



Introductory Briefing Note

on the relevant context material
available to partners and contributors to the

PolyMETREXplus Interreg IIIC project

on the development of
polycentric studies, visions and strategies
for the spatial planning and development
of the wider Europe

Introductory Briefing Note

Extracts from the relevant context material available to partners and contributors to the PolyMETREXplus Interreg IIIC project on the development of polycentric studies, visions, perspectives and strategies for the spatial planning and development of the wider Europe.

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 - C A Spatial Vision for North-West Europe (September 2000) (www.uwe.ac.uk/fbe/vision/english/vision_e.htm)
 - D Norvision - A Spatial Perspective for the North Sea Region (Spring 2000) (www.mem.dk/lpa/English/interregIIIC.htm)
 - E Wismar Declaration and VASAB 2010 - Vision and Strategies around the Baltic Sea 2010 (September 2001) (www.vasab.org.pl) (See also www.balticpalette.com)
 - F Vision Planet - Strategies for Integrated Spatial Development of the Central European Danubian and Adriatic Area (January 2000) (www.uniserver.cz)
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1 The PolyMETREXplus project (see www.eurometrex.org)

Introduction

It is anticipated that the PolyMETREXplus project will commence in March 2004. In summary, it will run for the period 2004-2007, have an Interreg IIIC budget of €1.8m, include 19 partners led by the Generalitat de Catalunya (but also involve invited contributors) and be supported by the METREX Secretariat/Interpretariat. It is intended to hold an Inception Meeting in March, for partners and contributors, either in Barcelona or Bruxelles.

Purpose of this Briefing Note

The purpose of this Briefing Note is to inform all partners and prospective contributors of the relevant context material, on the issue of a polycentric Europe, that is available and to distill some key points from this. The Lead Partner has produced a related CD, which includes the full documentation, as an initial reference source and partners and contributors may wish to refer to some of these when preparing their own contributions to the project. The Lead Partner will draw on this material when preparing the Context Reports for the four PolyMETREXplus Analysis Workshops in 2004 through which the project will begin (see Diagram and Map in the Appendix A).

PolyMETREXplus - now a Network Operation rather than a Regional Framework Operation

The project has been modified and approved as an Interreg IIIC Network Operation rather than a Regional Framework Operation (RFO). The form and content of the project has not changed and the intention is still to have a Planning Component, in 2004-2005, leading to the production of a Framework for a Polycentric Metropolitan Europe and a related Action Plan. However, it is now intended to have a Practice Component (rather than a Project Component), in the period 2006-2007, to identify and progress 12-20 Representative Interregional Network Activities (RINA's) and a Polycentric Practice Benchmark (rather than 8-12 Representative Interregional Polycentric Projects (RIPP's) as envisaged in the RFO).

PolyMETREXplus objective

The objective of PolyMETREXplus, as set out in the Interreg IIIC Application, is as follows.

Overall objective -To contribute effective polycentric metropolitan relationships, based on complementarity and co-operation, to the draft European Convention objective of Territorial Cohesion and the ESDP objective of the balanced and sustainable development of the EU.

Core objective -To support the objective of Interreg IIIC "to improve the effectiveness of policies and instruments for regional development and cohesion" by producing a Framework for a Polycentric Metropolitan Europe, a related Action Plan and a Polycentric Practice Benchmark derived from a programme of representative interregional networking activities (RINA's).

Outline of the PolyMETREXplus project

The full PolyMETREXplus Interreg IIIC Application, in EN and FR, can be downloaded from the METREX web site at www.eurometrex.org. The main inputs and outputs of the project can be outlined as follows.

- Inception Meeting in Barcelona to clarify the form and content of the PolyMETREXplus Network Operation, over the period 2004-2007, and the administrative arrangements
- Context Reports by the Lead Partner for a programme of 4 geographically based (see Diagram and Map) Analysis Workshops, in 2004, through which groups of partners and contributors present and discuss Position Statements setting out their polycentric situations/perceptions and intentions/aspirations
- Findings and Conclusions presented to the METREX Barcelona Conference in October 2004 and a first Synthesis Workshop for all partners and contributors in 2005 to consider, discuss and confirm the report Towards European Urban Balance
- Context Reports by the Lead Partner for 2 sectorally based (see Diagram) Synthesis Workshops, in 2005, through which socio/economic and transportation/environmental issues will be explored by all partners
- A final Synthesis Workshop for all partners to consider, discuss and confirm a Framework for a Polycentric Metropolitan Europe and a related Action Plan
- PolyMETREXplus Steering Committee (all partners) identifies and confirms a programme of representative interregional network activities (perhaps 12-20) through which to test the feasibility of aspects of the Action Plan
- A PolyMETREXplus Practice Benchmark derived from the RINA's and related comparative examples and experience

2 The context material (see also PolyMETREXplus Context Briefing CD which includes documentation on the following sources)

Introduction

As a general observation, it appears that available documentation gives broad policy directions and priorities for the major European sub divisions concerned (NW Europe, North Sea, CADSES, Baltic) but only the CPMR study for the peripheral maritime regions of Europe is based on an analytical methodology that is directly relevant to the PolyMETREXplus project. Indeed, the work of ESPON in analysing the *functional urban areas* (FUA's) of Europe and possible *metropolitan European growth areas* (MEGA's) draws on this. The CPMR/ESPON methodology could form the foundation for the PolyMETREXplus Framework. The CPMR/ESPON documents also offer some of the few examples of the graphic, as distinct from written, form that a Framework could take.

A The Projects research programme of the European Spatial Planning Observatory Network (ESPON) to August 2004 (see www.espon.lu)

ESPON has undertaken a programme of research Projects, over the period 2002-2004, that is relevant to PolyMETREXplus. The programme concludes in August 2004 and therefore links well with the programme for PolyMETREXplus. It is hoped that ESPON will accept an invitation to make a presentation to the METREX Barcelona Conference in October 2004. Full documentation can be downloaded from the ESPON web site and the most recent relevant publications have been included on the PolyMETREXplus Briefing CD.

ESPON has proposed the following definition of polycentricity.

A polycentric urban system is a spatial organisation of cities characterised by a functional division of labour, economic and institutional integration, and political co-operation

The ESPON Projects cover the following themes (see Appendix B).

1.1.1 The role, specific situation and potentials of urban areas as nodes in a polycentric development (Third Interim Report - Parts 1-4)

The Third Interim Report covers the EU 27 +2 (Norway/Switzerland), identifies 1595 Functional Urban Areas (FUA's) with a populations over 50k (15k+ in the urban core) based on 7 indicators (Population, Transport, Tourism, Manufacturing, Higher education, Company HQ's, Administrative status and Economic base). From this analysis the 64 with the highest average FUA score have been identified as Metropolitan European Growth Areas (MEGA's). The details are set out In Appendix 2.

The Third Interim Report acknowledges that this data deals essentially with the form and function of urban areas and does not yet address the issue of the relationships between them. PolyMETREXplus can make a contribution in this area of the debate.

- 1.1.2 Urban-rural relationships
- 1.1.3 Enlargement of the EU and the wider European perspective as regards its polycentric spatial structure
- 1.1.4 The spatial effects of demographic trends and migration
- 1.2.1 Transport services and networks - territorial trends and basic supply of infrastructure for territorial cohesion
- 1.2.2 Telecommunications services and networks - territorial trends and basic supply of infrastructure for territorial cohesion
- 1.3.1 The spatial effects and management of natural and technological hazards in general and in relation to climate change
- 1.3.2 Territorial trends of the management of the natural heritage

B The study on the construction of a polycentric and balanced development model for the European territory - Conference of peripheral Maritime Regions of Europe (CPMR) (www.cpmr.org)

The CPMR study covers the Baltic area (Norway, Denmark, Sweden and Finland), UK, France, Spain, Portugal and Italy but excludes the core *pentagon* area (London, Paris, Rhine, Ruhr). The CPMR developed a typology of peripheral urban systems before the ESPON research Projects. It is based on 5 indicators (Competitiveness of the urban systems, Economic decision making centres, Human capital, Connectivity, Drivers of change) and has led to the identification of 41 Metropolitan European Growth Areas (MEGA's). MEGA's have a conurbation of at least 500k and other centres of 150k within 130km's. The total metropolitan population, on this basis, should then be at least 1m.

The study then goes further than this to cross reference the above indicators and categorise the 41 MEGA's as, Peripheral gateways, Rising stars, Dilemma systems (whose future depends on tackling major weaknesses in terms of competitiveness and connectivity) and Most peripheral systems (that are at risk of being left out of international dynamics because of their competitive difficulties and lack of connectivity). Key material is abstracted in Appendix C.

The study summarises the present situation with regard to the 41 MEGA's (Diagram 30 - Current situation), considers the implications of the continuation of present trends (Diagram 31 - Illustrative hypothesis - straight line development) and the benefits of a voluntary change of direction towards polycentricity (Diagram 32 Illustrative hypothesis - long term voluntarist development). These diagrams give one approach to the graphic representation of a polycentric metropolitan Europe and seek to illustrate visually the strategic benefits to be gained.

These 3 Diagrams have been used as a basis from which to extend the coverage to include the *pentagon* (see North-West Europe below) and Eastern Europe (see Vision Planet below) as shown in 3 - Synthesis for the PolyMETREXplus Inception Meeting (see below).

C A Spatial Vision for North-West Europe (September 2000) (www.uwe.ac.uk/fbe/vision/english/vision_e.htm)

The Vision includes an illustrative diagram showing Global cities and gateways, Strategic polycentric areas, Strategic centres, Eurocorridors, Corridors and transport axes to be strengthened, Communications bottlenecks, enhanced external connections and counterweight global gateways and economic centres. It has been used as a basis from which to add the *pentagon* to the CPMR illustrative Diagrams (see 3 - Synthesis for the PolyMETREXplus Inception Meeting).

- D **Norvision - A Spatial Perspective for the North Sea Region (Spring 2000)**
(www.mem.dk/lpa/English/interregIIIC.htm)
- E **Wismar Declaration and VASAB 2010 - Vision and Strategies around the Baltic Sea 2010 (September 2001)** (www.vasab.org.pl) (See also www.balticpalette.com)
- F **Vision Planet - Strategies for Integrated Spatial Development of the Central European Danubian and Adriatic Area (January 2000)** (www.uniserver.cz)
- G **Spatial perspectives for the enlargement of the European Union (2001)**

3 Synthesis for the PolyMETREXplus Inception Meeting - March 2004 (based on the CPMR report extended by reference to the ESPON Projects work programme)

A Current situation

B Illustrative hypothesis - *straight line* development

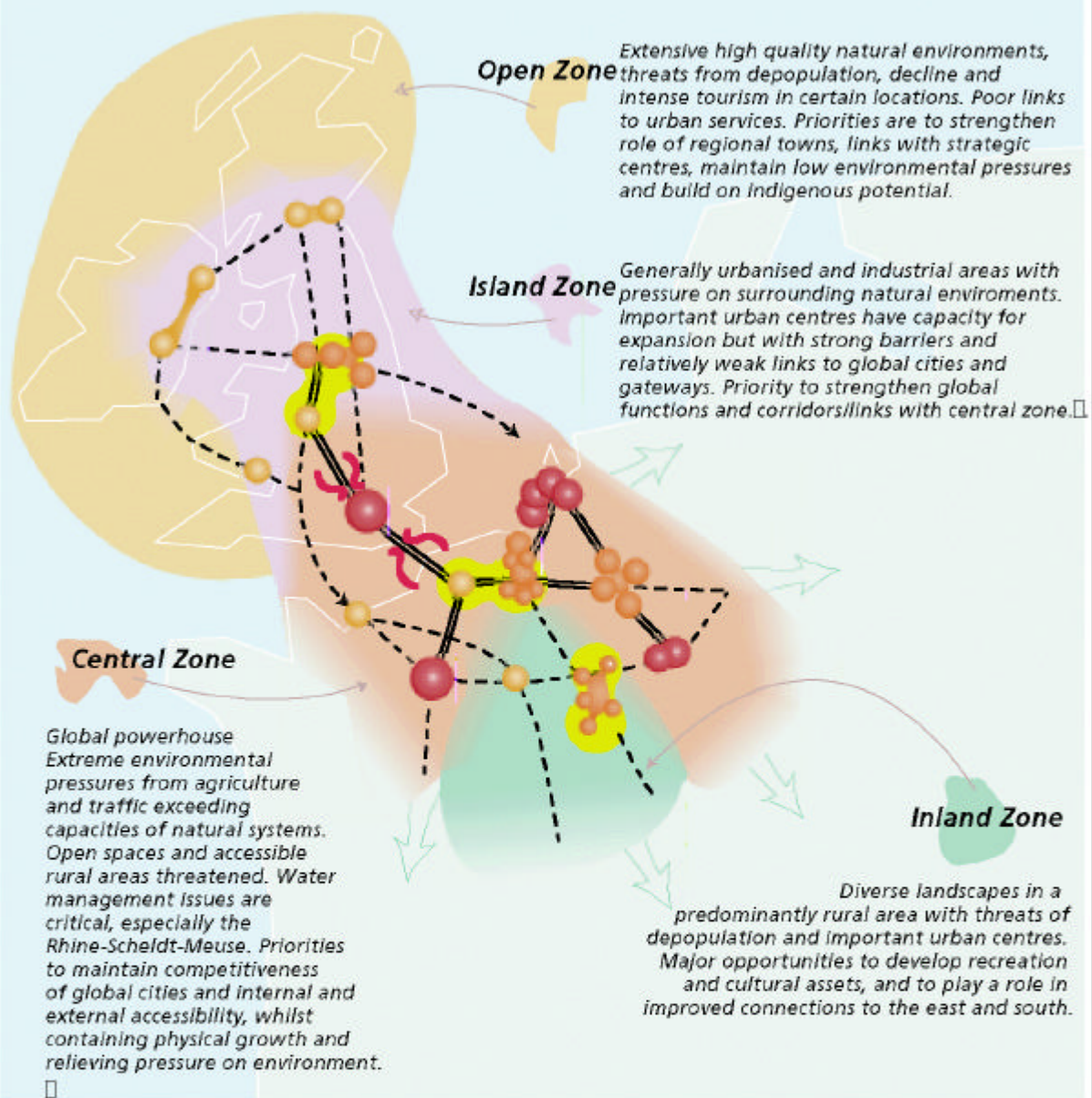
C Illustrative hypothesis - long term voluntarist approach

These diagrams have been produced from the ESPON/CPMR/N-W Europe diagrams together with information from the concept diagram of the Polish spatial development policy *Poland 2000 Plus* and general information from *Spatial perspectives for the enlargement of the EU*.

The purpose of this collation is to provide a visual basis for discussion between partners and contributors at the PolyMETREXplus Inception Meeting in March 2004 on the European spatial planning and development context for the project and the key issues arising.

