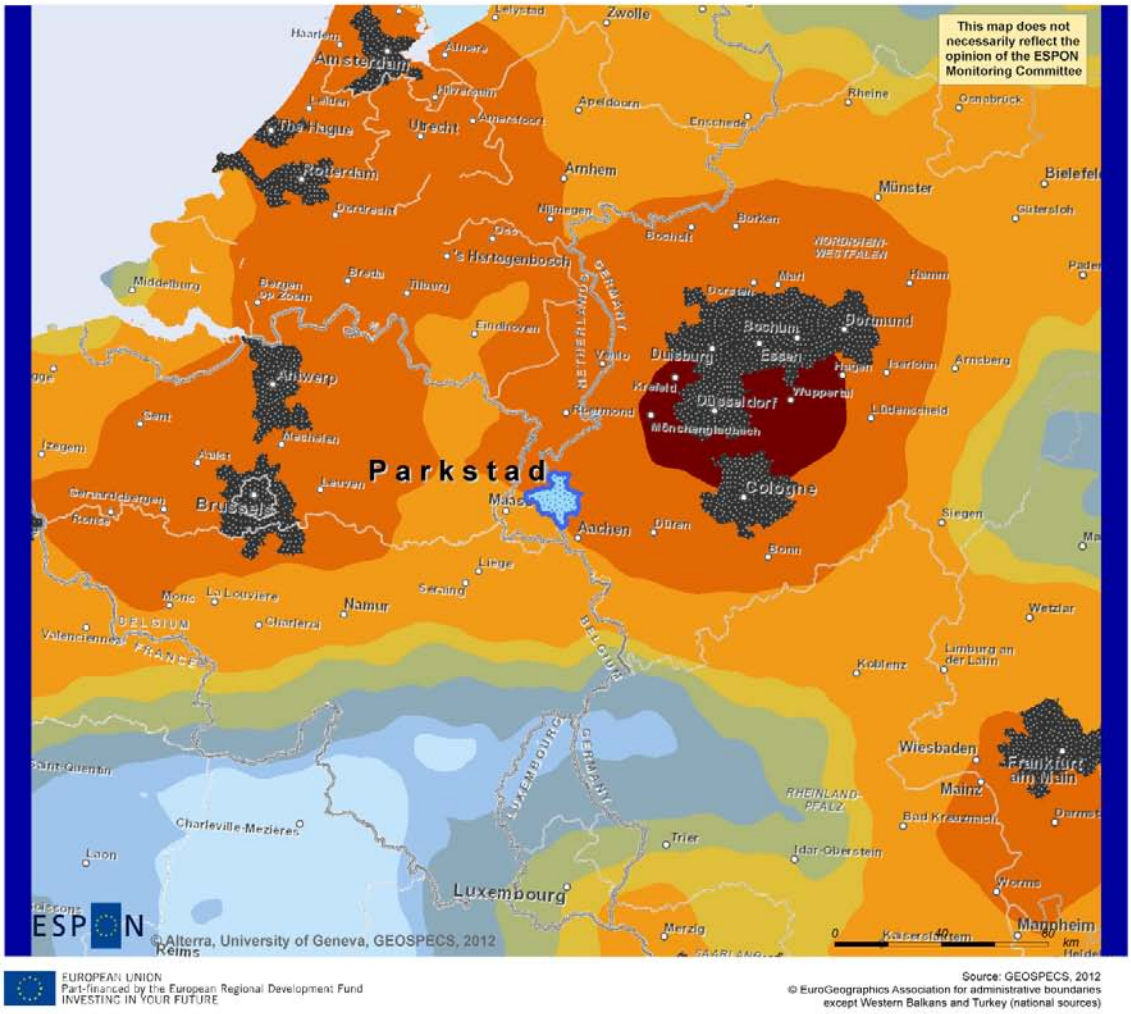
Map 2 Travel time to metropolitan cores calculated at supra-regional level from Parkstad

The 500,000 inhabitant threshold used to identified these MUAs corresponds to the population of the Functional Urban Areas (FUA) associated with the MUA.



Map 3 Population potentials mapped at supra-regional level around the German Inner Periphery Werra-Meißner-Kreis (WMK).

The map shows how Werra Meißner-Kreis is located far from the reach of core development centres with large populations.



Map 4 Population potentials around the Dutch Inner Periphery Parkstad Limburg.

The map shows how Parkstad is located just on the edge of the reach of core development centres with large populations.

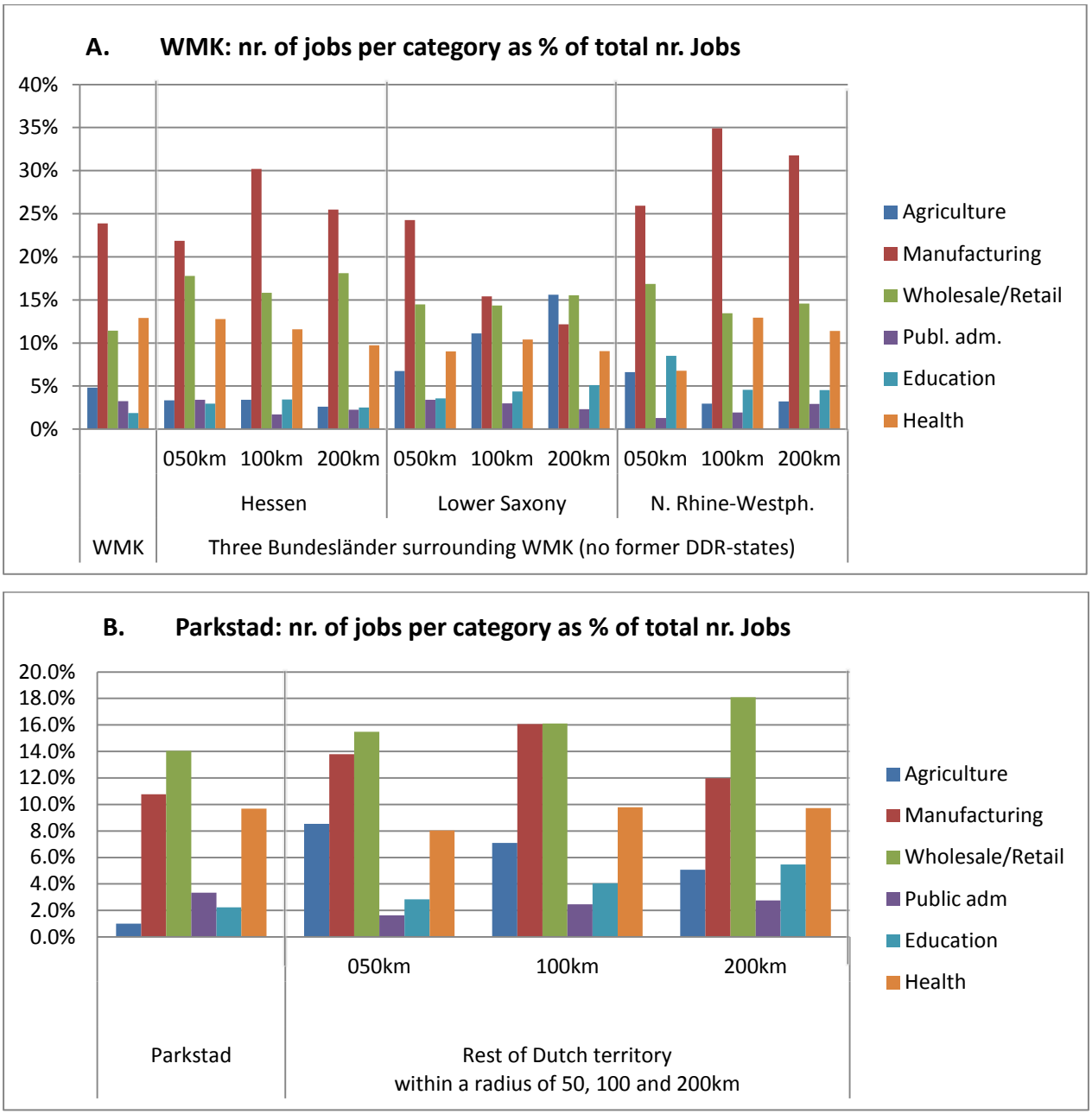
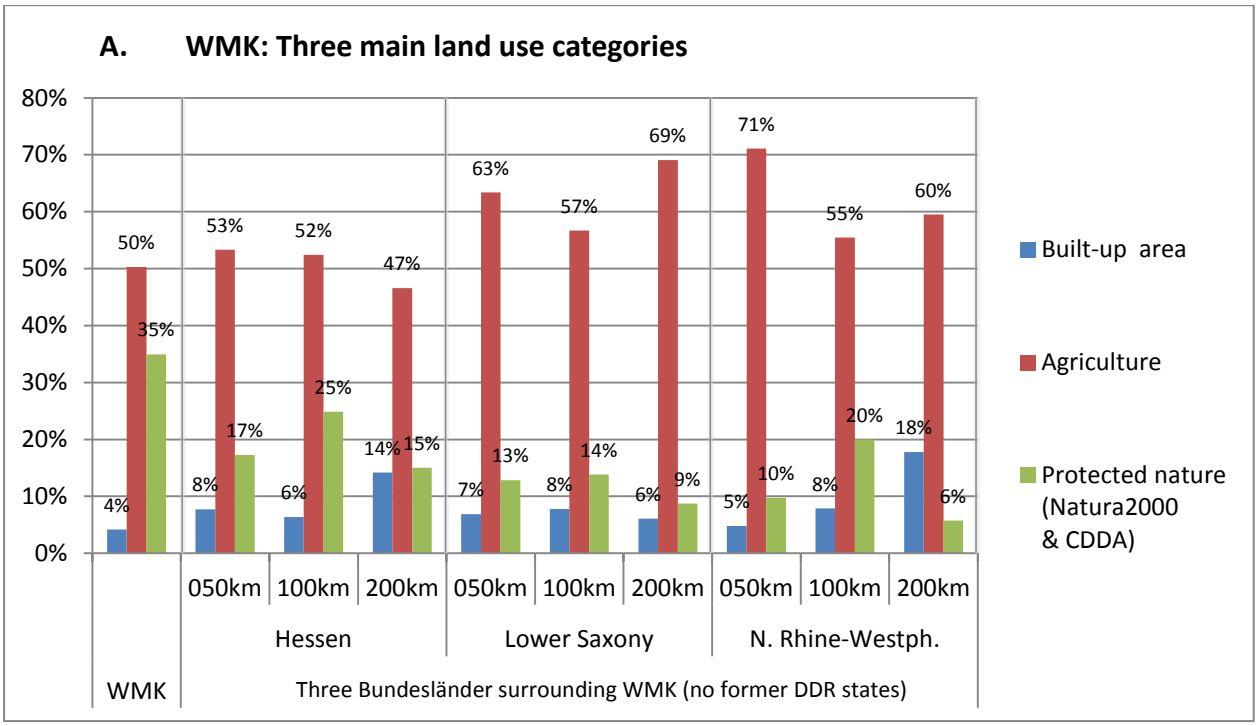


Figure 2 Relative importance of a selection of economic sectors in WMK (DE) (2A) and Parkstad (NL) (2B) in terms of employment

The graphs show that the relative proportion of jobs in education and wholesale/retail-business is lower in both case study areas compared with the neighbouring areas. On the other hand, other categories like health, manufacturing or public administration do not consistently show lower levels than the surrounding areas. For example, for the WMK, percentages of manufacturing jobs are higher in the big MUAs in the Ruhrgebiet in the state of North Rhine-Westphalia than in WMK, whereas the proportion of these jobs is lower in the much more agricultural state of Lower Saxony.



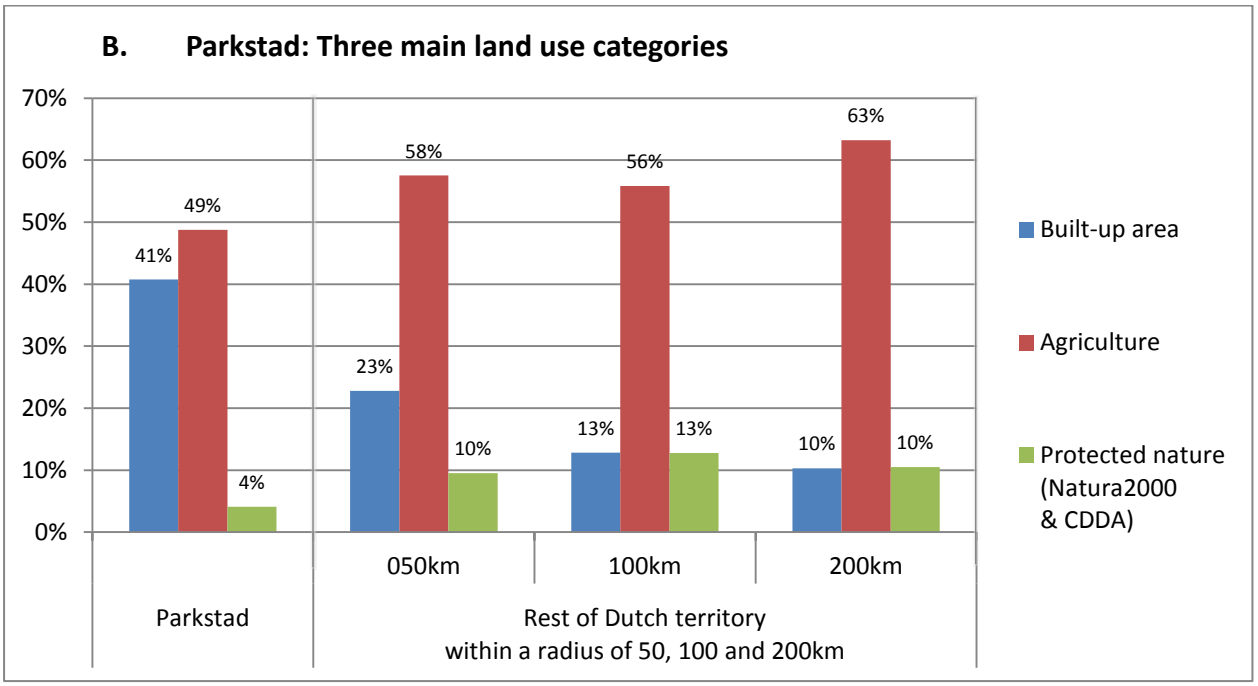


Figure 3 Proportion of three major land use categories in WMK (DE) (3A) and Parkstad (NL) (3B)

There are few major differences in current the proportions of built-up areas, agriculture and protected natural areas (Natura 2000 & CDDA sites) between the IP and the surrounding areas in all three Länder considered. Protected nature areas cover a larger part of WMK than of surrounding areas. This difference is not found in the very urbanised Parkstad where the proportion of built-up area is greater than in the surrounding regions.

3. Key findings

The objective of this chapter is to describe the main findings of the face-to-face interviews and the case studies, and building on these, analyse how IP can be approached both quantitatively and qualitatively by policies based on their characteristics.

Given the complex multidimensional reality of IP, as discussed in chapter 2, their quantitative analysis has been limited to the most important aspects represented in two case studies. Data availability and the novelty of the concept have largely influenced the analyses undertaken. However, data at the level of the 125,049 LAU2 units of the ESPON space open new perspectives for multi-scalar analysis that could be explored in future analysis. Analyses of these data are the primary basis for the first three sections of this chapter. The last section uses these data to develop the "nexus model" to illustrate key linkages for IP.

3.1 Key issues: spatial-temporal changes in demography, economy and accessibility to services of general interest

After reviewing the different concepts gathered during the interviews, and those found in grey literature, the following elements appear overall as key for understanding IP:

- IP can be primarily described by socio-economic characteristics, and therefore cannot be considered as geographical specificities. Political and geophysical characteristics play a secondary role. The peripherality is not limited to the outer margins of any given territory. The distances that contribute to determining the conditions for economic and social development are not the Euclidian ones to a hypothetical "centre", but linked to the configuration of physical, social, economic, institutional and cultural networks. "Peripheries" may therefore be situated in areas that what would geometrically be characterised as the centre of a given territory;
- IP are identified with a development concept that is not a question of urban or rural but of being a centre or a periphery, so that IP are found in both urban and rural environments;
- IP are permanent in neither time nor place, but appear and disappear in the course of the history of a region. IP differ in this aspect from the geographic specificities studied in the GEOSPECS project (except for border areas and Sparsely Populated Areas to certain extents);
- IP are initially recognisable by a shrinkage (Text Box 2) initiated by the disappearance of the main economic activity;

- In general, IP are located in the vicinity of strong development centres (i.e. metropolitan areas) associated with the provision of Services of General Interest, defined by population, jobs, universities, hospitals, administrative centres, etc.

Text Box 2 Concept of shrinkage in Inner Peripheries

> Shrinkage is a general term that is used to describe a common 'symptom' in many Inner Peripheries. Shrinkage describes the general demographic development of decline. The specific context, causes and effects of shrinkage will differ in each situation. Nevertheless, it is important to notice that shrinkage is in principle a demographic trend of population decline, which takes place in the context of economic developments, other demographic trends, and political and socio-cultural factors that influence urban developments. One of the most important writers and thinkers on shrinkage is Philipp Oswalt. He defined shrinking cities as "cities that have temporarily or permanently lost a significant number of their inhabitants. Population losses are considered to be significant if they amount to a total of at least 10% or more than 1% annually" (Oswalt & Rieniets 2006a, b). However, a declining population does not necessarily result in problematic effects such as increasing unemployment or a decline in the level of the Services of General Interest. On the contrary, a slight decrease in the population can also have positive effects, for example on a strained housing market.

The following indicators therefore appear as relevant to identify IP: demographic trends (total population by age segments and out- and in-migration), commuting patterns (based on the working and living locations), size of labour market, and access to Services of General Interest. What remains challenging is the identification of critical thresholds for these indicators at the pan-European level.

3.2 Trends in Inner Peripheries

In order to assess the social, economic and environmental trends that may be associated with IP, the TPG defined eight transversal themes which were analysed using the literature review and two case studies:

- Economic vulnerability
- Demographic trends
- Accessibility and access to Services of General Interest

- Residential attractiveness
- Role of Information and Communication Technologies
- Natural resource exploitation
- Ecosystem services
- Protected areas and biodiversity as factors of development

Economic vulnerability and demographic trends

The age structure of the population is a key factor in IP, as a society with a high proportion of elderly (above 60) requires more services in the health sector (care homes, hospitals, etc.), whereas a society with a high proportion of children (under 15) requires more education services.

The decrease and ageing of population are closely linked to the decrease in jobs. Because of the lack of jobs, the population, especially young people with high mobility, find jobs in urban centres that require commuting a long time/distance (more than 1-2 hours) and then move out. A well-known trend is the migration from East to West Germany.

Consequently, demographic trends are an essential factor in explaining the economic vulnerability of IP. Population decline is a particularly important issue in recognising these areas, which run the risk of falling below critical population thresholds for maintaining service provision levels and a sustainable labour market. These demographic trends are similar to the geographic specificity 'Sparsely Populated Areas' although, in the latter, the trends are independent of the surrounding socio-economic developments. Unfortunately, it has only been possible to compile data at the LAU2 level on total population for the years 2001 and 2006. Current initiatives to compile harmonised LAU2 population figures for previous decades would, if successful, make it possible to carry out a wide range of statistical analyses of IP, to be complemented by data from recent censuses.

It is impossible to identify one "typical" economic structure or labour market profile that could be dubbed "the inner periphery economy", as each case of this socio-economic specificity is different. Nevertheless, all these areas have an above-average share of employment in the public sector – often due to a generally low diversification of economic activity.

Some of the potential "specialisations" of IP rely on their specific location on the edge, or in between core development areas. Their lower economic development can guarantee more peaceful, remote and greener conditions compared to the surrounding areas. A focus on renewable energies, particularly biomass resources, is an opportunity in almost all IP. A concentration on this type of activities is not necessarily an advantage for population growth, as many of these activities – such as agriculture or forestry – require decreasing labour forces due to rationalisation, mechanisation, etc.; and primary products of low added value do not generate high income. In addition, both agriculture and tourism tend to be marked by seasonality of employment.

Accessibility and Services of General Interest

Proximity and easy access to hubs of socio-economic development and to key infrastructure such as airports is of key importance and can generally be hypothesized as having a great direct influence to offset the declining socio-economic patterns and trends in IP.