A VISION FOR NORTH WEST EUROPE

An agenda for a sustainable and balanced development



Cooperation zones.



30 - Current situation

level 1 level 2 level 3 The size of the symbols is defined by the mass criterion

Peripheral gateways

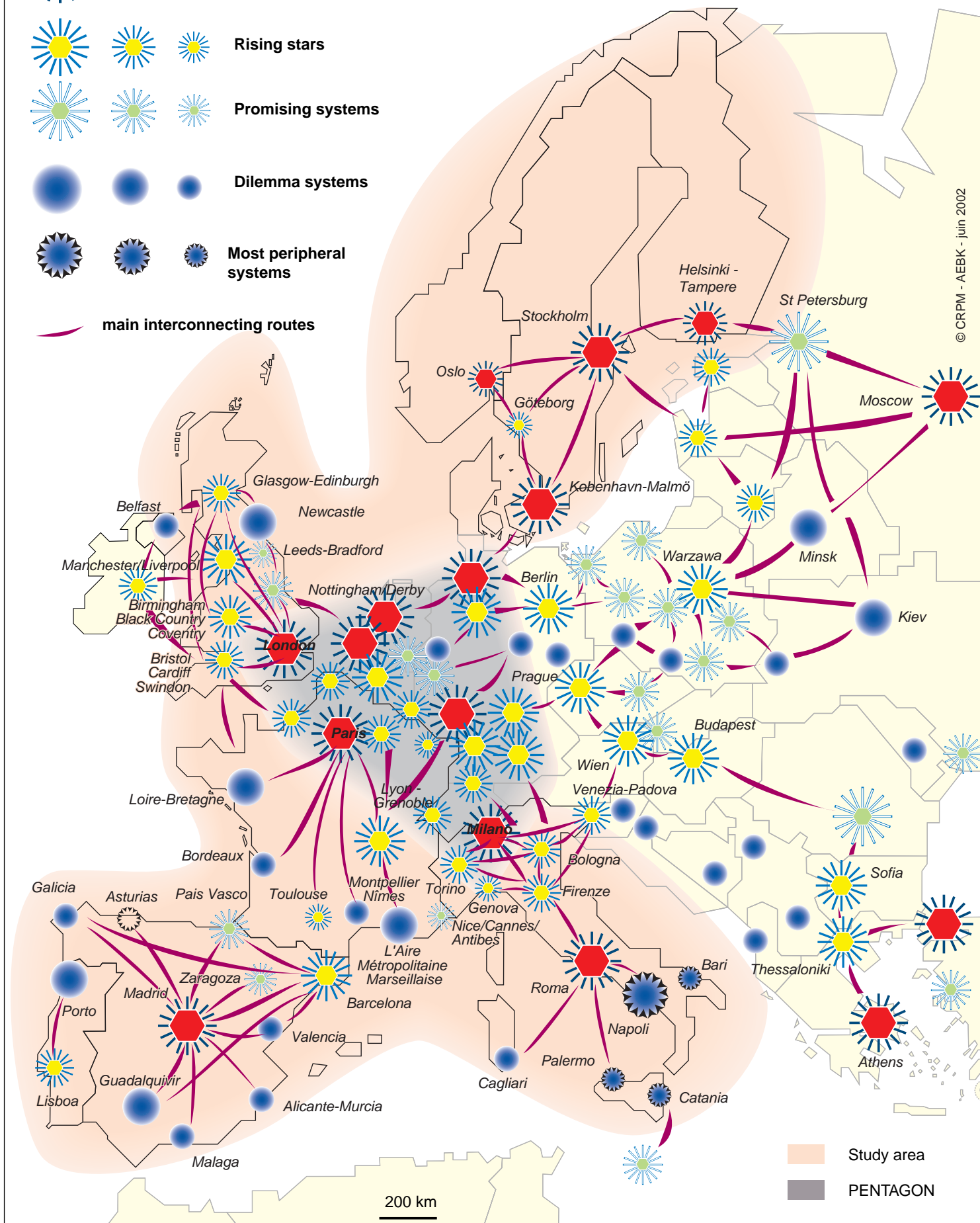
Rising stars

Promising systems

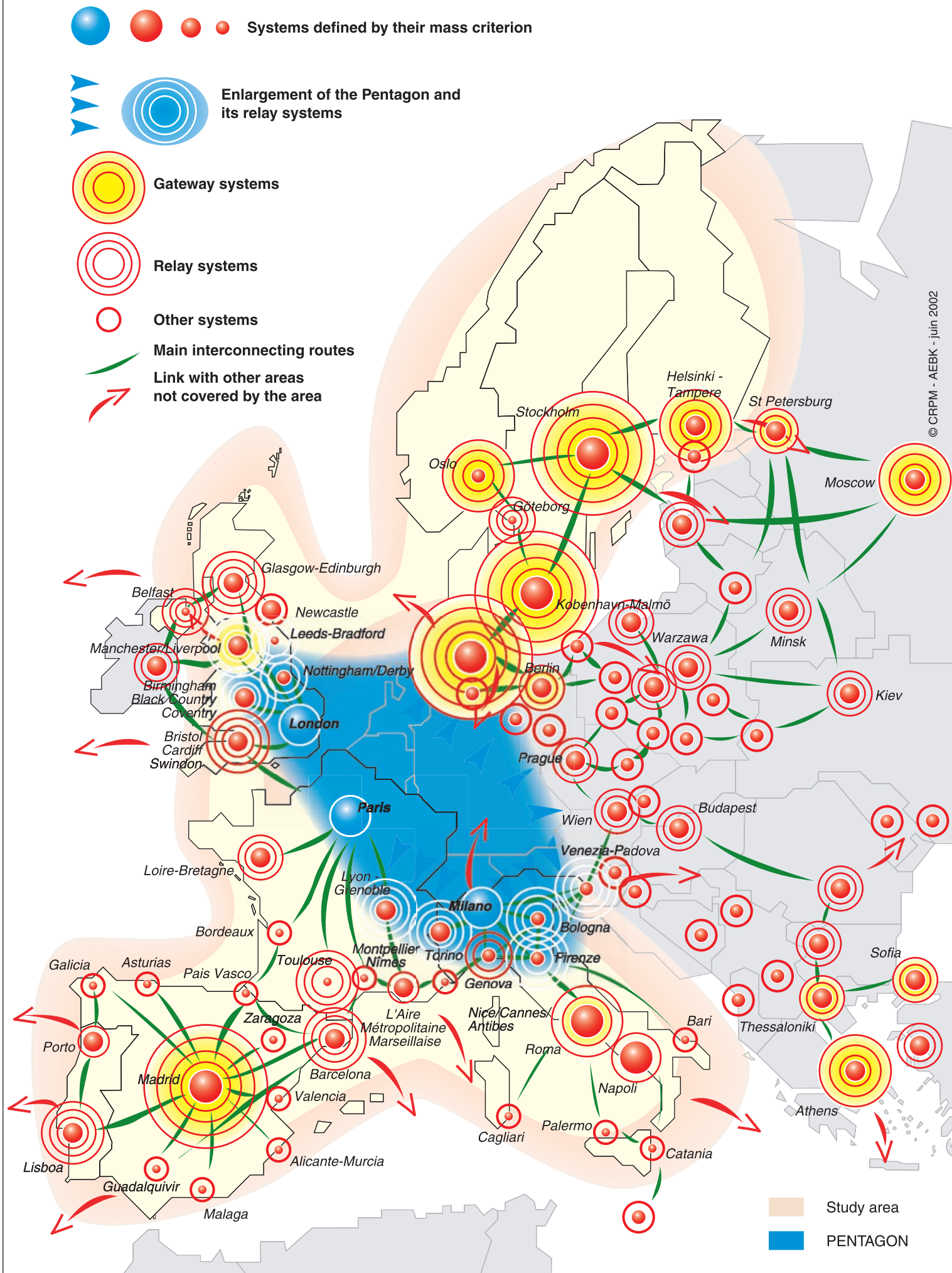
Dilemma systems

Most peripheral systems

main interconnecting routes



31 - Illustrative Hypothesis "straight line" development



Systems defined by their mass criterion

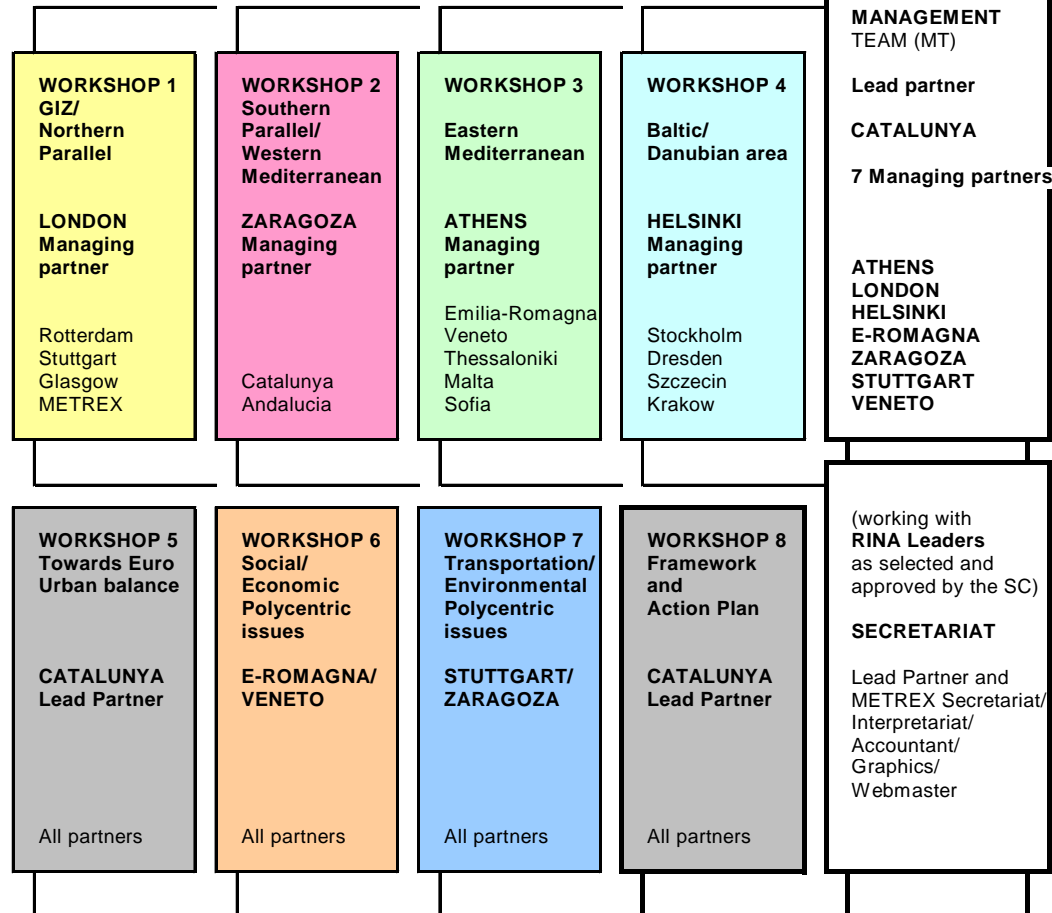


Appendix A - PolyMETREXplus Diagram and Map

PolyMETREXplus project management structure

Steering Committee to supervise, monitor, review and evaluate the Planning Component

Management Team to manage, co-ordinate, progress, operate, control and report to the SC



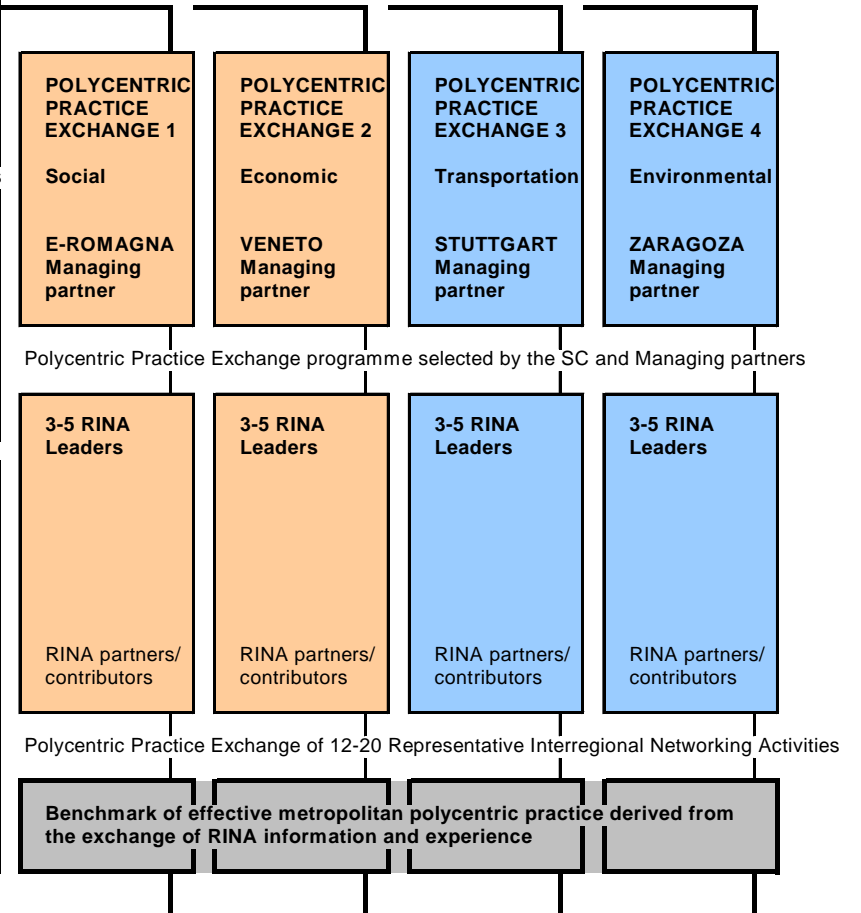
Secretariat for logistics, liaison, productions, dissemination and SC/MT support

Planning Component 2004-2005

Lead Partner contact with the South Zone JTS and MA

Steering Committee to supervise, monitor, review and evaluate the Practice Component