This has been the reason for the development of transport corridors to improve accessibility in some IP. One example is the construction of the Baltic highway, linking Northwestern and Northeastern Germany, in order to increase accessibility in the stagnating areas close to the Baltic Sea. However, it seems that the expected impacts on the IP in the region are not yet very visible. Similarly, in the Parkstad (NL) IP, enhancing accessibility by building a new highway, train services and a new airport in the nearby city of Maastricht has not yet resulted in the expected development. The WMK district has very good access to the rest of Germany, with the railway lines to Göttingen, Eichenberg and Kassel and Eisenach, and the highways 4, 7 and 38. However almost all highways are at the edges of the district. With the construction of the new Highway 44 crossing the district from northeast to southwest, it is expected that the accessibility to the closest MUAs will finally change.

Access to an airport may be taken as an indicator for the general accessibility of an area, and it could be expected that this access will be lower than the European average for IP. However, contrasting results were found in the case study areas. On average across Europe, 52% of population lives in a LAU2 area in which more than 50% of the territory has access to an airport of over 150,000 passengers per year within 45 minutes travel time. This percentage is completely different in the two case study areas: 0% in WMK and 100% in Parkstad, located near the Maastricht-Aachen Airport. Thus, access to airports is not consistently linked to IP.

Presence of urban agglomerations can be taken as an indicator for access to many different services. On average across Europe, 83% of the population live in or around urban areas of over 100,000 inhabitants. In both case study areas, this percentage is 100%. The case studies suggest that accessibility in time to urban areas is not a main issue for IP.

Residential attractiveness

In terms of social capital, IP often feature ‘tightly knit’ communities that were bound in the past by economic activities (e.g. mining industry) or historical-political reasons (e.g. border areas in the former GDR). These high levels of ‘bonding’ social capital should be complemented by openness towards extra-local actors, as local communities will rarely be able to generate development purely from within. This ties in with the topic of residential attractiveness, since an area that is not attractive for residents will inevitably lose population, and thereby the basis for sustainable provision of Services of General Interest.

The environmental capital is one of the main advantages of living in these areas, with more space for nature and less environmental pressure (e.g. traffic congestion, industry). This not only attracts residents through the

process of amenity migration, but also tourists, and thus contributes to employment opportunities.

In combination with the outmigration of younger people (due to lack of employment opportunities and/or education institutions), this means that these areas have rapidly ageing populations, which in turn puts pressure on welfare systems. Evidently, even though natural capital and social capital are important factors in choices of residence, they cannot compensate for a lack of job opportunities and of access to services.

Information and communication technologies (ICT)

IP are, in principle, not particularly disadvantaged in terms of ICT since they are relatively close to metropolitan areas and therefore near to markets and economic activities.

On the supply side, it is the national context that matters more than the fact that an area is an IP, as shown by the variations between countries. For example, while in Sweden or the Netherlands 77 - 79% of households have broadband coverage, in Greece this figure is only 34% and, in Romania and Bulgaria, less than 25%. In any case, the main challenge for IP is to attract private investors to supply these areas with broadband or mobile phone connections at low prices (similar to those in nearby urban areas), since the installation costs are higher per user.

Natural resources and ecosystem services

If natural resources are found in IP, their potential exploitation is easier than in the more densely populated neighbouring areas, where urban settlements and infrastructure occupy most of the land. Resource exploitation is important in terms of their economies and employment profiles. For example, the less urbanised land can be exploited for agricultural and forest activities, such as renewable bioenergy. In contrast with some geographic specificities, the use of these various types of natural resources can be beneficial for the development of local/regional economies in IP, because they are closer to major areas of demand and underdeveloped grid capacity.

Natural resources are the base for providing ecosystem services that directly or indirectly benefit human well-being. IP areas can provide vital ecosystem services both to neighbouring metropolitan areas and to the European continent as a whole. Examples are regulatory services (e.g. air and water purification, carbon sequestration), provisioning services (food and timber) and cultural services (e.g. cultural landscapes).

If the value of the environmental services supplied by the natural ecosystems were included to the total sustainable income measured in a territory, IP would become more valuable.

Protected areas and biodiversity

IP are currently not particularly characterised by higher levels of biodiversity and proportions of protected areas than the European

average. However, if the declining population trends persist and reach a critical threshold, their biodiversity could increase, more protected areas could be established, and their attractiveness for many types of recreation and tourism could increase.

Tourism is evoked as an important sector of activity and/or potential development opportunity for IP. For example, the area of the Parkstad case study in the Netherlands, a former international mining zone, is now promoted as the 'Green Metropolis', with cross-border cycling routes and information boards about the history of the region at the roadsides.

3.3 Strengths and weaknesses of Inner Peripheries – evidence from case study areas

The purpose of the two case studies was to obtain more in-depth understanding of the historical socio-economic processes leading to the IP specificity and how, in turn, this influences the social, economic and environmental performance of territories and creates development opportunities and challenges. The analyses were primarily qualitative, based on existing literature and interviews with key stakeholders in each area. The detailed analysis can be found in Annexes 1 and 2.

In order to synthesise the findings, the strengths and weaknesses linked to development opportunities were identified.

What are the strengths and linked development opportunities of Inner Peripheries?

The strengths of IP are generally associated with the functions that are scarce in the neighbouring areas ('filling the gap'), although this is obviously not all that matters. The main identified strengths are:

- Presence of natural areas, relevant for nature conservation itself, but also for other functions. Protected nature is attractive to live in and for recreation, e.g. the Green Heart in the Netherlands. However, if many people move there, this specific attractiveness will disappear.
- Unexploited space in central locations between cities or countries that can be used as 'low pressure' areas in highly densely populated regions or countries, for different functions such as:
    - Building areas for industrial estates or residential areas (e.g. for retired people);
    - Recreation and leisure activities (e.g. post-industrial cultural landscapes, attraction parks);

    - New green natural spaces that can be used for multiple functions, e.g. recreation and leisure, and becoming part of ecological networks or Green Infrastructure;
    - Production of energy, by using the space to provide the infrastructure for power lines, wind turbines, solar energy parks, etc.;
    - Production of food, biofuels and timber.
- Cultural and historical heritage, which is crucial for the regional identity of the population.
- Lower land prices in rural or peri-urban areas close to city centres. For example, in the centre of Liege, the land price is about 100 Euro/m^2, whereas in the nearby IP, the price is about 40-50 Euro/ m^2.
- Quietness and safety.

What are the weaknesses and associated challenges for Inner Peripheries?

The weaknesses of IP are mainly associated to the fact that the number of people living there is below the threshold for a healthy and stable economy and for the provision of Services of General Interest. For example, in Germany, the costs of infrastructure (e.g. waste water) are much higher in IP than in other regions. In Germany, it is estimated that a potential population of 40,000-50,000 inhabitants within commuting distance is the critical mass for development (BBR, 2006).

The main weaknesses recognised in the present study are listed below. It should be noted that this is the full list and does not apply to every IP:

- Ageing of the population, with young people leaving the area in search of jobs;
- Lack of jobs and high unemployment rates, fragile economic life;
- Poor public transport services, resulting in high travel times;
- Not all Services of General Interest are available, e.g. few or non-existent primary and secondary schools, health centres, cultural centres, cinemas, theatres, shopping centres;
- Non-existent, slow or expensive broadband connections.

The main obstacle to economic development is that not all the required services required to establish a new company are available nearby, e.g. banks, or tax experts. For such aspects, proximity is often necessary; the internet cannot replace everything.

3.4 Nexus model: identifying key linkages

One challenge in the analysis of the socio-economic effects of IP is that they are influenced by a wide range of factors. Socio-economic factors are prevalent, but other factors related to inherited features, macro-economic contexts, and institutional structures can also play relevant roles. With the aim of narrowing down the potentially infinite set of relationships and highlighting the most relevant ones, a graphic modelling approach was developed in the GEOSPECS project and applied to all case study areas (GEOSPECS Final Report, 2012).

The synthetic "nexus model" prepared for IP overall synthesises the main findings. In this case, the model (Figure 4) does not try to give an overview of inter-related processes within one particular area (and thus evidently does not consider overlaps), but attempts to summarize the set of processes that can be said to take place in *all* IP.

It is noteworthy to see how many parallels exist between this socio-economic specificity and the geographical specificities studied in GEOSPECS. The lack of critical mass is a recurring component of the "defining features". They produce similar effects in mountain areas, islands, Sparsely Populated Areas and Outermost Regions, generating not only challenges, such as structurally imbalanced migration patterns and limited access to services, but also opportunities based on strong local identities and other factors of quality of life.

These parallels seem to be a logical consequence from the fact that many geographic specificities result in areas of socio-economic stagnation.

Many of the opportunities identified are based on "soft factors" such as social cohesion, trust, tradition and adaptive capacity. These aspects concern all types of territorial specificities, and suggest that policies focusing on positive self-perceptions and internal branding could be further developed as instruments to counter the imbalanced demographic flows and brain-drain characterising many socio-economically and geographically specific areas, as the ones studied in GEOSPECS.