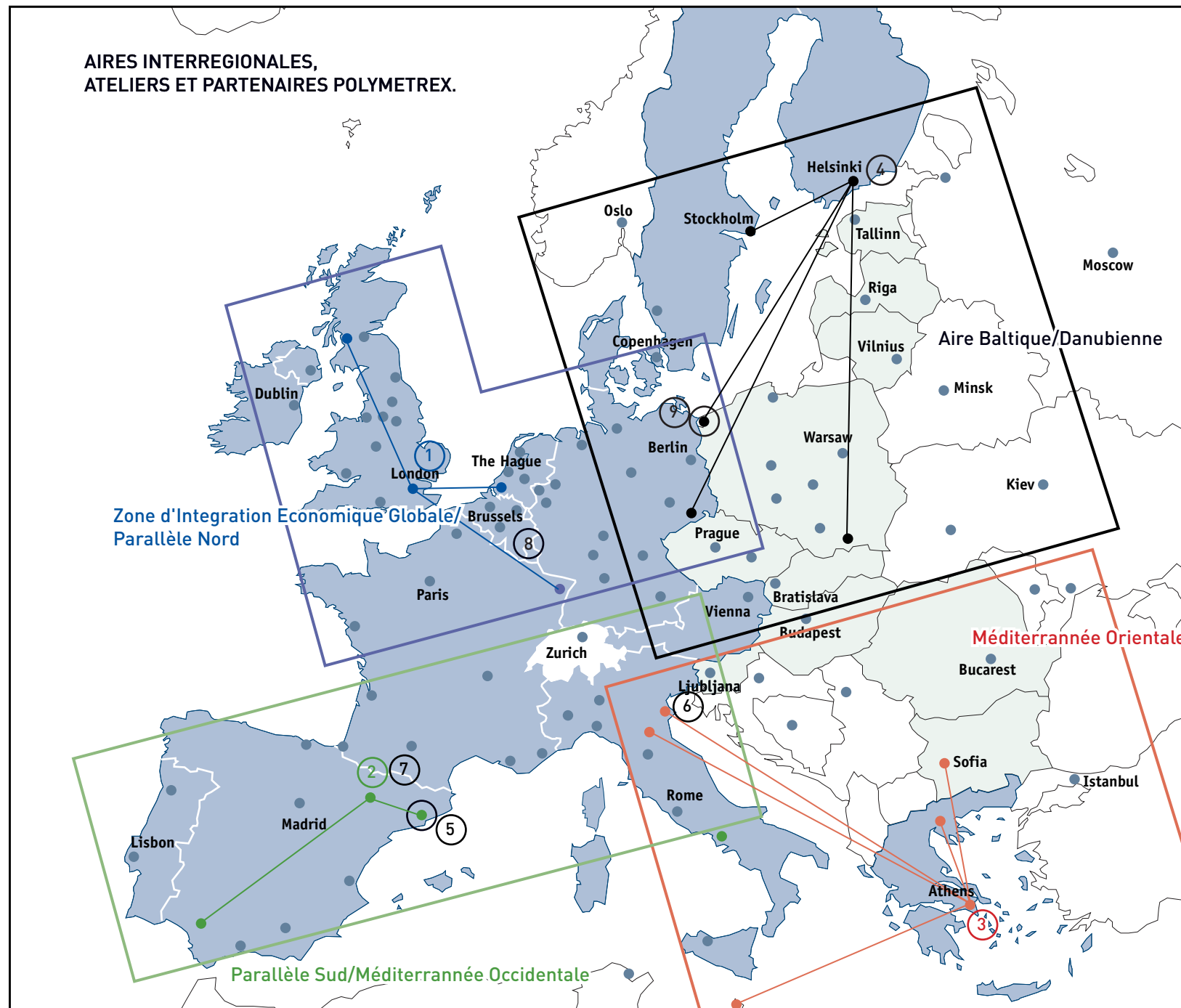
Management Team to manage, co-ordinate, progress, operate, control and report to the SC



Secretariat for logistics, liaison, productions, dissemination and SC/MT support

Practice Component 2006-2007

**AIRES INTERREGIONALES,
ATELIERS ET PARTENAIRES POLYMETREX.**



Appendix B - ESPON abstracts

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**OFFICIAL WEBSITE OF THE ESPON 2006 PROGRAMME,
SUPPORTED BY THE EU-COMMUNITY INITIATIVE INTERREG III**

**NEWS**

- ▶ [Interactive Data Navigator](#)
(28/11/2003)
- ▶ [New project experts at ESPON CU](#)
(28/11/2003)

Basic spatial characteristics of the enlarged European territory

The European Union has decided to welcome new Member States during 2004. The EU will then include the territory of 25 countries, while 2 more are envisaged to join shortly after.

The European Union of 27 will be the living space of approximately 490 mill. people. The population of the EU will enlarge by 28 %. At the same time some 1.1 mill. km² will be added bringing the EU territory up to 4.3 mill. km² in total. The enlargement will increase the territory by 34 %.

The spatial structure of the enlarged EU will include a number of new metropolitan urban regions, small and medium-sized cities, a diversity of rural territories, mountain regions as well as islands. The European urban system will after the enlargement include a number of metropolitan areas holding the capital functions of the country in question. In many of the new Member States the capital holds a dominant position in the national urban system. However, in particular Poland seems to have a number of larger cities being important nodes. After the enlargement about 70 major cities with more than 500.000 inhabitants will be part of the spatial main structure of the EU 27. About 20% of the total EU-27 population will live in these cities.

From a global perspective, looking at the balance and polycentrism of an enlarged European Union, the current core area, the Pentagon shaped by London, Paris, Munich, Milan and Hamburg, becomes even more dominant in economic terms. Today around 41 % of the population of EU 15 are living in this core area, which is only 18 % of the EU 15 territory, and producing 49 % of the EU 15 GDP. In a global perspective the spatial structure of the EU 15 has mainly one dominant core and a periphery with some dynamic urban nodes.

With the enlargement the current core area becomes even more significant in spatial economic terms. The economic reality of the new Member States and their regions, nearly all of them performing a GDP/head (in PPS) below 75 % of the EU average, makes the Pentagon an even more dominant economic space. In an EU 27 the Pentagon will be only 14 % of the territory, 32 % of the EU citizens will live and work in

this area, and the area will count for 46.5 % of the EU 27 GDP. The challenge of balance and polycentrism set out in European policy orientations for spatial development has then not become less.

As a curiosity, the [centroid](#) of the enlarged European Union will change towards the east when new countries join. However, not as much as some might have expected. The European centre of gravity of the enlarged Union will still be within the German territory.

The article was prepared in cooperation by the BBR and the ESPON CU

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PROJECTS

The projects launched under the ESPON programme follow an integrated approach and have a clear territorial dimension. Seen together, they cover a wide range of issues and are (therefore) of different nature, stretching from scientific methods and data bases via strategic projects to institutional and instrumental questions. The following fields of research can be differed:

- Thematic studies (projects under Priority 1) on the territorial effects of major spatial developments on the background of typologies of regions, and the situation of cities on the base of broad empirical data.
- Policy impact studies (projects under Priority 2) on the spatial impact of Community sector policies, Member States' spatial development policy on types of regions with a focus on the institutional inter-linkages between the governmental levels and instrumental dimension of policies on the base of broad empirical data.
- Horizontal and coordinating cross-theme studies (projects under Priority 3) as a key component. Evaluation of the results of the other studies towards integrated results such as indicator systems and data, typologies of territories, spatial development scenarios and conclusions for the territorial development.
- Scientific briefing and networking (projects under Priority 4) in order to explore the synergies between the national and EU sources for research and research capacities.


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▶ Third ESPON Seminar

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— Third ESPON Seminar

ESPON seminar in Matera 6-7 October 2003

The aims of the third ESPON seminar were to present, assess and discuss the preliminary results accomplished by the Transnational Project Groups as well as their first ideas for policy recommendations.

Each Lead Partner was invited to present the work of the TPG concentrating on the main findings, key choices made, use of the common platform and challenges for the next phase of the project. Following each presentation the seminar programme made room for discussion.

A special slot focused on the first policy recommendations coming out of the Interim Reports, which gave the participants of the seminar an opportunity for a direct dialogue with the TPG.

Parallel workshops were envisaged to focus on progress made on ESPON mapping tools, experiences in the process from goals and concepts to policy recommendations and on indicators, typologies and cross-thematic analysis.

The seminar was attended by more than 130 scientists, consultants and policy makers from all over Europe.

Document

File (PDF/PPT)

Final programme of the seminar

[programme_final_29-9-2003.pdf](#)
(32.74 KB)

Presentation of Mr Peter Schmeitz (the Netherlands): ESPON and EU territorial policy development

[terr_policy_dev.ppt](#) (37.00 KB)

Preliminary results and first policy recommendations by September 2003 by Peter Mehlbye

[prelim_results.ppt](#) (120.00 KB)

Presentation of ESPON project 1.1.1

[1.1.1.ppt](#) (7.59 MB)

Presentation of ESPON project 1.1.2

[1.1.2.ppt](#) (10.71 MB)

Presentation of ESPON project 1.1.3

[1.1.3.ppt](#) (9.24 MB)

Presentation of ESPON project 1.1.4 - Part 1

[1.1.4_1.ppt](#) (7.10 MB)

Presentation of ESPON project 1.1.4 - Part 2

[1.1.4_2.ppt](#) (5.42 MB)

Presentation of ESPON project 1.2.1 - Part 1

[1.2.1_1.ppt](#) (6.82 MB)

Presentation of ESPON project 1.2.1 - Part 2

[1.2.1_2.ppt](#) (4.71 MB)

Presentation of ESPON project 1.2.1 - Part 3

[1.2.1_3.ppt](#) (13.68 MB)

Presentation of ESPON project 1.2.2

[1.2.2.ppt](#) (1.72 MB)

Presentation of ESPON project 1.3.1

[1.3.1.ppt](#) (8.78 MB)

Presentation of ESPON project 1.3.2	1.3.2.ppt (3.38 MB)
Presentation of ESPON project 2.1.1	2.1.1.ppt (4.15 MB)
Presentation of ESPON project 2.1.2	2.1.2.ppt (3.35 MB)
Presentation of ESPON project 2.1.3	2.1.3.ppt (430.00 KB)
Presentation of ESPON project 2.1.4	2.1.4.ppt (394.00 KB)
Presentation of ESPON project 2.2.1	2.2.1.ppt (5.26 MB)
Presentation of ESPON project 2.2.2	2.2.2.ppt (1.36 MB)
Presentation of ESPON project 2.2.3	2.2.3.ppt (8.37 MB)
Forseen new coverages in the GISCO reference database (2003-2004) by Hugo Poelman	gisco_previsions.ppt (56.00 KB)
Synthesis of the workshop "ESPON mapping tools" by Hugo Poelman	ws_maptools.pdf (11.99 KB)
Data availability perspectives concerning Land Cover 2000 by Hugo Poelman	icl200.ppt (3.70 MB)
List of participants of the seminar	list_of_participants.xls (36.00 KB)


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ESPON Project 1.1.1

THE ROLE, SPECIFIC SITUATION AND POTENTIALS OF URBAN AREAS AS NODES IN A POLYCENTRIC DEVELOPMENT (2002-04)

Thematic scope and context

Cities are the starting point of reference for all measures. Nevertheless, this measure allows to dive deeper into the specific needs and potentials of cities in the context of territorial development. This link is most obvious for the role of cities as regional centres (in a polycentric tissue), but is equally relevant for the role of cities in fulfilling complementary functions at national, transnational and even EU scale. The ESDP highlighted the relation between territorial and polycentric development in that respect. As well, the ESDP highlighted the special role, which could be undertaken by Euro-corridors, global integration zones, gateway cities, urban clusters and individual urban poles in support of a better territorial balance within the Union. This project will be directed towards this field of activity.

Lead Partner

Nordregio - Nordic Centre for Spatial Development, Stockholm (Sweden). Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

File (PDF)

Third Interim Report: Part 1 (Chapter 1 - 3)

[3-ir.1.1.1 part 1.pdf \(1.62 MB\)](#)

Third Interim Report: Part 2 (Chapter 4)

[3-ir.1.1.1 part 2.pdf \(5.73 MB\)](#)

Third Interim Report: Part 3 (Chapter 5-7)

[3-ir.1.1.1 part 3.pdf \(3.35 MB\)](#)

Third Interim Report: Part 4 (Appendix 1 to 10)

[3-ir.111 annex 1 to 10.pdf \(3.32 MB\)](#)

Second Interim Report

[2-ir-1.1.1.pdf \(3.90 MB\)](#)

First Interim Report

[1-ir-1.1.1.pdf \(63.93 KB\)](#)

Results and Timetable envisaged

[rat 1.1.1.pdf \(14.29 KB\)](#)

Terms of Reference

[tor 1.1.1.pdf \(58.25 KB\)](#)

Tender

[tender 1.1.1.pdf \(2.53 MB\)](#)

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Project 1.2.2

Project 1.3.1

Project 1.3.2

ESPON Project 1.1.2**URBAN-RURAL RELATIONS IN EUROPE (2002-04)****Thematic scope and context**

The future of numerous rural areas is increasingly functionally interlinked with urban development. This is obvious in the densely populated areas (such as peri-urban zones) undergoing considerable urbanisation pressure. It is also relevant for more sparsely populated rural areas, which are under less visible urban influence. What is the future perspective for urban- rural relationships and the system of mutual exchange, where cities provide services, cultural activities, infrastructures and the major access to the labour market, while rural areas, still producing agricultural products, provide leisure potential and green spaces (amenities)? Will the viability of the rural areas depend increasingly on their proximity and their degree of exchange with urban areas? How can co-operation and partnerships support a sustainable development of rural areas?

The project shall further explore relations between urban and rural areas in terms of exchange processes, institutional links and interdependencies. These relations are of special interest on the background of the diverse structure of the EU territory and the neighbouring countries. They have developed substantially during the last decades, however differently within Europe in accordance to the diversity of spatial contexts.

Lead Partner

Helsinki University of Technology - Centre for Urban and Regional Studies, Helsinki (Finland).

Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document**File (PDF)****Third Interim Report: Part 1**[3.ir.1.1.2_part.1.pdf \(5.06 MB\)](#)**Third Interim Report: Part 2**[3.ir.1.1.2_part.2.pdf \(2.75 MB\)](#)**Third Interim Report: Map Set 2**[mapset2.pdf \(12.92 MB\)](#)**Third Interim Report: Map Set 3**[mapset3.pdf \(12.63 MB\)](#)**Second Interim Report**[2.ir-1.1.2.pdf \(5.82 MB\)](#)**First Interim Report**[1.ir-1.1.2.pdf \(124.69 KB\)](#)**Results and Timetable envisaged**[rat_1.1.2.pdf \(14.40 KB\)](#)**Terms of Reference**[tor_1.1.2.pdf \(55.85 KB\)](#)**Tender**[tender_1.1.2.pdf \(1.17 MB\)](#)

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ESPON Project 1.1.3

ENLARGEMENT OF THE EUROPEAN UNION AND THE WIDER EUROPEAN PERSPECTIVE AS REGARDS ITS POLYCENTRIC SPATIAL STRUCTURE (2002-06)

Thematic scope and context

The project will be focused mainly in the evaluation of the future implications of enlargement on EU territorial development from both the perspectives of the Member States and their regions as well as from the perspectives of candidate countries and their regions. Particular attention will be paid to border regions in the EU and candidate countries. The provision of the elements necessary for extending the ESDP to candidate countries is also required.

An additional task will be an account of trends affecting countries bordering the enlarged EU, where they could have direct effects on EU territorial development. This exercise should include contributions from EFTA and Mediterranean countries.

Lead Partner

Swedish Institute of Technology (KTH), Stockholm (Sweden).
Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

File (PDF)

Second Interim Report: Part 1

[2-ir.1.1.3.part 1.pdf \(1.40 MB\)](#)

Second Interim Report: Part 2

[2-ir.1.1.3.part 2.pdf \(7.19 MB\)](#)

First Interim Report

[1.ir-1.1.3.pdf \(827.68 KB\)](#)

Results and Timetable envisaged

[rat 1.1.3.pdf \(18.64 KB\)](#)

Terms of Reference

[tor 1.1.3.pdf \(65.52 KB\)](#)

Tender

[tender 1.1.3.pdf \(372.24 KB\)](#)

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ESPON project 1.1.4

THE SPATIAL EFFECTS OF DEMOGRAPHIC TRENDS AND MIGRATION

Thematic scope and context

The Cohesion Report stresses the effects of the demographic changes expected in many spheres of the society. Demographic trends include natural population trends (births, death, age structure), migration on large scale and regional/local migration. The latter is of particular interest as peer groups tend to differently migrate. Another observation is that the attitude and migration of cohorts is changing over time. That relates, in particular, to the third age. Those demographic trends together with migration and increasing mobility cause severe effects on the territorial development and the division of labour between regions. Trends could be distorted by the enlargement of the EU where additional movements are expected

Lead Partner

Swedish Institute for Growth Policy Studies (ITPS), Stockholm (Sweden). Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

File (PDF)

Second Interim Report: Part 1 (Chapter 1 - 4)

[2-ir.1.1.4.part_1.pdf \(2.95 MB\)](#)

Second Interim Report: Part 2 (Chapter 5 - 7)

[2-ir.1.1.4.part_2.pdf \(9.08 MB\)](#)

Second Interim Report: Part 3 (Appendices)

[2-ir.1.1.4.part_3.pdf \(397.33 KB\)](#)

First Interim Report

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Results and Timetable envisaged

[rat_1.1.4.pdf \(15.81 KB\)](#)

Terms of Reference

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TRANSPORT SERVICES AND NETWORKS: TERRITORIAL TRENDS AND BASIC SUPPLY OF INFRASTRUCTURE FOR TERRITORIAL COHESION (2002-04)

Thematic scope and context

Communication and exchange between cities and territories takes place via infrastructure networks where resources, goods, humans and information are exchanged. Access to those networks is increasingly becoming a crucial factor for territorial development. The project is foreseen to deliver more clearly definitions and to make further investigations on the major ESDP concept of "parity of access to infrastructure and knowledge", understood as a guideline promoting a better territorial equity or balance.

Lead Partner

University of Tours, Tours (France).

Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

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Third Interim Report

[3.ir-1.2.1.pdf \(10.94 MB\)](#)

Second Interim Report

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First Interim Report

[1.ir-1.2.1.pdf \(268.63 KB\)](#)

Results and Timetable envisaged

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► Co-ordinating cross-thematic projects Project 1.3.2

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ESPON Project 1.2.2

TELECOMMUNICATION SERVICES AND NETWORKS: TERRITORIAL TRENDS AND BASIC SUPPLY OF INFRASTRUCTURE FOR TERRITORIAL COHESION (2002-04)

Thematic scope and context

The diverse territory of Europe as well as the present spatial structure (with consideration of the polycentric development) indicates the problem of minimum supply of (public and private) infrastructure capable of providing the basic services required in all regions and to maintain the "service of general interest". This supply is necessary in order to prevent the final decline of and migration from remote and other areas with specific weaknesses, often exposed to extreme geographical conditions. However, a basic supply of services represents only the first and minimum step towards the provision of higher degrees of infrastructure.

The Communication from the Commission "Service of general interest in Europe" (COM 2000/580) investigates the effects of market liberalisation in the telecommunication, transport and energy sector. The projects cited clearly indicate regionally and locally deviating effects. The interactions between different infrastructure networks, and the objectives of economic efficiency, consumer protection and economic, social and territorial cohesion should be taken into particular account.

With regard to the growing importance of some EU Member States as transit countries in an enlarged European Union, the identification of principles and the elaboration of political recommendations based on a polycentric development model gains in importance.

Lead Partner

University of Newcastle, Centre for Urban & Regional Studies (CURDS), Newcastle (UK).

Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

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Third Interim Report: Part 1

[3-ir.1.2.2.pdf \(7.09 MB\)](#)

Third Interim Report: Part 2 (Annex)

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THE SPATIAL EFFECTS AND MANAGEMENT OF NATURAL AND TECHNOLOGICAL HAZARDS IN GENERAL AND IN RELATION TO CLIMATE CHANGE (2002-04)

Thematic scope and context

Natural hazards refer to the pressure on the natural and built environment through the consequences of largely unpredictable, singular or more often appearing events which go beyond the impact of incremental changes of the environment. Technological hazards refer to the pressure on the environment through the consequences of accidents which have a direct impact on the environment. The consequences on territorial development represent the core interest of this action. Special attention has to be paid to areas where valuable natural ecosystems, environmentally sensitive areas, cultural landscapes, monuments and historical sites are endangered by pollution, floods, droughts, erosion, fires, earthquakes, and landslides.

Lead Partner

Geologian Survey of Finland, Espoo (Finland).

Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

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Second Interim Report: Part 1

[2.ir.1.3.1.part_1.pdf \(11.79 MB\)](#)

Second Interim Report: Summary

[2.ir.1.3.1.summary.pdf \(47.90 KB\)](#)

Second Interim Report: UNDP Indicators

[2.ir.1.3.1_1.5.2_undp_indicators.pdf \(24.50 KB\)](#)

Second Interim Report: Case Study Andalusia

[2.ir.1.3.1_annex_i_andalusia.pdf \(1.93 MB\)](#)

Second Interim Report: Case Study Dresden

[2.ir.1.3.1_annex_i_dresden.pdf \(2.23 MB\)](#)

Second Interim Report: Case Study Ita Uusimaa

[2.ir.1.3.1_annex_i_ita_uusimaa.pdf \(753.16 KB\)](#)

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TERRITORIAL TRENDS OF THE MANAGEMENT OF THE NATURAL HERITAGE (2002-04)

Thematic scope and context

Natural heritage is an essential part of the environmental assets of each country. The value of (bio)diversity has been largely recognized by EU policies. Such a heritage must certainly be preserved from hazards, but also creatively managed to reach a condition of sustainable development, for example by the recognition and valorisation of natural networks and individual natural assets in integrated development strategies. New forms of development must be found to assure synergy and co-existence of men activities and actions affecting the natural heritage.

According to the European Landscape Convention, adopted on 20 October 2000 in co-operation with the Council of Europe, the landscape contributes to the formation of local culture and is a basic component of the European natural and cultural heritage, promoting the consolidation of the European identity. Landscape is an important part of the quality of life of different areas of the European continent. However, development within many sectors of activity accelerates the transformation of landscapes. At the same time, natural heritage is increasingly considered an asset and a development potential in the economic development of cities and larger territories. The location of new investments is progressively taking factors of qualities in the surrounding areas into account, such access to beautiful landscapes and sites during leisure time. This brings extra focus and potential synergy to the management of the natural heritage.

Lead Partner

Royal Haskoning, Utrecht (The Netherlands).

Please find more detailed information on the contracted project team under [Transnational Project Groups](#).

Document

Second Interim Report

Second Interim Report: Map Set

First Interim Report

Results and Timetable envisaged

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The role, specific situation and potentials of urban areas as nodes in a polycentric development

ESPON Project 1.1.1

Third interim report

August 2003

Lead partner:

- Nordregio (Sweden)

Project partners:

- The Danish Forest and Landscape Research Institute, DFLRI (Denmark)
- OTB - Research Institute for Housing, Urban and Mobility Studies (the Netherlands)
- CNRS-UMR Géographie-cités (France)
- Centre for Urban Development and Environmental Management, CUDEM, Leeds University (UK)
- Austrian Institute for Regional Studies and Spatial Planning, ÖIR (Austria)
- Spiekermann & Wegener, Urban and Regional Research, S&W (Germany)
- Dipartimento Interateneo Territorio, Politecnico e Università di Torino (Italy)
- Quarternaire (Portugal)
- Department of Urban and Regional Planning, National Technical University of Athens, NTUA (Greece)
- Norwegian Institute for Urban and Regional Research, NIBR (Norway)
- Institute for Territorial Development and Landscape (IRL) Swiss Federal Institute of Technology (Switzerland)
- Hungarian Institute for Regional and Urban Development and Planning (Hungary)

Preface

This report is divided into two main parts. The first part consists of a summary with the initial preliminary results and policy recommendations and responses to formal requirements set for the third interim report by the Co-ordination Unit.

The second part consists of reports from the work packages, showing mainly the progress made since the second interim report. The final report is due for August 2004. The main tasks in the final year of the project are to finalise all working packages and to integrate the results.

Responsible for the working packages:

- Critical dictionary of polycentrism (Work Package 1) is developed by CNRS-UMR with Nadine Cattán as co-ordinator and the following contributors: Sophie Baudet-Michel, Sandrine Berroir, Anne Bretagnolle, Cécile Buxeda, Eugénie Dumas, Marianne Guérois, Lena Sanders, Thérèse Saint-Julien (UMR Géographie-cités) and Remy Allain, Guy Baudelle, Danielle Charles Le Bihan, Juliette Cristescu, Emmanuèle Cunningham-Sabot (UMR RESO).
- The analyses of the urban system (Work Package 3 and 4) is developed by Janne Antikainen. Karin Bradley has acted as the main co-ordinator in data gathering/mining, assisted by Ton van Gestel and several Nordregio assistants. Other contributors in Nordregio have been Erik Gløersen and Jörg Neubauer (WP 4). Klaus Spiekermann and Michael Wegener from Urban and Regional Research, S&W have contributed to accessibility analysis and developing method to measure polycentricity (WP 3-4). The work on European Urban Networking (WP 3-4) is conducted by Nadine Cattán (co-ordinator), Cécile Buxeda, Juliette Cristescu, Grégory Hamez and Guillaume Lesecq at CNRS-UMR Géographie-cités.
- Governing polycentrism (Work package 5) is developed by Simin Davoudi (co-ordinator), Ian Strange and Michelle Wishardt at CUDEM.
- Studying the application of polycentricity (Work package 2) is carried out by Wil Zonneveld (co-ordinator), Bas Waterhout and Evert Meijers at OTB.
- Policy recommendations (Work package 6) have been developed by Niels Boje Groth at DFLRI and Hallgeir Aalbu at Nordregio.

Since the second interim report, researchers from Norwegian Institute for Urban and Regional Research (NIBR), Institute for Territorial Development and Landscape (IRL) Swiss Federal Institute of Technology and Hungarian Institute for Regional and Urban Development and Planning have joined the team under the instrument provided for new members of ESPON. The project team has had one three-day meeting in July where the results to date were discussed and analysed.

Apart from the project partners, many others have also contributed with useful comments, material and data during the course of researching. Data for population development trend analysis was provided by Kai Enkama. We are very thankful to Julia Spiridonova, Jitka Cenkova, Rivo Noorkõiv, Erzsébet Visy, Ieva Verzemniece, Jolants Austrups, Armands Vilcins, Rita Bagdzeviciene, Algimantas Venckus, Tomasz Komornicki, Serban Nadejde, Dorottya Pantea, Christiane Stiade, Miloslava Paskova, Margarita Jancic, Janja Kreitmayer, Tatjana Kerckmar, Marco Kellenberger and other people who have contributed with information, data and comments.

**The content of this report does not necessarily reflect
the opinion of the ESPON Monitoring Committee**

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- Annex 3. National FUA lists
- Annex 4. National FUA maps
- Annex 5. National population development trend figures
- Annex 6. Population development trend analysis of FUAs and core cities in the beginning of 1950s, 1960s, 1970s, 1980s, 1990s and 2000.
- Annex 7. NUTS delimitation in MEGA analysis
- Annex 8. NUTS 3 typology based on list of FUAs. Draft.
- Annex 9. Level of polycentricity – draft
- Annex 10. Acknowledgement, abbreviations and questionnaire of governing polycentrism study (WP5)

PART 1

1 First Preliminary Results and Policy Recommendations

The concept of polycentricity is now widely used even though it retains a variety of meanings. The lack of clear a definition may however be seen as one of its strengths, as this allows for adaptation to national challenges and policy contexts. This chapter will discuss the understanding of polycentricity at different geographical levels and the options for regional, national and European policymakers to influence the urban structure and to stimulate a more polycentric development of the European territory.

This summary offers the first preliminary results and policy recommendations from the ESPON 1.1.1 project. Since the Second Interim Report, work has concentrated on WPs 3 and 4 in order to provide data that may be useful for the 3rd Cohesion Report. This work will now soon be finalised. Consequently, the integration between the statistical work on one hand, and the other WPs on the other, has suffered. In the remaining project time towards August 2004, our work will be focused on territorial governance and in particular on examples of urban networking in the promotion of polycentrism. By the end of the project we will have a more comprehensive overview of the use of the concept of polycentrism as well as policy practice throughout Europe. This will allow us to draw more sophisticated conclusions on the preconditions for polycentricity as well as on policy recommendations.

1.1 Polycentricity is a bridging concept between growth and balance

1.1.1 Division of labour between urban nodes as a measure for regional balance

The promotion of a "balanced polycentric urban system" is one of the most frequently cited policy objectives of the European Spatial Development Perspective (ESDP) and is one of the core concepts of ESPON. The interest in polycentric development is fuelled by the hypothesis put forward in the ESDP that polycentric urban systems do stimulate economic growth, are more environmentally sustainable and do support territorial coherence better than both monocentric urban systems and dispersed small settlements.

The urban/rural distinction is no longer a functional dichotomy for the European space, as described in the ESDP. Cities must be seen as service points for population and industries in a wider perspective. The urban network is the structural backbone for the territory as a whole – polycentrism corresponds to the capacity of this network to service all parts of it efficiently and harmoniously.

The political concept of polycentricity is the territorial dimension of the European coherence policy. The urban structure should be organised to stimulate competitiveness and economic growth. Businesses should have access to the necessary services. Labour markets should have a sufficient diversity, such that people can find jobs corresponding to their professional aspirations. In all parts of Europe, citizens should benefit from a service provision that allows them to uphold a satisfactory quality of life, cultural offers and recreational areas.