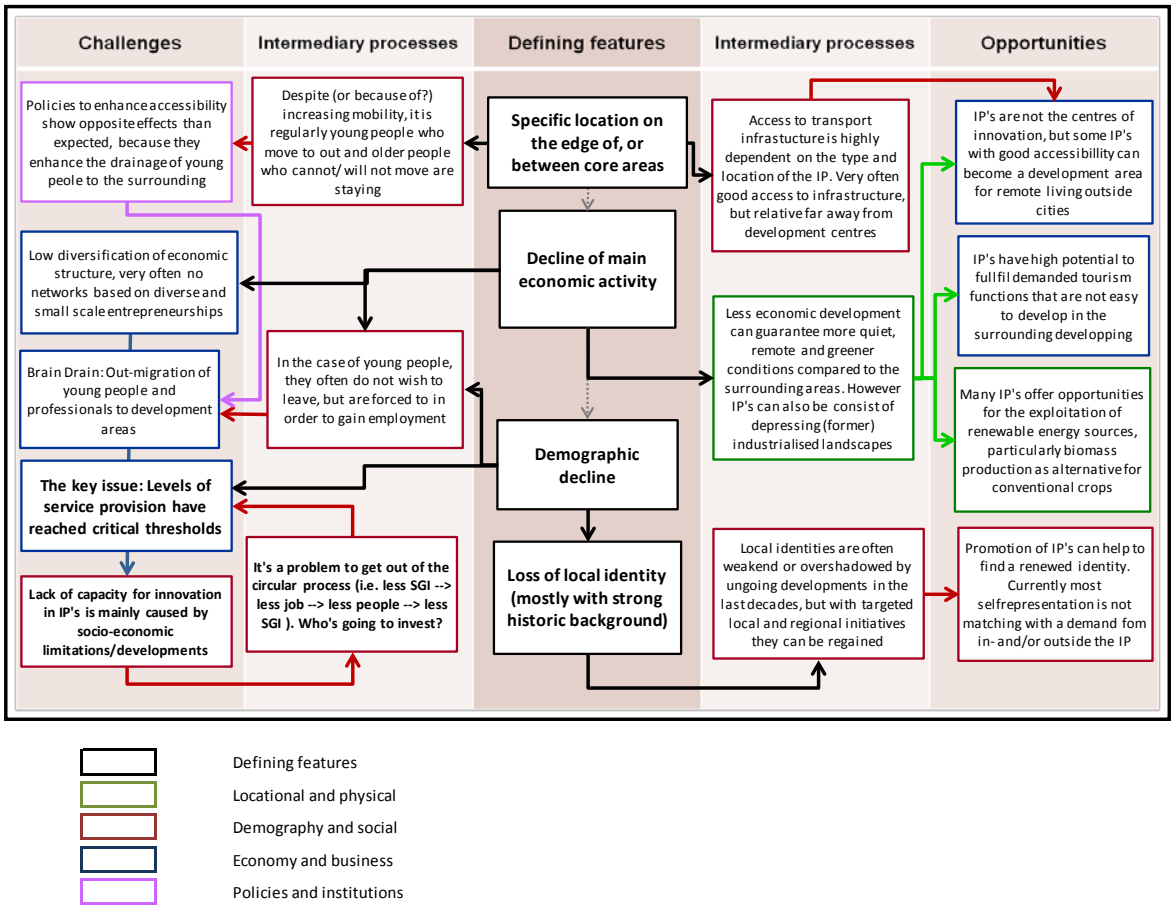


Figure 4 Nexus model for Inner Peripheries

The nexus diagram shows linkages between the historic legacy of these regions and the associated challenges and opportunities.

4. Policy options and future research alternatives

4.1 Policy options to approach the challenges and develop opportunities in Inner Peripheries

The development of the nexus model, in which the defining features are linked to the challenges and opportunities of the region under study, has proved to be a very useful framework to identify key factors and their interconnections – and therefore to find effective ways to answer the development needs of a region. The model can also be meaningful in a process of constructing a shared understanding of the most relevant socio-economic processes for the development of a locality or region and could be used to explore policy options.

Policy options at the national level

In the Netherlands, there is currently a debate to find new ways of development in these 'low dynamic' areas. On the one hand, it is thought that promoting new economic sectors can be vital, a 'new impulse'. On the other hand, measures preventing negative effects of development decline are also being considered. A crucial aspect is to determine the appropriate administrative level (national, province or municipal) responsible for the measures.

In Wallonia (Belgium), measures are being taken to increase the 'critical mass' of the individual municipalities by merging them. For example, Tournai is the largest municipality of Wallonia in terms of area, but not the number of inhabitants, and has been combined with 17 small municipalities or "communes". However, such efforts need to be accompanied by supporting measures to achieve a new balance of the functions. The main objective is to achieve a diversified economy by introducing small businesses and economic activities. In the United Kingdom, the supporting measures are also focused on local enterprise and economic development.

Sectoral policies can play a relevant role for IP, such as agricultural policies with subsidies to farmers for providing environmental public goods. Other relevant sectoral policies are those dealing with housing (second homes), industry, energy, transport and regional economic development programmes. In Germany, the most important sector is education, to provide equal chances to all children to be educated. It is very important to take care of those who stay in these peripheries because they are the future.

Policy options at the European level

The concept of IP, as considered at the national level, will probably change when approached at the pan-European level. For example, the two case study areas in Germany and the Netherlands are low development

areas within their respective countries. However, they have the potential to become development regions because they are centrally situated in Europe and could become connection nodes. In addition, IP close to national borders could change their role if approached at trans-national level. Therefore, at the European level, the first question is to find out if there could be a unique contribution of IP to the macro-regions, and what it is; and second, what policies are needed to ensure that they develop these potential contributions.

Within this context, the European policy areas that have been identified to be most amenable for developing IP are:

- Territorial cohesion, by helping to identify regions with similar socio-economic decline problems, analyse their common challenges and learn from best practices approaching them. For example, IP could play a role as *inter-urban areas* helping to strengthen the social cohesion between different large urban areas and thus enhance communications between the urban and rural fabric. 'Inner' peripheries can play an important role in territorial cohesion compared to 'outer' peripheries, since they are embedded in a better territorial structure - a potential to be used;
- Trans-European Networks (TEN) would be interesting for IP if they also focused on the development of the secondary lines (local and inter-regional transport). The current TEN infrastructure connects only large cities and enhances the isolation of IP;
- Structural Funds at national level; although some countries may have problems with eligibility;
- The Europe 2020 growth strategy, with its five ambitious objectives - on employment, innovation, education, social inclusion and climate/energy - to be reached by 2020 offers great opportunities to boost the development of IP because these objectives aim to deliver high levels of employment, productivity and social cohesion, which are directly linked to the challenges and opportunities identified for IP. In this regard, it is important to consider the interplay between the regional and the macro-regional scale, which is key in addressing IP. Policies seeking to maximise short-term growth in each region of Europe by focusing development on the centres of metropolitan regions ignore IP and will enhance population decline and other negative trends in these areas. In contrast, long-term policies maximising smart, sustainable and inclusive growth will need to be designed for macro-regions, considering the specific characteristics of each region and its unique contribution to the overall economic, social and environmental performance. Hence the role of IP will become apparent. The current approach, in which each Member State adopts its own national targets, will not deliver the expected outcomes without considering the differences between the regions and their different contributions;
- The national partnerships could help promoting the development of IP, using Structural Funds instruments for the next programming period such as CLLD. LEADER groups promote the participation of

local stakeholders in the processes of development and are also appropriate to approach the population shrinkage and other negative trends in IP (Breman & Vogelzang, 2012);

- IP could play an important role in the innovation of the agricultural sector (e.g. bio-based energy, provision of environmental services) because there are few conflicts over land use. Thus the new Common Agricultural Policy could support these developments.

4.2 Future research alternatives

The findings indicate that IP are a socio-economic specificity that cannot be delineated in one coherent way at the European scale. The large variability of thresholds for the variables to be considered, and the current lack of harmonised datasets on socio-economic indicators at relevant spatial and time scales make this an unattainable task.

However, the analysis of the two case studies has revealed that some indicators are particularly useful to describe their specific situation, e.g. accessibility to metropolitan cores in terms of travel time and population potentials. The data on employment per economic branch and on the number of gainfully employed persons provide variable results when analysed for a single time step without a trend analysis.

Consequently, quantitative analyses of the socio-economic specificity of IP should be carried out at a meaningful spatial level, showing the real socio-economic dependencies. For example, when analysing jobs in some border regions, the national context may be still more meaningful: in some regions, people may prefer a job far from their home but within their country to a job closely located in an adjacent country. As for the GEOSPECS categories, such analyses require compilations of LAU2 data and data processing which are most efficiently carried out at the level of the ESPON programme as a whole. This calls for an alternative organisation of data collection and quantitative analysis.

The analysis of historical trends in demography (population, migration, ageing) and sectoral employment seems to be essential for mapping hot-spot areas for IP. In addition, further research should focus on describing the macro-regional context in order to understand the process leading a region to become an IP. What were the historical changes and the concurrent biophysical, economic and cultural context in that specific area and the surrounding areas? Considering the complexity of the interactions, the analysis should be done for several case studies distributed across the European continent, with available regional datasets at relevant spatial and time scales.

Finally, the assessment should be completed with analysis of the territorial dynamics of human attitudes. Why do investments in regional development work in some regions and not in others? Is there a human factor? In this regard, the use of agent-based modelling will be a useful tool to identify the human drivers and their inter-linkages.

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ANNEXES

Annex A Case study on Parkstad Limburg (The Netherlands)

1. Description of the case study area and its geographic specificity

Parkstad Limburg is a sub-region of the province of Limburg (NUTS 2), situated in the very south-eastern corner of the Netherlands. The name *Parkstad* comprises the Dutch words ‘park’ and ‘stad’, which literally translated means Parkcity. The name summarizes in one word the two sides of the identity of the region: a green region with hills but still one of the most urbanized regions in the Netherlands. It is selected as a case study area because it has a group of characteristics that fit well with the conceptual approach of IP developed in GEOSPECS. However, Parkstad also has features of a border area.

Parkstad Limburg is a collaboration between seven municipalities (Heerlen, Kerkrade, Landgraaf, Brunssum, Simpelveld, Voerendaal and Onderbanken) (see Figure 1). They work together to improve public services, transport and housing on a regional level. This collaboration started in 1999.

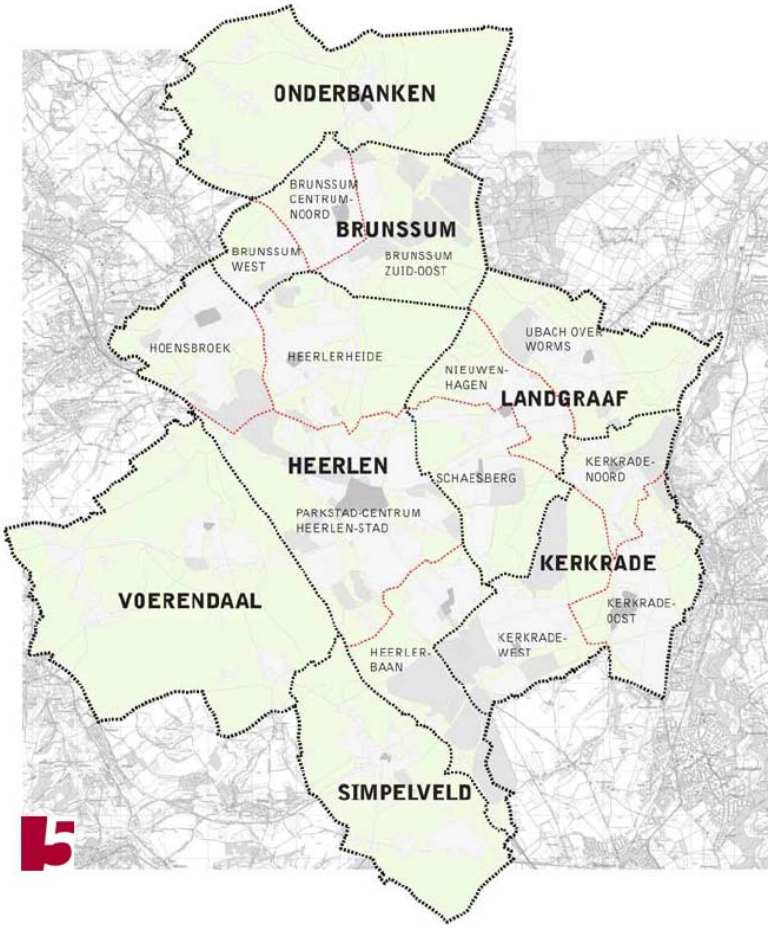


Figure 1 Municipalities and city districts of Parkstad Limburg. Source: Parkstad Limburg (2009).