Structural evolutions towards increased geographical concentration tend to deprive some areas of their urban network. Other areas may suffer from an excessive or badly managed concentration of urban functions, which affects the environment of businesses and populations negatively. Reaching equilibrium between economic competitiveness and social cost-efficiency will often imply organising high-quality dense areas. This in turn implies reflecting on an efficient division of tasks between different layers of the urban hierarchy, encouraging the development of activities that can thrive at the lower levels of the hierarchy in secondary cities.

The underlying hypothesis of polycentrism is that economic and functional integration can be achieved without creating structural territorial imbalances. The identification of possible conflicts

between the individual optimum for each economic actor on the one hand, and the general optimum for society as a whole on the other, is therefore an essential prerequisite to the design of a polycentric policy.

Polycentricity has two complementary aspects:

- *Morphological*, laying on the distribution of urban areas in a given territory (hierarchy, distribution, number of cities).
- *Relational*, based on the networks of flows and co-operation between urban areas at different scales. These flows are generally related to proximity, especially at the regional and national levels, but network relations can also be independent of distance.

Polycentricity is about the relative function of cities and urban areas. A polycentric situation occurs when two or more cities have functions that complement each other and have links with each other. Normally, we would identify three prerequisites for polycentricity: functions (often but not always depending on size), flows (often but not always depending on proximity) and co-operation (depending on mutual understanding, strategic interests and dependencies).

Polycentricity results from two main processes:

- *Structural* (economic, functional), resulting from “spontaneous” spatial development.
- *Institutional* (political), based on voluntary co-operation.

Polycentrism is a concept that refers to differentiated mechanisms and strategies of development according to the territorial scale and to the definition taken into account. Although the concept is not new, it has never been clearly clarified. We do also lack methods for assessment of the *impacts* of polycentricity (or the lack thereof) with respect to policy goals such as economic competitiveness, territorial cohesion and ecological sustainability.

For the ESPON programme, we propose the following definition of polycentricity:

A polycentric urban system is a spatial organisation of cities characterised by a functional division of labour, economic and institutional integration, and political co-operation.

Polycentricity can be found at all territorial scales, from the regional to the national and the European. Sometimes there may even be a contradiction between geographical levels, where polycentricity at one level stimulates monocentricity at another geographical level, or vice versa. The issues raised by the concept of polycentricity are different at each geographical level, and must therefore be discussed separately for each of them.

1.1.2 Improving links within functional urban areas at the regional level

At the regional level, urban structures are shaped differently. Most large urban regions do have a number of cities/towns in close proximity to each other - integrated with the core and with each other through functional links. The structure is monocentric if the core city does have all higher-level functions. It is polycentric if there is a division of labour between the cities and towns within the functional urban area, i.e. a certain level of specialisation of each node.

The polycentric region may be a continuous urban area with multiple centres as in the case of the Randstadt in the Netherlands, or an urban system with specialised cities such as Lorraine in France (with Nancy and Metz) and Tuscany in Italy (with Sienna and Florence). It can also consist of a dominant core with a number of separate cities with good access to each other around it, as in the cases of Greater London in UK, the Ile de France and the Navarra urban system in Spain.

A polycentric structure will have clearly recognisable centres and specialised centres within the larger urban region, as opposed to urban sprawl where the core city expands into the area around. There must be rich functional links between the nodes in the polycentric area. These can be based on an industrial specialisation where towns and cities complement each other within the larger region; a specialisation within private or public service provision to a degree that people visit more than one town to obtain e.g. recreational, educational or health services; or labour market links, i.e. people commuting to work (preferably in multiple directions).

Polycentric development is, at the regional level, mainly about

- increasing competitiveness through improving the links between the urban nodes within a region, and hence benefiting more fully from the economic variety of the region, and
- restructuring metropolitan regions experiencing urban sprawl, by improving the urban qualities of secondary urban centres.

1.1.3 A more balanced urban system at the national level

Even if urban systems are considerably older than the concept of the national state, national borders have for the last 100 years been a strong factor in the development of urban systems. As the economies - despite on-going economic integration - remain predominantly national, so do urban systems.

A simple way to illustrate the degree of polycentricity at the national level is to compare the primacy of the largest city in each country (Figure 1). The numbers are based on national definitions of urban agglomerations. The most polycentric countries are Germany, Poland and Italy - three countries with a large population and well-developed urban systems. At the other end of the spectrum we find three of the smallest countries, namely Luxembourg, Malta and Latvia.

The national urban systems can also be described on the basis of the difference between the leading cities in terms of population. Italy and Germany are examples of polycentric countries with several economically strong urban regions. France and the United Kingdom are also large countries with several strong cities, but they are more monocentric due to the primacy of their capital regions as compared to the second and third city regions.

At the national level, polycentric development is mainly about

- encouraging regional specialisation and the division of labour between urban regions, and
- improving access to urban services across the national territory.

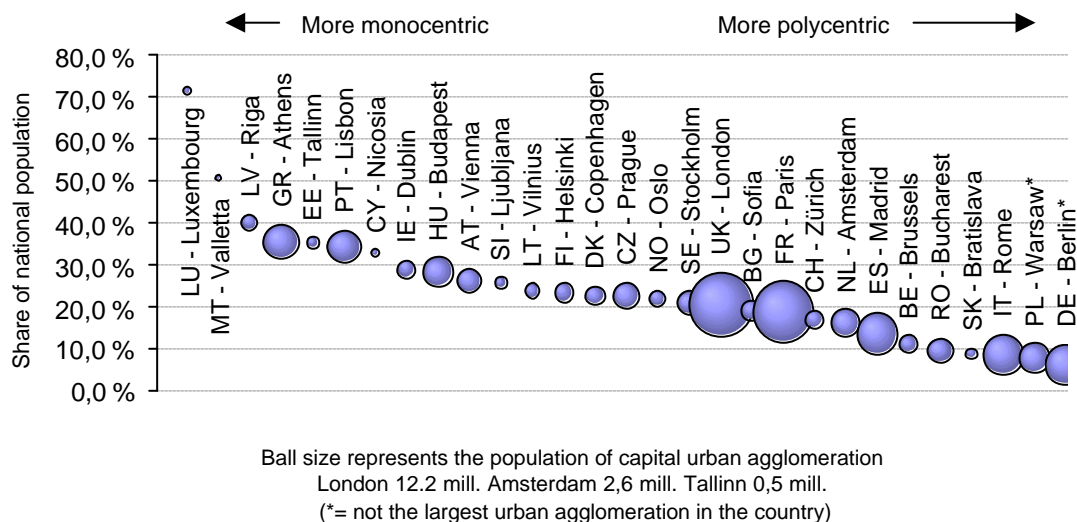


Figure no 1: Polycentrism in European countries: the capital urban agglomeration's share of total population in each country.

1.1.4 Development of global integration zones at the European level

Europe becomes more economically integrated day by day. Economic relations, business networks, subcontractor relations etc are increasingly globalised. Many businesses are acting on the international economic arena, not only within their countries and regions. And when a city's businesses become increasingly international in their outlook, so does the city. The urban area is becoming more important for globally oriented activities, and thus one way of enhancing European competitiveness is therefore to strengthen the regions.

This has led to a discussion of the global competitiveness of European city regions and the necessity of upgrading urban systems across Europe to become better environments for globally competing businesses. The ESDP identified the Pentagon (with London, Paris, Milan, Munich and Hamburg as its corners) as Europe's core area and its only *Global Integration Zone*. The dominance of the Pentagon will increase further in an enlarged EU. Today, this zone of dense urban systems has 15% of the area of EU27, 30% of the population and 45% of the GDP. This situation is often contrasted with the USA, where there are several Global Integration Zones.

An important dimension of polycentricity at the European level is specialisation and division of labour. We do have numerous examples of high profiled specialised regions beyond the Pentagon, such as Helsinki in Finland (ITC equipment) or Edinburgh in the UK (insurance). A global integration zone is however more than a specialised production base; it should also include a great variety of globally competitive activities, and a well-developed knowledge base and good global communications infrastructures.

Some urban regions can become globally stronger through co-operation and economic integration with other cities not too far removed from themselves. An enlarged city region will be more competitive when the numbers of functions increase. On the other hand, businesses often work together across large distances. This kind of networking is less dependent on proximity and can take different forms, and may also include co-operation between cities and regional authorities in different countries.

At the European level, polycentric development is mainly about

- stimulating the emergence of globally significant groups of cities outside the Pentagon through functional integration, and
- stimulating co-operation between city regions to promote the development of specialised competencies.

1.2 Where does the concept of polycentricity come from?

1.2.1 From central-place theory to regional competitiveness

The concept of polycentricity of settlement structures originated as an empirical concept in the 1930s. Central-place theory explained the hierarchical decentralisation of cities by the fact that different goods and services command service areas and market areas of different size. A contrasting view was proposed by polarisation theory, which pointed out that increasing economies-of-scale lead to growing concentration in only few large cities.

Polycentricity as a *normative* concept can be traced back to the concept of self-contained satellite towns connected to the central city by commuter railways promoted by the garden city movement. Later, several countries adopted central-place concepts as a principle for guiding spatial development, the hypothesis here being that central-place systems are both efficient (in terms of economies of scale) and equitable (in terms of equivalent living conditions). Empirical evidence indicated that growth centres induce a convergence of income and welfare. According to this theory, the regional policies of the 1950s and 1960s were dominated by supporting the development of hierarchical urban systems designed to channel economic development from the largest centres to the smaller centres.

In the 1970s regional development changed, one reason being the increasing price competition for industrial production of standard products due to the opening of international markets. This was further facilitated by new international trade agreements and a major decline in transport costs. Meanwhile, the production of service and knowledge-based products started to develop.

These developments changed the economic life of cities and regions. Regional development depended more on the local capabilities *within* regions than on external relations. Furthermore, it was envisaged that technology and education, as well as other factors internal to the region, stimulated economic development rather than themselves being products of that economic development. The strongest position in international competition was held by companies/regions with products that were difficult to copy elsewhere. Thus, the new wisdom was to develop specialised competencies. The single company may specialise, but more viable synergies and strength will be developed if specialised competencies are developed in regional networks of specialists, suppliers, specialised education and labour markets, much of which is nested in tacit abilities and competencies that are difficult to codify and hence, difficult to copy elsewhere.

The new ideas have given rise to a desire to search for regional identities, as it was believed that closely related to the economic identity of a region were particular competencies embedded in it. This is why the branding of regional identities has become an integral element of current regional policy making.

The growth centre model overlooks the fact that smaller cities can be more global than large cities, however often with very specialised industrial products, as their proportion of international activities often are larger than is the case for large cities dominated by domestic services. This observation may run contrary to a general impression that the largest cities are the more internationalised. To the extent that small and medium sized cities are international they are becoming generators of local regional development rather than just mediators of the regional development spreading from the larger centres. Furthermore, in the past, small and medium-sized cities usually competed in their role as centres in the local hierarchies. Now, it seems more reasonable for cities to co-operate in their role as “sub-contractors” on the world market.

1.2.2 Polycentricity is a policy option in the ESDP

In the ESDP, three policy options are stated in support of polycentric development across the European territory at three spatial levels:

- European wide efforts strengthening of several larger *zones of global economic integration* in the EU, equipped with high-quality, global functions and services, including the peripheral areas, through transnational spatial development strategies.
- Macro-regional efforts strengthening a *polycentric and more balanced system of metropolitan regions, city clusters and city networks* through closer co-operation between structural policy and the policy on the Trans-European Networks (TEN) and improvement of the links between international/national and regional/local transport networks.
- Intra-regional efforts promoting integrated spatial development strategies for city clusters in all Member States, within the framework of transnational and cross-border co-operation.

Polycentric urban systems are seen as more efficient, more sustainable and more territorially balanced than both *monocentricity* (all activities are concentrated in one centre) and *dispersion* (all activities are equally distributed over space):

- *Efficiency*: Large centres can exploit economies of scale and agglomeration effects but suffer from negative effects of over-agglomeration. Dispersed settlements enjoy the benefits of nature but are too small to support efficient infrastructure facilities and units of production.
- *Cohesion*: Spatial polarisation is built on competition and leads to spatial segregation between rich and poor, central and peripheral cities. Spatial dispersal is egalitarian in its distribution of poverty but denies its citizens opportunities for social mobility.

- *Environment:* Large settlements use less energy for transport but more for high-rise buildings, air-conditioning and waste management. Dispersed settlements can utilise local renewable resources but are wasteful in terms of transport energy and open space.

It is obvious that the optimum lies somewhere in between monocentricity and dispersal, i.e. in a balanced mixture of large, medium-sized and small cities arranged in a pattern favourable for exchange and co-operation. The challenge for Europe is to develop a balanced urban structure that stimulates the competitive potential of its regions as well as of Europe as a whole. One central vision is that dynamic Global Integration Zones can be formed beyond the Pentagon.

1.2.3 Polycentricity in ESPON as a follow-up of the ESDP

Polycentricity was made a core issue of the ESPON programme as a means of testing and operationalising the ideas of the ESDP. A number of links to other policies and projects are also mentioned, e.g. the indicators of the Urban Audit, practical experience on the transnational scale of Interreg IIC and IIB and the Study on European Polycentrism, conducted by the Conference of Peripheral Maritime Regions of Europe (CPMR).

The ESPON programme stresses the need to enhance polycentrism at all spatial levels. Special attention is given to the promotion of “global integration zones”. The programme asks for analysis of the kind of investments and transnational co-operation that are needed as well as what kinds of obstacles need to be removed in order to promote the creation of global integration zones outside the Pentagon. The aim here is to enhance European competitiveness as well as to foster the East-West and North-South Cohesion of the European Territory.

Emphasis here is put on the enhancement of three types of networks: (1) specialized (thematic) networks, (2) strategic co-operation between clusters of cities across administrative borders and (3) transnational urban networks. The enhancement of such networks should take place in particular between cities with growth potential and between cities that reveal potentials for further developing polycentric relations with other cities, e.g. the potentials for establishing and promoting co-operation based on complementary urban functions. Accordingly, the identification of such potentials is made a core issue.

The ESPON programme asks for policies and strategies at all policy levels, at the EU level, and the national and local levels. At the EU level the focus is on the Structural Funds and policies and programmes with spatial impacts. At national level, it is acknowledged that regional policies might differ substantially, due to the variations of national urban systems across Europe.

1.3 Functional urban areas in EU 27+2

1.3.1 Dense urban structures from the United Kingdom to Hungary

One condition for developing policies promoting polycentricity is that the existing urban structure and roles of cities in it are mapped out. There is no universal definition of *city* or *urban*. For this study, it was necessary to develop a common understanding of an urban region. The term *Functional Urban Area* (FUA) was thus chosen as the operational concept.

The aim was to describe the urban structure for the EU 27+2 countries as comparative as possible. Most European countries have definitions of Functional Urban Areas or similar concepts; such as travel-to-work-areas, commuting catchment areas, commuting zones or functional urban regions. Our figures are in these cases built upon national statistics. However, Germany, Luxembourg, Belgium, the Czech Republic, Bulgaria and partly Spain and Portugal do lack an official definition. In these cases, the identification of FUAs was solely based on insights provided by national experts.

The definitions used for identifying FUAs in each country are:

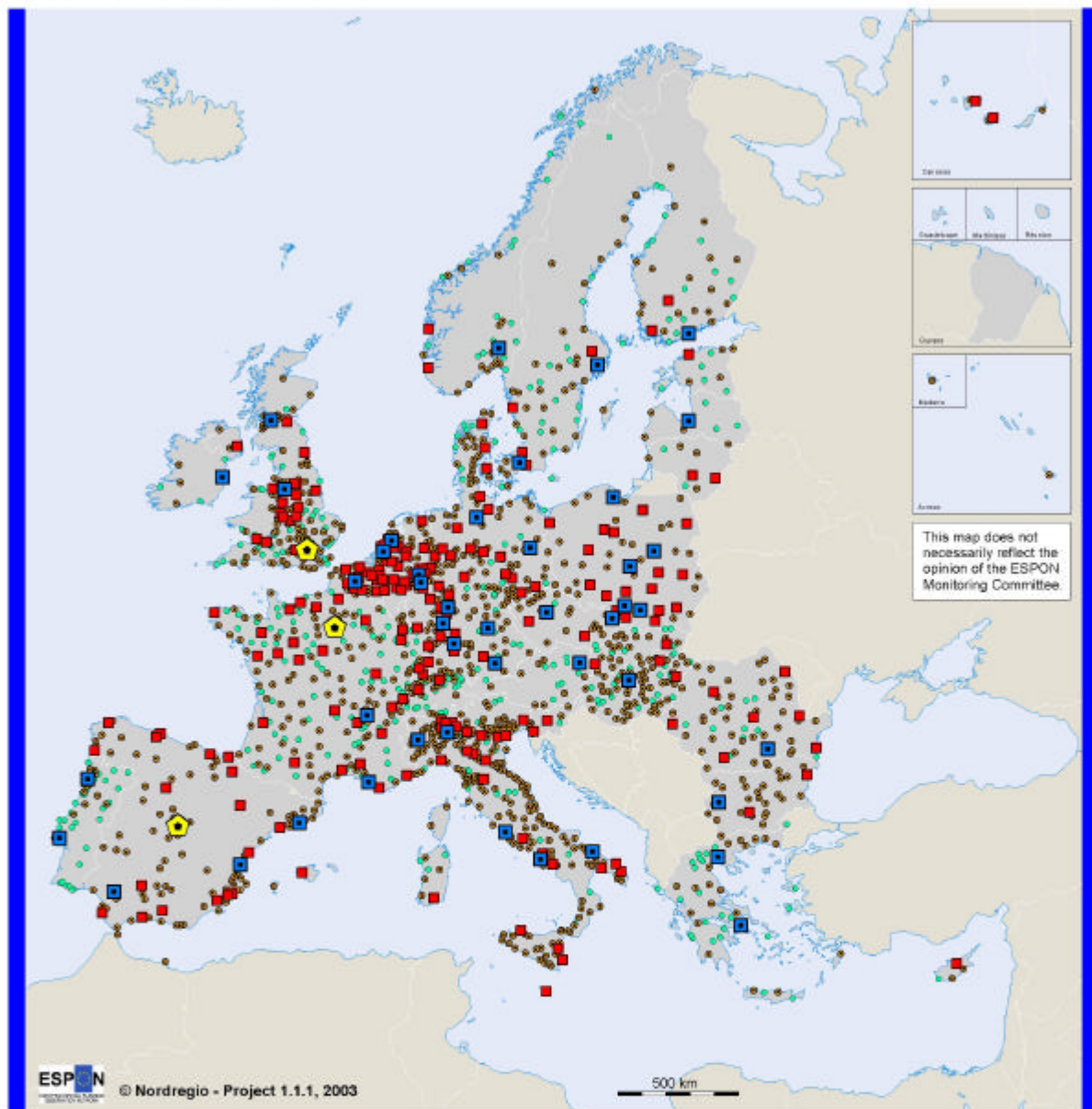
- FUA population over 50 000 inhabitants and urban core (agglomeration) with more than 15 000 inhabitants (i.e. excludes those artificially large 'urban' areas with minor urban core).
- Or FUA population more than 0,5% of national population and urban core (agglomeration) with more than 15 000 inhabitants (i.e. in less populated countries smaller FUAs were taken into account).
- Smaller FUAs were included if they had at least local importance in transport, knowledge or decision-making functions or regional importance in administrative, tourism or industrial functions.

A total of 1,595 FUAs are identified in EU 27+2 (Map 1). There is a dense urban structure in the central parts of Europe, stretching from the United Kingdom in the north via the Netherlands, Belgium, western Germany and northern France, and continuing both east and west of the Alps; in the west to Italy, and in east through the Czech Republic, south Poland and Slovakia into Hungary.

Countries further north and south are less populated and have less dense urban systems. This is especially true of Ireland, the northern areas of the UK, Norway, Sweden, Finland, Estonia, Latvia and Lithuania, but also for parts of Spain, Greece, Bulgaria and Romania.

The national urban systems are characterised in Table 1. Of the 29 countries, 11 can be characterised as polycentric. In general, small countries and countries in the European periphery are predominantly monocentric. Only two of the larger countries, France and the UK are dominated by one FUA.

FUA population (mass function)



Total FUA population in FUAs with more than 20 000 inhabitants 2000-2001

Geographical Base: Eurostat GISCO

- > 5 million inhabitants
- 1-5 million inhabitants
- 250 000-1 million inhabitants
- 50 000-250 000 inhabitants
- < 50 000 inhabitants

Origin of data: National Statistical Offices, National experts
Source: Nordregio

Map no 1: Functional Urban Area population

Table no 1: The national urban structure in EU 27+2

- *Austria* is dominated by Wien. The strongest population growth is found in small FUAs. The population in medium-sized cities are declining.
- *Belgium* is polycentric with two large centres and a balanced number of small and medium-sized FUAs. The strongest growth is found in medium-sized cities.
- *Bulgaria* is rather monocentric, with Sofia as the dominating city. Only three FUAs have more than 200 000 inhabitants. All FUAs are declining, the smallest most.
- *Switzerland* is rather balanced. The country is dominated by Zürich, but has four medium-sized FUAs and a large number of small FUAs. The largest growth are found in small FUAs.
- *Cyprus* has four FUAs. The population is increasing rapidly in all of them.
- The *Czech Republic* has two large FUAs (Praha and Ostrava) and couple of medium-sized cities. The largest population growth is in FUAs with population 100 - 200 000 inhabitants. Large cities are losing population.
- *Germany* is polycentric, with a large number of FUAs. There is no correlation between size and population change.
- *Denmark* is dominated by Copenhagen and has three medium-sized cities and a large number of small FUAs. Clear correlation between size and growth - the largest FUAs have the largest population growth.
- *Estonia* is dominated by Tallinn. All but one FUAs are losing population.
- *Spain* has two large FUAs, and a balanced network of other large and medium-sized FUAs. Strongest population growth in small FUAs, while large FUAs are losing population.
- *Finland* has one dominating FUA, Helsinki, and only a few medium-sized FUAs. Clear correlation between size and growth - the largest FUAs have the largest population growth.
- *France* is strongly dominated by Paris. Three other FUAs have population over 1mill. inhabitants. Strong growth takes place in all size-classes (small, medium-sized and large), but only small FUAs are losing population.
- *Greece* is dominated by Athens and has Thessaloniki as the second city. Other FUAs are small. Almost all FUAs are growing, the smallest relatively faster.
- *Hungary* has one dominating FUA, Budapest, and a dense network of small and medium-sized cities. The largest cities are losing population, growth in many small and medium-sized cities.
- *Ireland* has only six FUAs and is dominated by Dublin. All FUAs are growing strongly, the smallest ones more than large cities (in percentage).
- *Italy* is polycentric, with three poles and large number of medium-sized and small cities. Most FUAs are losing population, only some FUAs with less than 500 000 inhabitants are growing.
- *Lithuania* has eight FUAs with a balanced structure. Correlation between size and growth in negative sense: small FUAs are growing, larger FUAs are losing population.
- *Luxembourg* has only two FUAs, both growing.
- *Latvia* is strongly dominated by Riga. All FUAs are losing population.
- *Malta*, no data available for population development trend.
- *The Netherlands* is very polycentric. Large share of FUAs are medium-sized. Almost all FUAs are growing. Small ones relatively fastest, but also medium-sized cities are growing rapidly.
- *Norway* is dominated by Oslo, and has three medium-sized and several smaller FUAs. Growth in all size-classes.
- *Poland* has balanced urban structure with two large FUAs and many medium-sized cities. Polish FUAs are larger (population) than in most of the other countries. Large FUAs are losing population, only cities with less than 500 000 inhabitants are growing, some of them very rapidly.
- *Portugal* is a bipolar country, and has in addition a large number of small FUAs, most of them located near to large cities. Large cities are growing, some small FUAs are declining rapidly.
- *Romania* is dominated by Bucharest and has in addition seven FUAs with appr. 300 000 inhabitants. All but two FUAs are losing population.
- *Sweden* is dominated by Stockholm, but has a number of growing medium-sized cities. Correlation between size and growth - the largest FUAs have the largest population growth.
- *Slovenia* is dominated by Ljubljana. No data on FUA population development trend.
- *Slovakia* is rather polycentric. Most of the weight of urban system is in medium-sized cities. Most of FUAs are growing. No relation between size and population change.
- *United Kingdom* is strongly dominated by London, which is growing strongly. No correlation between size and population development. Data quality is poor, due to changes of statistical units.

1.3.2 Functional urban areas classified by function

All FUAs are obviously not of the same importance in the national or European urban system. Some are larger than others, and do therefore display a greater variety of functions and services. Some are of national and/or European significance based on the strengths of their manufacturing or service industries; others are the location of regional, national and/or European administrations.

There is only limited access to statistics on the level of FUAs. We have identified seven functions of urban areas that taken together provide us with an initial indication of their role in Europe, and we have identified indicators that are possible to measure rather comparably (table 2).

Table no 2: Features and functions of FUAs

Feature / Functions	Measured variable
Size of the urban region	Population
Transport function	Airport (passengers), ports (container traffic)
Tourism function	Number of beds in hotels (and similar)
Industrial function	Gross value added in manufacturing (industry)
Knowledge functions	Location of University and number of university students
Decision-making centre	Location of headquarters for the largest companies
Administrative functions	Administrative status of FUA

In addition, economic base of FUAs were studied by measuring share of primary, secondary and tertiary production in Gross Value Added.

Data is not available equally for all countries. Table 3 shows the indicators used to classify the different functions and provides a comment on challenges related to the data gathering. In a future study, we would like to go further by identifying new indicators and improving the statistical basis for the analysis.

Table no 3: Data used for the typology of FUAs

Function	Criteria	Sources	Comment
FUA population (mass function)	- Units used nationally signifying FUAs with population over 50.000 inhabitants. Statistical proxies.	- Available national statistics. - If statistics on FUA level not available, list of cities with more than 50 000 inhabitants	- National definitions of FUAs vary. Some countries have very large FUAs, for example the Netherlands (over 154000 inhabitants), while other countries have defined much smaller functional regions. -The years of the population figures vary slightly.
Transport	Airport with more than 50 000 pass. (2000) or port with more than 20 000 TEU container traffic (2001)	Aéroport Magazine. Port of Hamburg website.	If a FUA has both an airport and port, it is rated according to which is the relatively largest (see coding key).
Tourism	Number of beds in hotels or similar establishments 2001. NUTS 3 level	- Eurostat for EU15, NO, CH - National statistical offices	Most figures from 2001, some from 1999 or 2000.
Manufacturing industries	Gross value added in industry 2000.	- Eurostat - National statistical sources	Analysis on NUTS 3, as data is not available at FUA -level. For some of the acceding countries data is from 1999.
Higher education institutions	Main location of universities and number of students. ISCED classification 5A and 6.	- Statistics provided by national experts	The definitions of universities can vary slightly as well as the years of the data on students.
Location of company headquarters	The location of the headquarters of the top 500 companies in each country. Rated by turnover. 2001	- Ratings published by national financial magazines - Listing of the TOP 15 000 European companies by Euroconfidential, Belgium	- For most countries a list of the TOP 500 has been used. However, some countries only have official ratings of TOP 100 or TOP 200 companies, which have thus been used. - For the "Global" and "European" ratings a list of the TOP 1000 European companies have been used. The data is by postal addresses and not on FUA level, which makes the figures not totally reliable.
Administrative status	Based on the national administrative systems, cities that are the administrative seat of the different levels, national capitals, province centres, regional centres etc.	National experts	
Economic base	Share of GVA in primary, secondary and tertiary sector	- Eurostat - National sources and estimates	- Analysis on NUTS 3, as data is not available at FUA -level.