IP is a new concept in the European policy arena, considered in spatial planning and regional development as 'places' that suffer from socio-economic decline or stagnation. This in indeed the main feature why Parkstad Limburg is considered as IP, being a 'shrinkage region' with a strong population decline. This decline is mainly due to its peripheral location in the south-eastern part of the Netherlands, close to the national borders with Germany and Belgium. Though this region is quite central in a European perspective, it shows a clear border effect compared to the neighbouring areas.

The main identification criteria of Parkstad Limburg are therefore:

- socio-economic, i.e. economic developments, demographic trends, political factors and socio-cultural factors, as explained in detail in Section 2. Briefly, population decline was caused by closing the main economic activity in the region (mining), which in turn caused the decline of the regional economy of the post-industrial Parkstad Limburg and a loss of regional identity. It is important to notice that this

declining economy is interlinked with declining labour participation and selective migration to more dynamic areas with more economic opportunities, resulting in a decline in Services of General Interest. In addition, the housing market is unbalanced.

- geopolitical: border region with Germany and Belgium.

Map 2 shows that *Parkstad Limburg* is not less accessible than other neighbouring metropolitan areas. While travel to Amsterdam or The Hague takes about three hours, a trip to Brussels or Cologne only takes one hour. Cities like Liege, Genk, and Hasselt are within half an hour and Aachen is very close to the borders of Parkstad Limburg. Therefore, the peripherality is not due to its lack of accessibility to close urban centres but rather to the geopolitical centres of the country.

The population potential in *Parkstad Limburg* is intermediate (Map 4), due to the very low values in the neighbouring areas of Wallonia (Belgium), and the very high values measured in the nearby areas in Germany.

In conclusion, it has not been feasible to map Parkstad Limburg based on a set of indicators that are static in time and do not show the temporal trends, which is the key factor describing IP. Additional maps showing dynamic developments in key socio-economic indicators, e.g. employment, net migration, ageing, are therefore needed to characterise this IP.

2. The four key development factors of the Inner Periphery Parkstad Limburg: economic developments, demographic trends, political factors and socio-cultural factors

This description of the four key development factors of Parkstad Limburg is mainly based on the work of Elzerman (2010).

2.1. Economic developments

In general, economic developments are important and influential aspects of urban developments. Since employment is an essential aspect of the attractiveness of cities, de-industrialisation and the lack of new economic paths result in a decline of population. The economic viability of a region provides the context for possibilities and limitations of urban development. Especially when irreversible demographic trends such as ageing and decreasing birth rates are present, a weak economic situation can exacerbate population decline. The detailed description of the economic processes that lead to the current situation of Parkstad Limburg, explained below, helps to understand the current situation.

Mining industry and the polycentric spatial structure

After a long agricultural period, with a single coal mine at Kloosterrade, the region of the current Parkstad Limburg flourished along with the rise of the mining industry from 1900. The mining of coal provided an increasing number of jobs. In 1902, the state mining company of the Netherlands was founded, later transformed into the Dutch State Mines (DSM). As well as the state-owned mines, there were privately-owned mines which, together with DSM, became the major employer of the region. The presence of the mines was the economic motor of the regional economy and brought about a rise of prosperity in the region (DSM 2009a). The mines of South Limburg supplied the national demand for coal and became an essential part of the Dutch economy. After World War II, the mines played a significant role in the years of national rebuilding.

Industrialisation led to rapid urbanisation in the mining region. The so-called mine colonies provided the housing to the mineworkers and became tightly-knit communities with close ties to the specific mines. This resulted in a substantial fragmentation of both industrial and residential settlements, not only in the Dutch mining region, but also in nearby regions in Germany and Belgium. There was a densely populated zone of industrial and mining activities crossing the borders of all three countries. The region's original landscape of green hills and heathland became heavily dominated by industrial and urban developments around the coal mines, resulting in a mix of industrial, residential and natural land uses.

De-industrialisation and economic decline in Parkstad Limburg

Due to the rise of fuel oil, gas and other fossil fuels, the coal mining industry became less profitable. The state mines started making massive losses and the prognosis was that the mines could no longer play a significant role in the Dutch economy. In 1965, the Minister of Economic Affairs decided to close the mines down. Between 1966 and 1973, all mines of the region closed. About 45,000 people lost their jobs and the mono-sectoral region's economy lost its major motor (De Graaf, 2005). In Parkstad Limburg, the closure of the mines was experienced as a catastrophe. Besides the economic recession that followed the massive loss of jobs, the closing of the mines resulted in a trauma for the population of the region, who felt being let down by the national government, so that their regional pride was damaged (De Graaf, 2005).

Despite the closure of the mines, DSM was able to stay afloat by diversifying its activities, and is now a multinational. Its core business is creating products and innovations in a wide range of 'life sciences and material sciences' (DSM 2009b). Nevertheless, the number of jobs in DSM decreased dramatically and the specific and heavy mine working and its training schools became unnecessary. Due to its international orientation, the ties with the regional economy have become less important for DSM. Following the 1970s national policy on regional development, it was

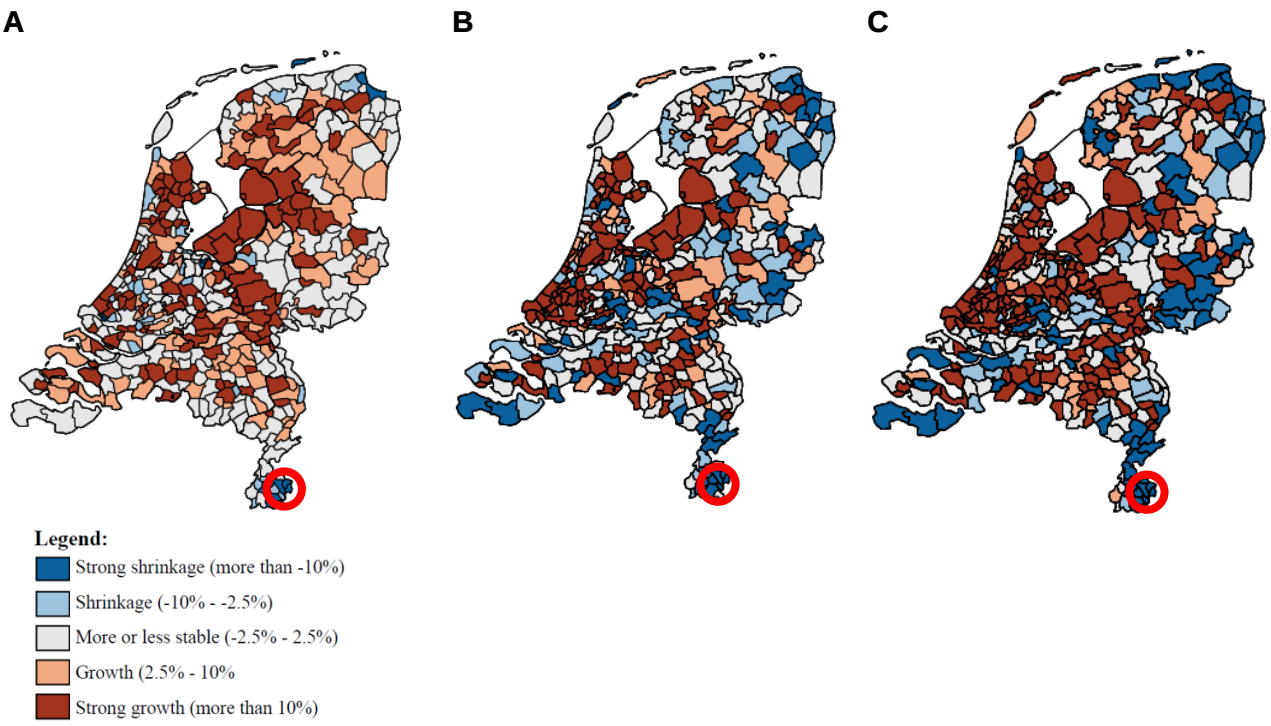
decided to establish large employers in the region to compensate the loss of the mines. First, the factory of DAF opened its doors, providing blue-collar work. Later on, the headquarters of CBS and ABP were relocated to Heerlen, providing white-collar jobs that attracted many people from the west of the Netherlands to Heerlen and its surroundings. Another effect of the rise of professional employment was an increasing mismatch between the old working class employees and the new professionals, which led to a further erosion of social cohesion: a process that began with the closing of the mines. Despite these top-down initiatives to create new jobs, the regional economy never fully recovered and, for the first time in the history of Parkstad Limburg, emigrants outnumbered immigration because people increasingly moved in search of employment elsewhere (Smeulders & Latten 2009). Lack of economic diversity limited recovery from the loss of the main economic motor. This phenomenon is very similar to the problematic mono-cultural economic situation of other de-industrialising cities like Manchester, described by Beyer (2005), Grant (2005) and Kidd (2005). Economic aspects, particularly employment, determine the viability of the region and influence all sectors of society.

New economic activities: Tourism, Housing

The fact of being an IP influences the pattern of economic relationships between Parkstad Limburg and the surrounding regions. This former international mining zone is now promoted as the 'Green Metropolis', with border-crossing cycling routes and informative boards about the history of the region at the roadsides. It therefore plays a particular role in terms of tourism, as a provider of green areas and leisure services for neighbouring metropolitan areas. However, this role has only partly been achieved, since Parkstad is one of the most urbanised areas of the Netherlands. Despite claims that Parkstad is the "fastest growing tourist destination in the Netherlands", this does not seem to compensate for the continuous industrial decline. In fact, Parkstad is relatively unknown as a touristic region and it is not an official geographical designation (e.g. it cannot be found on maps or satnav systems).