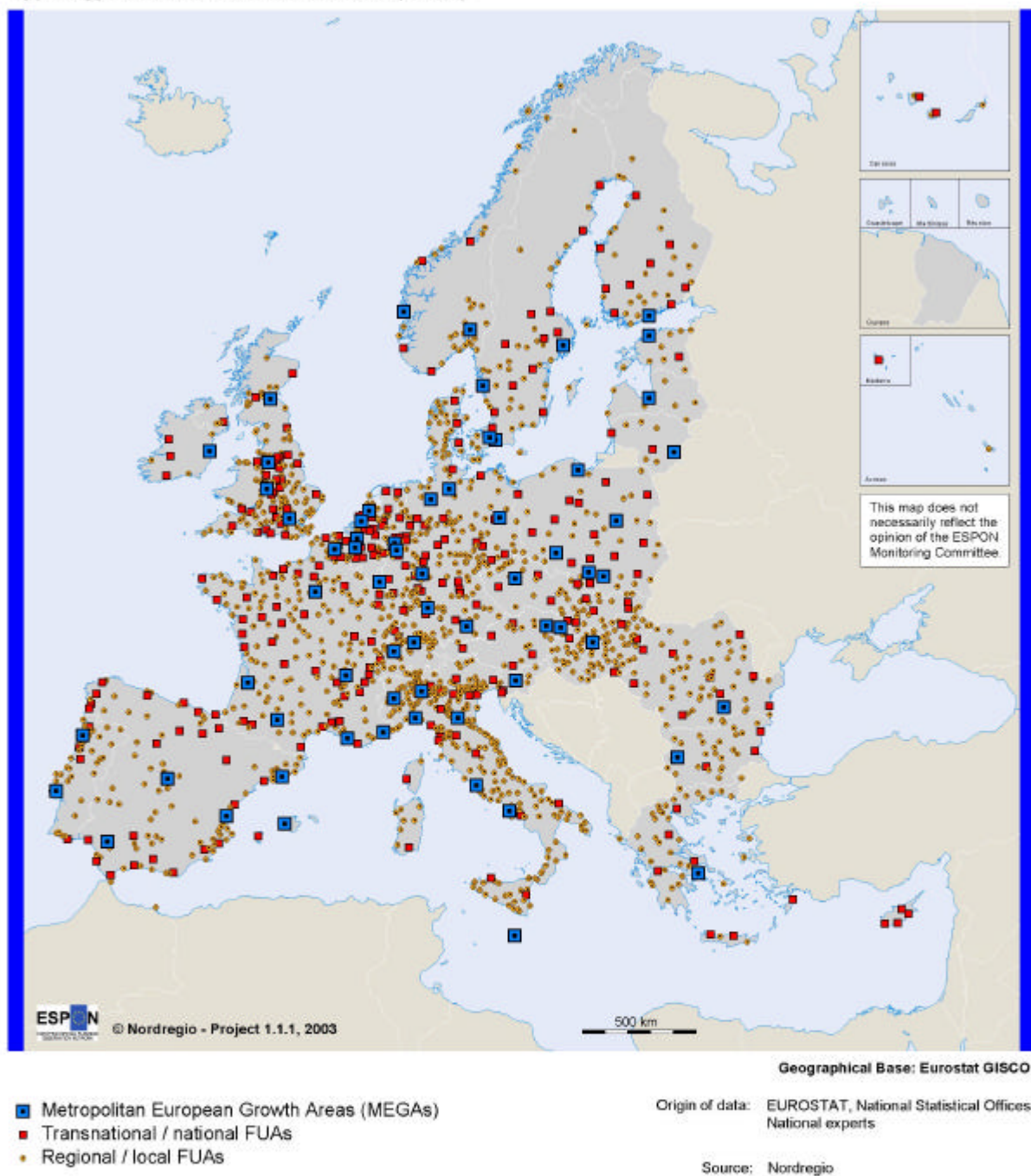
Each FUA has been ranked according to its importance for each variable. The analysis reveals the following pattern:

- **Population (mass function):** For both private and public-sector investments the demographic weight naturally constitutes the most favoured indicator for choosing the location of certain services and facilities. Population is concentrated to the Pentagon, but there are extensions reaching down to Southern Italy and to central and Eastern Europe, where there is a strong concentration of large urban agglomerations. In peripheral Europe most of the large urban agglomerations are more insular.
- **Transport:** The connectivity of the FUAs constitutes one of the central factors of polycentrism. Any sharing of economic functions cannot be really effective unless accompanied by an efficient transport infrastructure and by accessibility. Transport is measured by means of the main airports and major container traffic harbours, in order to explicitly identify transport-oriented cities. As a result, the general picture is rather monocentric, particularly in the geographically small countries. The busiest transport nodes are of course to be found in the Pentagon. Not one acceding country has a transport node of European significance.
- **Tourism:** Most of the FUAs strong in tourism are different from those that score highly in other functions. The highest weight of the urban system, when measuring the tourism function, is in the Mediterranean area and the Alps. Only a few highly tourist-oriented FUAs with European significance outside of this Mediterranean area can be identified. Globally significant urban destinations are London, Paris and Rome. Capital cities are in general also important nodes as regards tourism.
- **Industry:** The urban systems are in many countries the result of industrialisation. Manufacturing industries are in decline in most regions. However, they are still the backbone of the economy in many countries. Many industrial FUAs are selling globally, even the small ones. The industrial function of FUAs has been measured through gross value added in manufacturing. The strongest FUAs are found in the Pentagon. Gross value added is often low in acceding countries, except in capital regions and in Poland.
- **Knowledge:** This function is measured by the number of students in higher education institutes. In all countries, the capitals are the strongest nodes in knowledge, but many other FUAs are also important. The general picture is therefore rather balanced, as higher education is distributed across all parts of Europe, and within most of the countries as well.
- **Decision-making:** The capacity of influence of an urban system is not solely dependent on its level of competitiveness and demographic weight, but also on its actual economic attractiveness for private investors. The distribution of the headquarters of top European firms is an indicator of economic attractiveness. Business headquarters locate in places with good accessibility and where they are close to business services. Decision-making however remains highly concentrated to the Pentagon, as Stockholm is the only FUA outside the Pentagon that makes the top list.
- **Administration:** Strong hierarchies within urban systems are often due to the development of administrative functions. The current picture of Europe is a result of the growth of different national systems. The capitals are the main nodes of the European administrative system.

Most crucial economic functions such as the location of European decision centres are concentrated within the Pentagon. The knowledge function is more balanced due to location of universities in national educational systems all over Europe. The tourism and transport indicators are different, showing a pattern of functional division of labour at the EU level. Thus, tourism is concentrated in the Mediterranean coastal regions and transport within the northern-most parts of central Europe.

In Map 2, all variables have been combined to give an overall ranking of the FUAs in to three groups. The 64 FUAs with the highest average score has been labelled *Metropolitan European Growth Areas* (MEGAs).

Typology of Functional Urban Areas (FUAs)



Map no 2: Typology of Functional Urban Areas (FUAs)

1.3.3 Potential polycentric areas in most parts of Europe

Thus far, the analysis has been based on the urban morphology and on the functions of FUAs. To analyse polycentricity, data on flows is however also necessary. However, such data is not yet available. At this point, therefore, we can only indicate where the potential polycentric regions are located on the basis of the urban morphology.

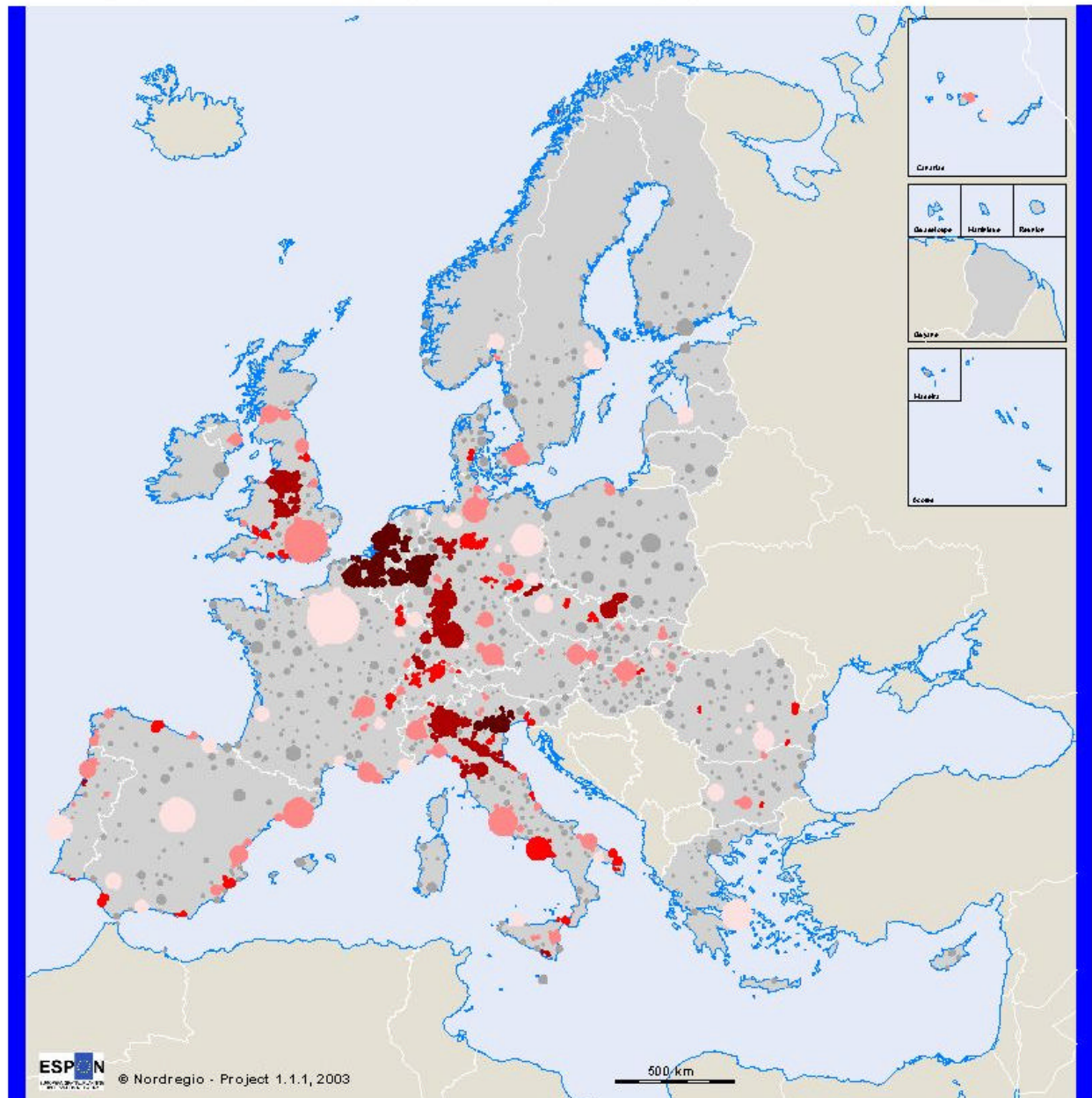
The potential for interaction between cities are mapped by identifying FUAs whose area of influence overlap each other, i.e. they are so close that a functional integration is probable or may develop in the future. Based on a function of each city's population and the distances between them, 149 groups of FUAs are identified. The largest in terms of population are Amsterdam-Brussels (17 mill. inhabitants), Paris (13 mill.), Stuttgart-Frankfurt (12 mill.), Köln-Düsseldorf (11 mill.) London (11 mill.), Manchester-Sheffield (11 mill.) and Milan (8 mill.).

The groups of FUAs are mapped in Map 3. We can again see the northwest/southeast range of cities on both sides of the Alps. The strongest potentials for polycentrism based on proximity are in the central parts of Europe, in the Pentagon and the FUAs closest to it. Outside these areas, we find only a limited number of polycentric regions with several FUAs of equal size. The largest of these is Ostrava in the Czech Republic. Several others are located in Italy, like Venezia-Padova, Bologna and Firenze. Basel-Mulhouse is an example of a trans-national region where cities of similar size are located in close proximity to each other.

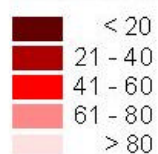
The map also shows the degree of polycentrism within each of these 149 groups of FUAs. The darker brown colours show potential polycentric regions of even-sized FUAs, whereas the lightest colours show regions dominated by one large FUA. Thus, monocentric regions such as the metropolitan regions of Paris, Madrid and Athens are identified by light colours, whereas the more polycentric patterns of the urban regions in the Midlands (UK), the Randstadt (the Netherlands), Rhine-Ruhr (Germany), the Po Valley (Italy) and Ostrava (the Czech Republic) are identified by darker colours.

Thus far, our analysis is based on morphology and proximity. However, a proper analysis of potential polycentric regions should also take the specialisation of the urban regions and the flows and co-operation between them into consideration. The analysis can be brought forward several steps with the data we now have. By calculating the combined strengths for these 149 FUAs, we can make an assessment of the potential gain they can have if their forces are joined: if FUAs with different strengths can develop into one economic area, they would increase their position in Europe. It is also possible to recalculate the groups of FUAs on the basis of geographical distance only, identifying where in Europe polycentricity can be developed by means of transport infrastructure. However, we do not have the resources to go further along this path within the terms of the present contract.

Level of polycentricity of FUAs grouped according to their population size and proximity, 1st draft



Proportion of total population living in the largest FUA (%)



(Inversely related to a possible measure of the degree of polycentricity)

Map no 3: Level of polycentricity of FUAs grouped according to their population size and proximity

1.3.4 Strongholds for polycentrism outside the Pentagon

Of the 1,595 FUAs, the 64 with the highest average score on the FUA indicators has been labelled *Metropolitan European Growth Areas* (MEGAs) (ref. Map 2 above). These MEGAs are identified on the basis of their functions (not only population and distance as above) and are the primary urban regions that we should look to in any discussion over polycentric regions that, in future, can act as a balance to the Pentagon at the European level.

All country capitals are included as MEGAs, except for Nicosia in Cyprus. Only the six largest countries, in terms of population, have more than three MEGAs, and as many as 17 have only one. Of the 64 MEGAs, 17 are located within the Pentagon.

As a further development, we have applied the same methodology as previously used in CPMR's study of potential Global Integration Zones. The strengths of the MEGAs are analysed on basis of their size (population and GDP), competitiveness (GDP per capita, head offices of top European companies), connectivity (air transport, accessibility) and knowledge basis (education level, R&D personnel share of total employment).

London and Paris dominate the scores. Other strong city regions are also to be found within the Pentagon (Frankfurt, Amsterdam, Munich, Brussels, Zurich, Milan, Hamburg, Düsseldorf) as well as outside it (Madrid, Copenhagen, Rome, Berlin, Barcelona). This confirms the conclusions in the CPMR report as regards where the strongest urban regions outside the Pentagon are located, even if the analysis now is expanded from nine to 29 countries.

The bottom of the list is dominated by MEGAs in the acceding countries. These are cities with low scores particularly on connectivity and competitiveness. The FUAs of Prague, Budapest, Warsaw and Bratislava are the highest ranked of these, at the same level as Luxembourg and Lisbon.

Economic and political integration will increase rapidly after enlargement and will also give rise e.g. to new air links. Major investments in transport infrastructure and human capital are also to be expected here. Therefore, as a long-term effect of EU membership, the capital regions of the new Member States in particular will be expected to climb the list.

In order to further investigate the development potentials of polycentric FUA regions outside the Pentagon, we have combined Map 2 and Map 3. The idea is to identify strong FUAs in close proximity to other FUAs, as these are regions where it might be useful to closer investigate the potentials of co-operation and functional specialisation. The result is shown in Table 4, where FUAs in bold letters are amongst the MEGAs identified above. The actual potentials must be clarified by further examination in the local context of institutional, functional, economic endowments and political aspirations.

We would like to develop this approach further and to utilise the empirical data better than we have been able to up to now. A possibility to analyse the FUAs and MEGAs on the basis of indicators from other ESPON project would also be useful. An important part of this would be to discuss observations and possible interpretations with national experts. This is unfortunately not possible within the present project.