2.2 Demographic trends

The Dutch Central Statistical Office (CBS) and the Netherlands Environmental Assessment Agency (PBL) predict that *Parkstad Limburg* will have lost *c.* 15,000 of its inhabitants by 2025 (De Jong & Van Duin 2010), from a total population of 238,684 on 1st January 2008 (Parkstadmonitor 2010). CBS and PBL also predict a population decline of approx. 2.5% in at least 25% of the Dutch municipalities by 2040 (Figure 2). This means a decline of c. 250,000 people, especially in the peripheral regions of the Netherlands. This is in contrast with the predicted growth of c. 1,250,000 people in the central regions like the Randstad.



Source: De Jong & Van Duin (2010).

Figure 2 Municipal population development in the Netherlands

A from 1998- 2008; B from 2008 – 2025; and C 2008-2040. Parkstad is indicated with a red circle.

Despite the economic developments being very similar to other de-industrialised shrinking cities, the predicted future shrinkage in Parkstad Limburg is thought to be predominantly the result of demographic trends such as **ageing**, as shown by the growing number of care homes in the area. The post-World War II baby boomers will become senior citizens in the coming decades, as is clear from the population pyramids of all Western European countries. However, there are regional differences in ageing in the Netherlands. In 2005, the national average of senior citizens (> 65 years) was 14.0% (CBS StatLine 2010). The provinces of Limburg (15.9%), South Limburg (17.0%) and Parkstad Limburg (22.0%) had the highest proportions. The percentages in these border provinces are more comparable to the relatively high ageing rates of the neighbouring countries of Germany and Belgium, than to the Netherlands as a whole (Thissen & Poelman 2009; De Witte 2009). In the province of Limburg, the demographic trend of ageing is accompanied by relatively **low birth rates** and **higher death rates** than in other regions in the Netherlands. In 2005, the average birth rate of the Netherlands was 11.5 ‰, whereas Parkstad Limburg's birth rate was 7.9 ‰, comparable to neighbouring Germany (Thissen & Poelman 2009). In the same year, the death rate of Parkstad Limburg was 11.0 ‰, one of the highest in the Netherlands (average 8.4 ‰). Like the birth rates, the death rates of South Limburg

strongly resemble the neighbouring areas of Germany and Wallonia (Thissen & Poelman 2009), in contrast to the growing economies and populations of nearby Hasselt (BE) and Aachen (DE).

Migration. Due to the lack of highly qualified jobs, a rising number of young people leave the region to find a job matching their level of education. In particular, people who were educated elsewhere in the Netherlands increasingly find a job outside of Parkstad Limburg. Other segments of the population who leave are young people moving to university cities, families who find a house that meets their demands elsewhere, and emigrants starting a new life (Latten & Musterd 2009).

In conclusion, although the economy forms a crucial context for the regional development and the closure of the mines has caused a decline of population, the current population shrinkage is predominantly a demographic development of ageing, decreasing birth rates, and selective migration.

2.3 Political factors

Political factors influencing the decline in Parkstad Limburg especially concern the **peripheral geographic location** in relation to the core of the Dutch national economy, or 'Randstad'[2]. The response of policy makers to the socio-economic decline has a great influence on current understanding of the periphery: Parkstad Limburg as the Dutch periphery, or central in the Euregion. Dutch policy is mainly based on the economic growth of the Randstad and the nearby economic regions. Within the Dutch context, South Limburg is a peripheral area relatively far from the economic centre of the country. As a result of its peripheral geographic location and the loss of the economic advantage of the mines, South Limburg has not been of main interest to the Dutch national economic policy.

[2] The highly urbanized area of the Netherlands dominated by Rotterdam, the Hague, IJmuiden, Amsterdam, and Utrecht.

Source: Google Earth (2010)

Figure 3 Euroregio

In the **context of the Euregio** (Figure 3), Parkstad Limburg's geographic location is **central** rather than peripheral. The regional orientation on Germany and Belgium underlines that Parkstad Limburg is part of the Euregio, a trans-border zone of urbanisation with collective roots in the mining industry and trans-border urban developments (BNA, 2008). However, the concept of the Euregio as one economic mega-region is very complex. The region is composed of four different cultural regions (Dutch, German, Flemish and Wallonian), with **barriers in language** (Dutch and Flemish, French and German) **and legislation**. The bureaucratic barriers, in particular, hinder economic start-ups across a border. For example, when a company in Kerkrade (NL) wants to open a branch in the neighbouring Hertzogenrath (DE), the entrepreneur has to cope with complex and costly legislation on import and export. Because of these legislative differences, the border remains an obstacle for developing an Euregional economy. Taking away such obstructing legislation is crucial to give the region a chance to develop a new economic perspective.

It is remarkable that all the sub-regions of the Euregio are geographically peripheral regions in relation to the economic centres of their nation states (the Netherlands, Germany and Belgium). In Belgium, Brussels and Antwerp are the national economic cores, while in Germany the city of Aachen is part of the federal state Nordrhein-Westfalen, with approx. 18 M inhabitants, comparable to the number of inhabitants of the Netherlands (approx. 17 M) and larger than Belgium (approx. 11 M). However, Nordrhein-Westfalen also includes the urban regions of the Ruhr area, Dusseldorf, Cologne and Bonn, which makes the city of Aachen a

relatively small city in the German context. As a result of differences in national fiscal policies in the Euregio, such as the possibility to maintain mortgage deductibility, it is beneficial to buy a house in Germany or Belgium rather than the Netherlands, so that thousands of people have moved to Germany or Belgium because of lower real estate taxes (Das & De Feijter, 2009). On the other hand, it is expected that the growth of the RWTH University in Aachen, which has been designated as one of the German international elite universities, creates an opportunity to attract people from Germany to Parkstad Limburg because Aachen is facing its spatial limits to expansion.

On the other hand, the degree of accessibility and connectivity that has been achieved in Parkstad derives from national and European policies from 1978-2000:

- At national level: With the 'White Paper of Perspectives for South Limburg' (PNL policy) in 1978, the government tried to boost the economy by investing in, for example, education, infrastructure, health care and tourism. The idea was clearly that a flourishing economy would generate new job opportunities. However, because of the economic crisis, the PNL policy did not have immediate effects. In 1981, the former mining region reached its highest unemployment rate ever: 11.7% for the male workforce and more than 20% for the female workforce (Derks et al., 2006). The PNL policy enabled the regional body to invest in the airport of Maastricht to become an important European logistical hub, a new highway (A73) to connect with the Randstad, and a train track from Maastricht to Liege, a container terminal for river transport with Rotterdam and the rest of Europe. Despite all the good intentions and the large investments in projects like a new runway for Maastricht airport and a large container terminal, 25 years later these two projects are still not finished, and will most likely not be in the future.
- European policy: European Regional Development Fund (ERDF). From 1989 to 1999, more than 400 million guilders of European funds were invested in South Limburg. Amongst the funded projects were many with themes such as infrastructure, business potential, innovation and tourism.

2.4 Socio-cultural factors

Relevant socio-cultural factors in Parkstad Limburg are:

- the regional fragmentation of cultural backgrounds. As a result of the fragmented mining settlements, every settlement formed a community on its own, which encouraged micro-chauvinism and feelings of regional competition between these communities. This is a crucial contextual factor in local politics and regional collaboration. In addition, the strong separation of local identities is enforced by the many existing dialects, with clear differences in language.
- the dominant role that the church has played in the region with an extensive network in the society, by means of representatives in the mines and sport clubs. This enabled the church to influence the life of the people, for example by assigning people to jobs and other functions in the society. This slowly stimulated a watch-and-wait attitude among a part of the inhabitants, while the stimulus for entrepreneurship declined.

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Annex B Case study on Werra-Meißner Kreis (Germany)

1. Background and general information about Werra-Meißner Kreis

Werra-Meißner is a Kreis (district) in the north of the federal state of Hessen ("Werra-Meißner-Kreis", WMK) and is geographically located in the centre of Germany (see Figure 1). The capital of the district is the small city of Eschwege (c. 20,000 people). The total area of the district is 1025 km^2, with a population (2010) of 103,750 (WMK, 2011). The region is located in the border triangle of the federal states of Hessen, Thuringia and Saxony. Before the reunion of East and West Germany, WMK was a West German District located at the edge of the former inner German border (WMK, 2011, 2012).

Geography and land use

The landscape is dominated by wooded hills alternating with scenic agricultural mountain valleys (Table 1). The Werra is the largest river, crossing the district from southeast to northwest. The highest peak of the state of Hessen is located in the heart of the WMK; "der Hohe Meißner (754 m)". These two geographic features gave the district its name. The WMK is bordered on the east by the foothills of the Eichsfeld region, to the northwest by the Kaufunger Forest, to the west by the Lichtenauer plateau, and to the south by the Stölzinger Richelsdorfer mountains (http://en.wikipedia.org/wiki/Werra-Meißner-Kreis)

Table 1 Land use in Werra-Meißner Kreis (WMK, 2012)

Land use	*Km^2*	*%*
Forest	445	43%
Agricultural	438	43%
Built up Area	47	5%
Water	14	1%
Roads, railroads	61	6%
Other land use	19	2%
Total	1025	100%

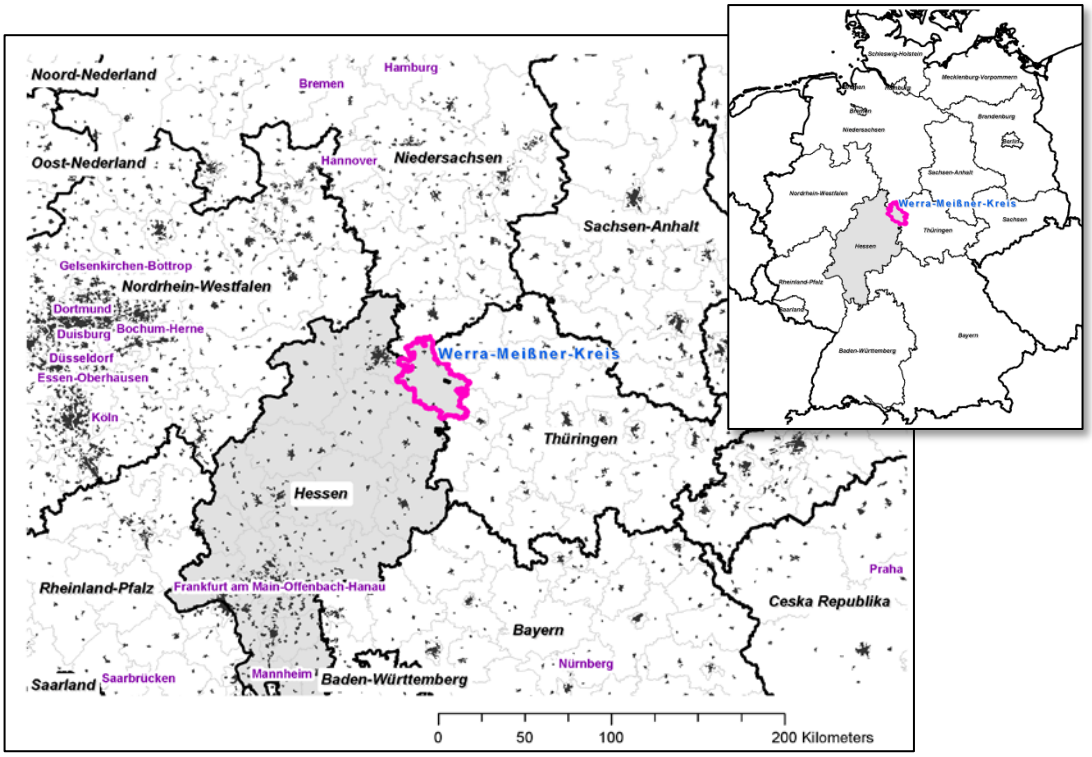

Figure 4 Location of the Werra-Meißner Kreis (WM district) in the centre of Germany

Trends in demography

WMK is one of the first regions in the old federal states strongly affected by demographic change. With a low birth rate and a declining population, WMK is underperforming (also in terms of economic development) compared to the rest of Hesse.

To address the negative effects of demographic change, a range of projects focus on:

- securing good living conditions in the region;
- defining new regional perspectives;
- stimulating company investments by offering newly developed human resource concepts (e.g. innovative child care, guaranteed housing facilities for employees from outside WMK).

As shown in Figure 2, Figure 3 and Figure 4, the main challenge will be to face the on-going decline in the population (mainly younger people) of the region. The decline has already been going on for approximately 15-20 years, and is expected to continue for the next 25 years. This decline and shift in age structure is challenging the region to maintain existing, and develop new access to, Services of General Interest for all the people in the region. The following section describes how WMK is trying to face this challenge with the design and implementation of a master plan combined with specific measurements to tackle this transition.

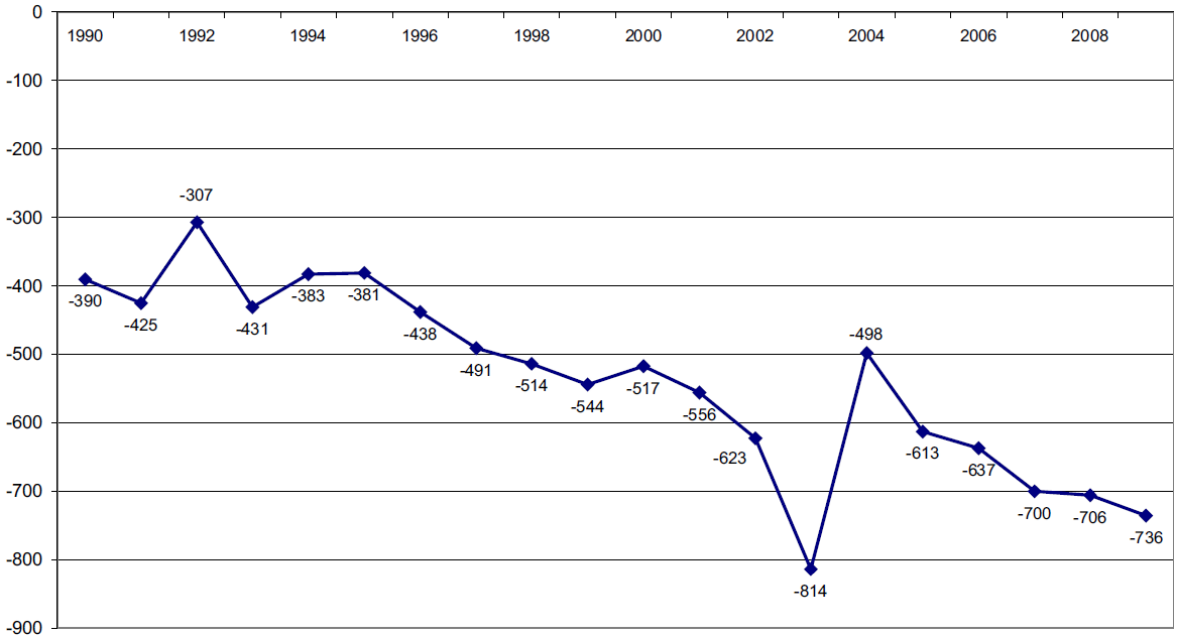

Figure 5 Werra-Meißner Kreis population trend 1990-2008 (VfR 2011)

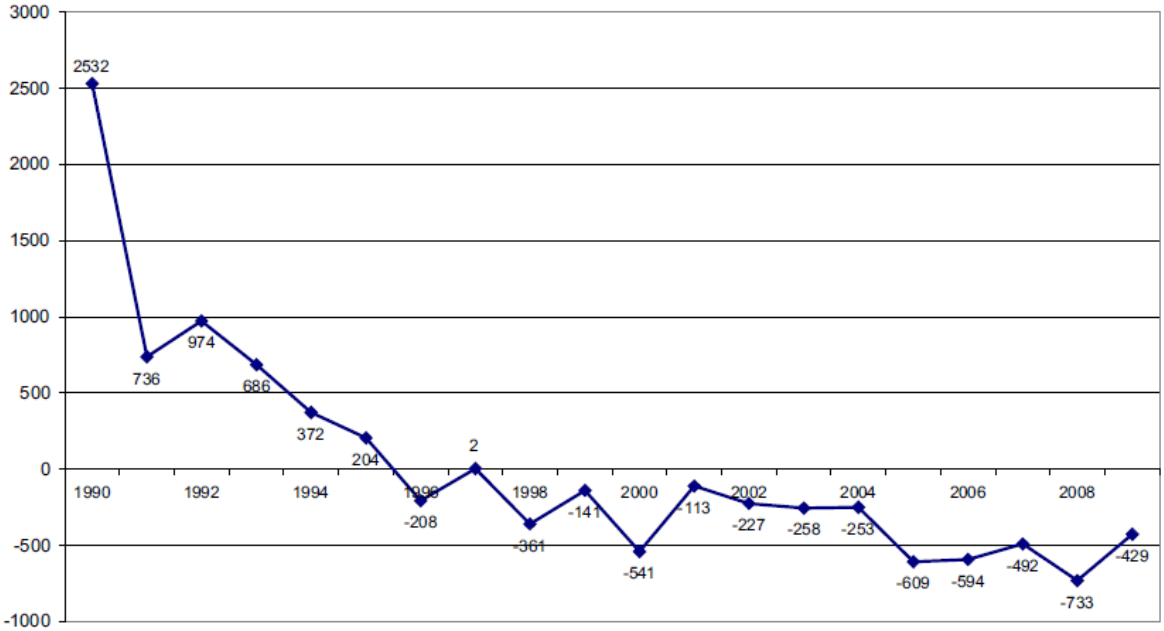

Figure 6 Werra-Meißner Kreis net migration 1990-2008 (VfR 2011)

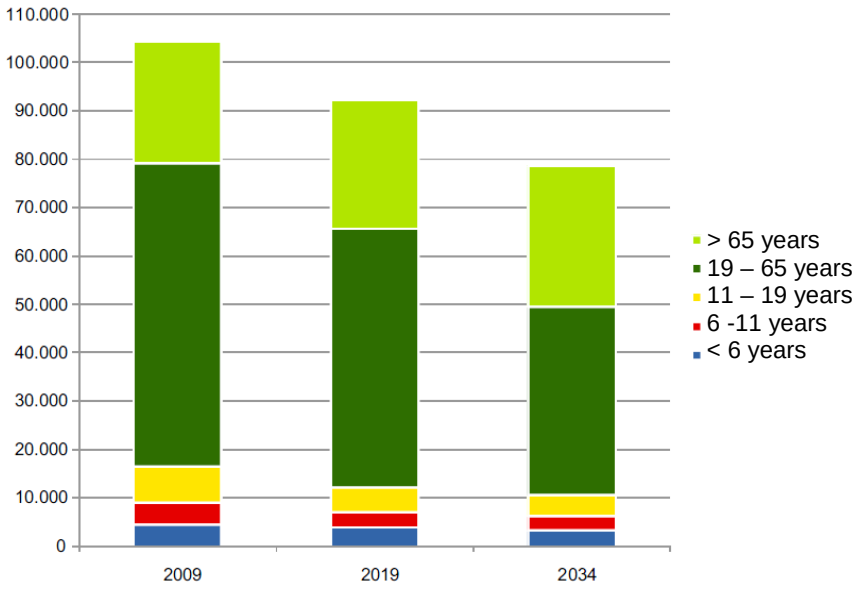

Figure 7 Werra-Meißner Kreis expected age structure 2009-2034 (VfR 2011)

An Inner Periphery of accessibility and geographic population potentials

Figure 5 shows the travel time to MUA's with > 500000 inhabitants. It is clear that WMK is situated exactly in the periphery of five major industrial/development areas, all just over two hours of travel time away (Table 2). This means that the region is definitely outside the daily commuter distance and therefore too far from these centres to have a strong structural relationship.

At the regional scale (Figure 1), WMK itself does not contain a MUA, but is situated in the periphery of the more smaller MUA's such as Göttingen, Kassel and Eisenach. The travel time from Eschede (in the centre of WMK) is just outside the 45-minute commuter distance. This also explains the high percentage of the working population dependent for work on commuting to other districts (+/- 30%). With the railway lines to Göttingen, Eichenberg and Kassel and Eisenach and the highways 4, 7, 38, the WMK has very good access to the rest of Germany. However, the highways are mainly at the edges of the district. With the construction of the new Highway 44 crossing the district from northeast to southwest, this will change.

Although the population potential (45-minutes travel time from WMK) is still clearly low compared all areas surrounding the district, it is still relatively high compared to areas in the former East Germany (e.g. surrounding Berlin) or the nearby parts of the Czech republic.

Table 2 Travel time from Eschwege WMK to main cities surrounding WMK

Werra-Meißner-Kreis	Direction from WMK	Travel time (min)	Fastest Travel distance (km)	Shortest. Travel distance
Göttingen	N	50	54	50
Kassel	N	55	50	50
Erfurt	E	83	105	86
Paderborn	NW	105	145	125
Hannover (*)	N	120	178	159
Frankfurt (*)	SW	131	195	178
Würzburg	S	135	217	193
Dortmund (Ruhrgebiet) (*)	W	153	212	208
Magdeburg	NE	155	244	193
Leipzig (*)	E	159	239	185
Nürnberg (*)	SW	192	285	240

(*) = MUA > 500.000 inhabitants

2. Inner Peripheries: planning to secure access to services of general interest

The WMK has recently successfully implemented the pilot project "region creates the future" of the Federal Ministry of Transport, Building and Urban Development (BMVBS) and the Federal Institute of Building, Urban Affairs and Spatial Development (BBSR) (VfR, 2011). The aim of the pilot project was to show examples of how a region can face the challenges of demographic change and what strategies lead it to success. The project included a half-year process in which a master plan for development was created. More than 25 development projects related to the master plan have been set up and implemented.

The Master Plan is a reaction to the changing demand and rising costs of public Services of General Interest, aiming at offering lower-cost alternatives. The greatest need for adaptation can be seen in the field of social services for families and older people. There are also needs for adaptation and creation of new initiatives in the fields of culture and education, energy, residential areas and accessibility. The plan shows the desired development path of the WMK in terms of content, procedures, organizational structures and decision-making, participants and process design. This approach can be characterized by the following eight points:

1. *Development of action and adaptation strategies*: aimed at developing a master plan for WMK with different action- and adaptation strategies, having as main objective to apply these strategies in comparable German IP-areas in the future. The main topic for WMK are the effects caused by demographic changes.

2. *Adapt and design*: For most regions, the consequences of demographic change not only challenge them to do something different than before; the regions also have to be opened up for real action. IP have to go beyond a standard approach of adaptation which mostly focuses on closing, concentrating or shrinkage of Services of General Interest in the region. It is essential that adaptation and implementation of a new design is not a fixed idea imposed from outside, but comes from inhabitants and stakeholders within the region. Their ideas and topics are important for designing the adaptations.
3. *Accelerate the development process*: the challenges to develop strategies to adapt to demographic challenges for the municipalities of the WMK is not new. Since at least 2004, this issue has been handled in different ways within the district and the Association of Regional Development for the Werra-Meißner-Kreis (VfR). This can be seen as the interface between the public and private actors, ensuring a broad participation and cooperation of citizens, initiatives, associations and organizations from the fields of ecology, economy and social issues (http://www.vfr-werra-Meißner.de). In 2007, a regional development concept for inclusion in the LEADER program was developed which can be seen as the basic view of the region facing the demographic challenges. With the inclusion in the pilot project, eight thematic areas were selected to speed up the desired development processes.
4. *Use a long planning period*: For the preparation of the master plan, a long period of 25 years (or the respective forecasts) for the individual thematic areas was used. This results in a relatively high uncertainty of forecasts at the municipal or district level, but can also make the future developments in the region clear over a long period. It also ensures that the plan does not just look at short-term trends, but focuses on a long-term stable development.
5. *Develop an integrated approach*: As part of the master plan of general interest, it was possible to integrate the work on eight thematic areas grouped into three parallel working groups. As a result, the plan is more than an accumulation of several sectoral approaches with individual important issues. This has been demonstrated both in the design of master plan itself, with a clear interaction with other thematic areas as the choice, and in the implementation of the projects. Each working group included a broad and balanced variety of experts from public and private sectors. This was characterized in the way the topics were (mostly very detailed) discussed. As a result, the working groups could straightforwardly define recommendations for action in close coordination with the steering group.
6. *Go for broad participation*: The master plan was not processed by a single employee of the county government alone, but together with other actors in politics and administration, specialists, etc. A total of 80-200 people regularly were involved in the process.

7. *Use a dual responsibility*: the process of designing the master plan was created in a joint project by the VFR and the district administration of WMK. Various departments of the WMK government were involved, as well as the Local Action Group of the Association of Community Development and economic and social partners. From the beginning of the project, this dual responsibility has spread the development of the master plan to many people. This is important for its implementation, which can only succeed through a broad comprehensive process in which all key regional actors are represented.
8. *Stabilise the plan*: For both representatives and participants of the Master Plan, a broad consensus is needed to continue the process beyond the initial pilot projects. This involves the implementation of the achieved results, but also the inclusion of other topics into the process. For the implementation of the master plan to date, the political, financial and structural requirements have been met.

3. From idea to implementation: Securing Mobility in WMK

This section illustrates the working group dealing with accessibility and mobility, explaining the main issues, the proposed development directions and an example of an implemented project (VFR 2011).

"Securing mobility combined with alternative forms of shopping and getting-together"

The securing of mobility is one of the fundamental tasks of general interest in rural areas, since it provides access to primary health care, educational and cultural activities. In the master planning process, it was acknowledged that accessibility is a cross-cutting issue that touches all the other development sectors. Organisationally, the issue of accessibility to Services of General Interest in the region was used to evaluate and develop strategies of local development. There was less focus on improving the access to more distant areas of development, since the region is already connected in all directions by four different major highways http://www.lebensraum-werra-Meißner.de)

1. Evaluation of existing level of services

Evaluation was done by firstly assigning three levels of centrality to each village and city. Each level corresponds to a number of services present.

- The accessibility of local shopping centres surrounding throughout the county was evaluated as fairly good. In the evening, large parts of the district – especially those areas further away from the shopping malls and railway lines – have no return connections by public transport.

- Evaluation at the level for the more central locations shows that the southeast of the district has some accessibility disadvantages (long travel times).
- Access to the most central places (Bad Hersfeld and Eschwege, but also taking into account the MUA's surrounding WMK), showed that Eschwege needs to play an important role for the smaller villages because it is the most central location for most people in the district.

2. Development of new Strategies

Based on the evaluation of all other themes and their needs for development, the accessibility deficits were integrated into the master plan. By integrating other topics, a specific and targeted measurement plan could be drawn. Figure 5 shows an example of some of the targeted measures to improve the public transport services in the region.

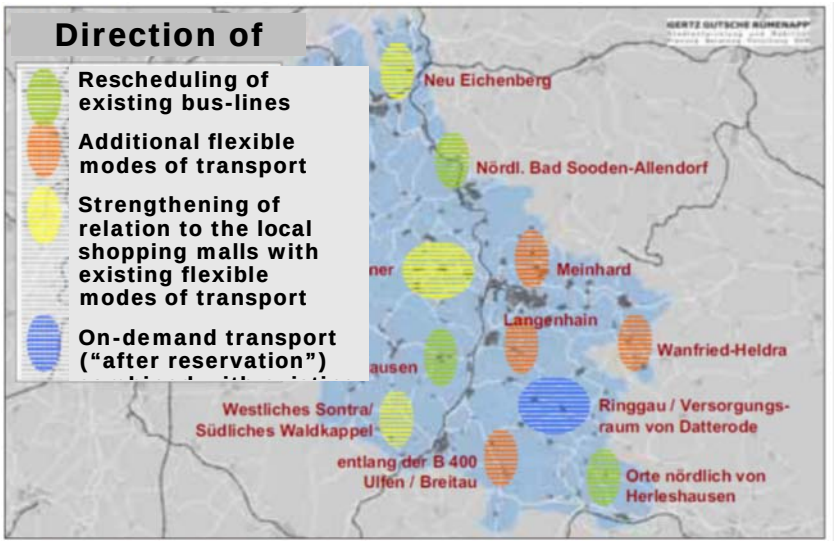

Figure 8 Proposed measures to improve public transport services (VFR 2011)

3. Implementation of Strategies

"Project example: Mobility concept Ringgau – Weißenborn"

As part of the master plan, the mobility for the community Ringgau Weißenborn was worked out in detail. The basis for adapting the existing transport service to Ringgau village was the outcome of the integrated approach, in which a newly created Supply Centre plays an central role. This combines local shops, meeting places, and health care and can be seen as an alternative means of providing these services in rural areas compared to the traditional more scattered provision. Simultaneously, the Supply Centre should be made accessible from all the municipalities

surrounding Ringau-Weißenborn in order to guarantee a successful operation. The result of an intensive participatory process resulted in the concept of a "medical and shopping bus Ringau - Weißenborn," along a route that connects all service points in the villages. The operation is organized internally from within the local community, using volunteer drivers. A pool of community-owned cars provide the service. The "Shopping bus-model" is deliberately trying to keep the entry requirements very low (e.g. no passenger tickets).

The fact that the Supply Centre is profitable in the short term and is functioning make it clear that this targeted participatory approach can result in a well-designed and integrated plan.

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Economic and Employment Data WMK

Economic Data 2009-2010

Number of companies	**6188 companies**
Of which:	
• Agriculture and forestry	134 farms
• Industry (including construction)	879 companies
• wholesale	368 establishments
• retail	1893 establishments
• Financial and insurance services	341 companies
• Information and Communications	148 companies
• Transportation and packing	156 companies
• Hotels and restaurants	487 establishments
• Other services	1782 companies

Crafts enterprises	**1229 companies**
Of which:	
• Electro and metal industry	341 companies
• Building and finishing industry	337 companies
• health, personal care companies	174 companies
• food establishments	96 companies

Tourism	
Available beds (without camping)	over 5,300
Number of guests	163 048
Number of nights	716 860
Average length of stay approximately	4.4 days per guest

Employment Data 2009-2010

Social insurance contributions (work)

• Men	12 660 persons
• Women	12 583 persons
• **total**	**25 243 persons**

Of which:

• Agriculture and forestry	441 persons
• Manufacturing industries excluding construction	6159 people
• Building	2116 people
• Trade, Transportation, Hospitality	5083 people
• Financial and insurance services	765 people
• Real estate, renting and business activities	51 people
• Public. Administration, Social security. Medical care	8178 people

Employed	**41 400 people**
Of which:	
• Agriculture and forestry	1,800 people
• Manufacturing	10 800 people
• Trade and transport	10 000 people
• Services	14 700 people

Commuters	
Commuting to outside WMK	12 918 persons
commuters working inside	6550 people