Table no 4: Potentials outside the Pentagon for FUAs to form polycentric regions

<p>AUSTRIA/SLOVAKIA</p> <ul style="list-style-type: none"> • Wien (AT) • Bratislava (SK) Trnava (Slov) Nitra (Slov) <p>BULGARIA</p> <ul style="list-style-type: none"> • (Sofia) <p>CZECH REPUBLIC</p> <ul style="list-style-type: none"> ▪ (Prague) Pizen <p>DENMARK/SWEDEN</p> <ul style="list-style-type: none"> • Copenhagen (DK) Malmö (SE) Helsingborg (SE) <p>FRANCE/SWITZERLAND</p> <ul style="list-style-type: none"> ▪ Lyon St.Etienne Chambery Annecy Grenoble Valence Geneve (CH) Lausanne (CH) ▪ Marseille Montpellier Nimes Avignon Toulon • (Bordeaux) • (Nice) 	<p>GERMANY</p> <ul style="list-style-type: none"> ▪ (Berlin) Potsdam ▪ Dresden Chemnitz Leipzig Halle <p>GREECE</p> <ul style="list-style-type: none"> ▪ (Athens) Khalkis <p>HUNGARY</p> <ul style="list-style-type: none"> • Budapest <p>ITALY</p> <ul style="list-style-type: none"> • Napoli Salerno • Genova La Spezia Pisa Florence Livorno • Torino • Bologna Parma Modena • Udine Trieste • Venezia Vicenza • Verona 	<p>LATVIA</p> <ul style="list-style-type: none"> • (Riga) <p>NORWAY</p> <ul style="list-style-type: none"> • (Oslo) <p>POLAND</p> <ul style="list-style-type: none"> • Gdansk • Krakow Katowice <i>Bielsko-Biala</i> Czestochowa Ostrava (CZ) <p>PORTUGAL</p> <ul style="list-style-type: none"> • Porto Braga Coimbra • (Lisboa) <p>ROMANIA</p> <ul style="list-style-type: none"> • (Bucarest) Ploiesti 	<p>SPAIN</p> <ul style="list-style-type: none"> • (Madrid) • Barcelona Tarragona • Valencia Castellon de la Plana • Alicante Murcia • Sevilla Cadiz <p>SWEDEN</p> <ul style="list-style-type: none"> • (Stockholm) Uppsala Västerås <p>UNITED KINGDOM</p> <ul style="list-style-type: none"> • Birmingham Wolverhampton Coventry/Bedworth Nottingham • Manchester Derby Sheffield Liverpool Leeds Tyneside-Newcastle- Gateshead Huddersfield • Edinburgh Glasgow
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Bold letters: Metropolitan European Growth Areas (MEGAs). Not bold letters: Transnational / national FUA's.
In brackets: Cities with more than 80% of total population living in the largest FUA (i.e. monocentric regions).

Table no 19: MEGA analysis - results

MEGA	mass	competitiveness	connectivity	knowledge	Index average	Score total	Groups
Paris	705	194	384	170	363	16	global nodes
London	495	400	534	120	387	15	
Munich	147	223	156	177	176	14	
Frankfurt	141	139	287	131	174	13	
Madrid	248	96	185	151	170	13	European engines
Milan	211	123	187	56	144	12	
Rome	189	109	168	83	137	12	
Hamburg	162	153	105	121	135	12	
Brussels	90	145	164	128	132	12	
Copenhagen	122	120	136	143	130	12	
Zürich	86	122	163	..	124	12	
Amsterdam	86	156	239	117	149	11	
Berlin	200	76	120	140	134	11	
Barcelona	210	63	134	96	126	10	
Stuttgart	147	104	99	151	125	10	strong MEGAs
Stockholm	118	114	117	193	136	9	
Helsinki	85	107	77	214	121	9	
Oslo	71	111	102	200	121	9	
Düsseldorf	103	148	144	79	118	9	
Vienna	113	92	109	145	115	9	
Cologne	109	114	95	121	110	9	
Manchester	132	70	136	76	103	8	
Athens	155	46	104	85	97	8	
Dublin	68	106	101	113	97	7	
Gothenburg	80	66	59	141	87	7	

MEGA	mass	competitiveness	connectivity	knowledge	Index average	Score total	Groups
Lyon	91	74	76	107	87	6	Potential MEGAs
Antwerpen	65	82	65	115	82	6	
Turin	113	94	62	58	82	6	
Rotterdam	67	84	61	111	81	6	
Malmö	59	55	60	134	77	6	
Marseille	86	58	71	88	76	6	
Nice	49	56	92	88	71	6	
Bern	45	73	48	..	(55)	6	
Lisbon	114	73	78	58	81	5	
Prague	49	71	76	114	77	5	
Bremen	57	73	66	106	75	5	
Toulouse	51	62	66	116	74	5	
Budapest	65	59	72	92	72	5	
Warsaw	90	50	73	75	72	5	
Lille	120	51	54	55	70	5	
Bergen	23	64	45	146	69	5	
Edinburgh	35	96	61	84	69	5	
Birmingham	52	67	89	65	68	5	
Luxembourg	28	127	66	40	65	5	
Palma de Mallorca	28	59	123	48	64	5	
Bologna	47	87	67	54	64	5	
Valecia	86	49	49	72	64	5	
Bratislava	21	55	51	126	63	5	

MEGA	mass	competitiveness	connectivity	knowledge	Index average	Score total	Groups
Naples	121	39	65	39	66	4	Weak MEGAs
Bordeaux	58	61	56	75	62	4	
Genoa	42	68	52	61	56	4	
Bucharest	56	22	49	88	54	4	
Tallinn	17	37	37	131	56	3	
Sofia	35	25	44	113	54	3	
Sevilla	54	38	41	68	50	3	
Porto	48	47	49	34	44	3	
Ljubljana	18	54	46	49	42	3	
Katowice	81	31	37	36	46	2	
Vilnius	19	29	42	79	42	2	
Krakow	34	40	46	50	42	2	
Riga	37	31	40	53	40	1	
Gdansk-Gdynia	32	37	39	48	39	1	
Wroclaw	24	38	39	48	37	1	
Valletta	13	33	46	..	31	1	

Knowledge index score for Zürich, Bern and Valletta are estimations. Scores are derived from not rounded off index number.

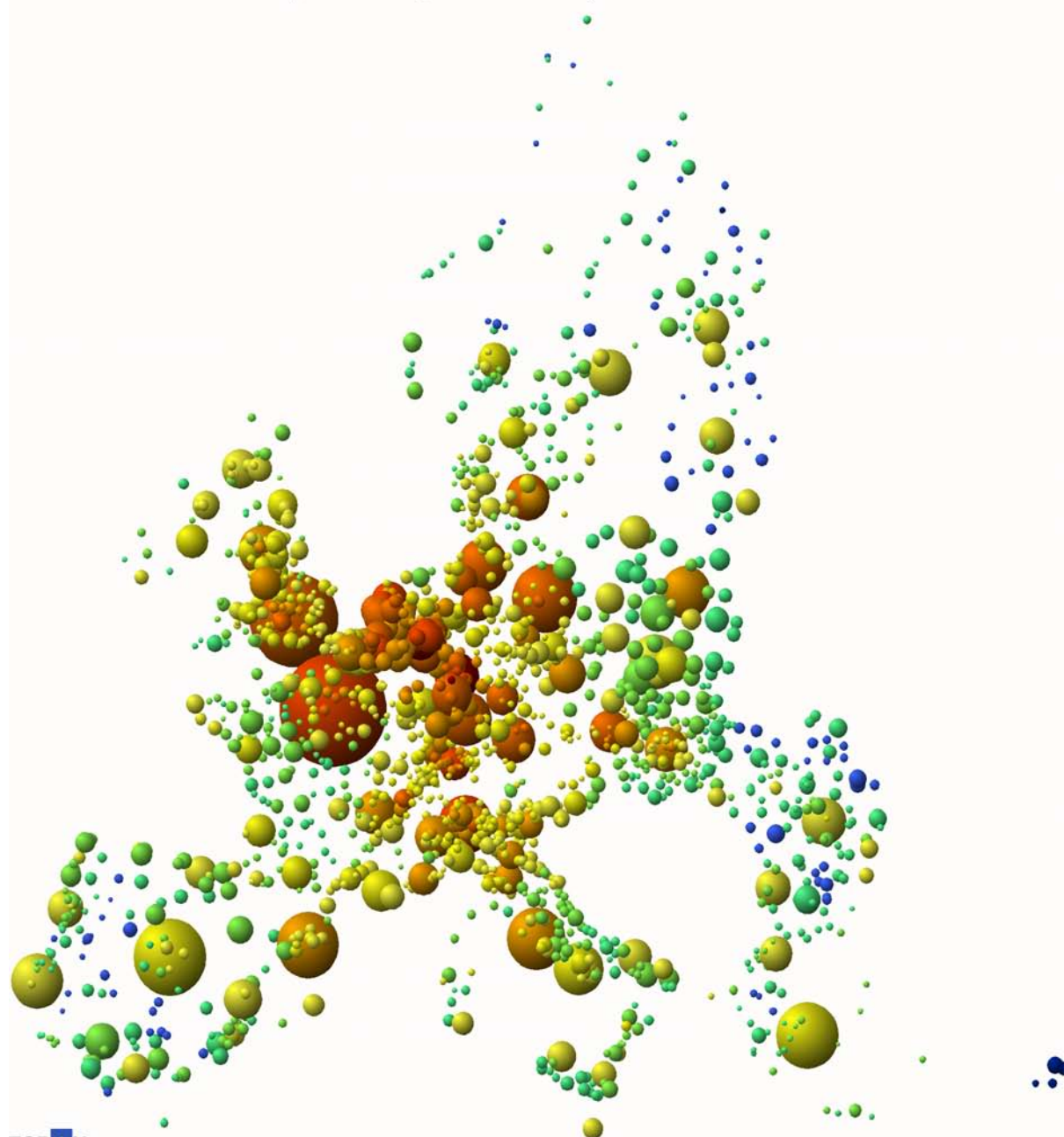
1.3.5 Accessibility is dependent on location, not on size

The quality of transport infrastructure in terms of capacity, connectivity, travel speeds etc. determines competitive advantage of location relative to other cities or urban regions. This can be measured as potential accessibility, i.e. based on the assumption that the attraction of a destination increases with size, and declines with distance, travel time or cost. Potential accessibility indicators measure the potential for networking and interaction of a location, not the real use of the potential. The accessibility indicator belongs to the connectivity group of indicators. Applied to European urban regions it describes their relative geographical position in the European transport systems as one of their most important competitive features.

Map 4 shows the results of applying the multimodal potential accessibility concept of ESPON 1.2.1 to the current set of FUAs. In the map the FUAs are represented in two ways. The size of the circle represents the size of the population. The colour of the circle reflects multimodal accessibility, i.e. a combination of road, rail and air accessibility in one single indicator.

Very peripheral FUAs can be found in remote parts of Portugal, Spain, and Greece, on Cyprus, in Bulgaria and Romania, in the Baltic states and in the very north of Europe. Smaller FUAs in Portugal, Spain, Italy, Greece, Ireland, in the Nordic countries and in the acceding countries are classified as being peripheral. The larger agglomerations in those countries are on the European average, some are even central. The FUAs with highest accessibility values are mainly located in the UK, northern France, Benelux, in Germany, Switzerland and Austria and in northern Italy. Here, even smaller FUAs have very high accessibility values. Overall, the largest agglomerations do not necessarily have the highest accessibility.

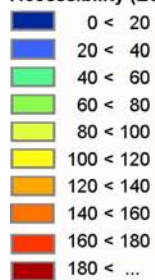
Potential accessibility of FUAs, multimodal, 2001



ESPON
EUROPEAN SPATIAL PLANNING
OBSERVATION NETWORK

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Accessibility (ESPON Space = 100)



Map no 4: Potential accessibility of Functional Urban Areas

1.4 Flows and polycentric practises

1.4.1 The strongest flows are between large cities

Thus far, the analysis has overlooked the relational aspects of polycentrism. These are however vitally important, and will be further developed in the final report. Ideally, we would need data on the actual exchange between urban regions. Unfortunately such data is rare on the regional or national level, and certainly not available for comparative studies across Europe. We have therefore concentrated our efforts on a limited number of indicators as regards the flows between European cities:

- Air connections
- Student exchange through the ERASMUS programme
- Participation in Interreg programmes

The main picture is that air traffic is more concentrated now than 10 years ago: there has been a trend towards flow polarization around London and Paris, with an increasing distance to Frankfurt and Amsterdam as the next traffic hubs. However, some important cities outside the Pentagon, such as Lisbon, Madrid, Barcelona, Prague, Berlin and Warsaw have experienced a faster growth in air traffic.

Regarding student exchange, the most attractive cities are the major national and regional capitals located in the Western part of Europe. Spanish cities are particularly attractive and have high flows of students both in and out. Swedish, Irish and British cities have a positive balance, while Italian cities have a negative balance.

The participation in Interreg programmes is studied for a small selection of programmes, and shows that medium and small sized towns are amongst the most active.

1.4.2 Co-operation between cities and regions is a tool for polycentricity

A third important feature of polycentricity, that is more closely linked to spatial planning practice and strategies for regional development, is that of *governance*. The belief in the local *milieu* includes the idea that regional development has to rely on local stakeholders making joint efforts in respect of developing and promoting the region. Such joint efforts have, to a large extent, been formed by informal rather than formal organisations. In some cases partnerships have been effective in pooling local resources as well as in lobbying vis-à-vis national governments, other authorities and agencies. A new idea of government has been formed, focusing on crossing boundaries within the public sector as well as crossing boundaries between the public, private and community sectors. Rather than focusing on exercising the authority of government, the informal organisations focus on new roads to reach joint goals. Rather than being a simply managerial process, the process is heavily politicised. This new way of governing is called *governance*.

Creating horizontal and vertical co-operation between various levels of government, as well as between government and non-public bodies, and achieving integration between disparate responsibilities has now become the central focus of effective governance. This is particularly the case with regard to the polycentric development of Europe. Promoting economic competitiveness in European polycentric urban regions needs both 'hard' infrastructure, such as an efficient transport and telecommunication network between and within the regions, and 'soft' infrastructure, including in particular an effective institutional network.

Empirical evidence with regard to the endowments of polycentricity is rather scarce and difficult to provide due to the ambiguities of the concept of polycentricity and the difficulties of benchmarking the complex situations of different regions. We will therefore take this forward through an examination of the level and nature of political polycentricity in different European countries. Our focus is on those partnerships and networks that have a wider place-based strategic remit.

From the work so far, it is clear that partnerships require more *robust political and policy frameworks* if they are to operate successfully, as commitment from the higher tiers of government is necessary. Moreover, the issue of *resources* (funding) is important. It is necessary to integrate activities with existing national and EU funding to become sustainable.

In the final year of this project, efforts will concentrate on the application of the concept of polycentrism in each of the countries of EU 27+2 and on the identification of good practices in European regions.

1.5 Policies for polycentricity - first recommendations

1.5.1 Added value to current policies

As the competence within spatial planning is with the countries, the EU contribution to a polycentric development policy has to be mediated via other EU policies. The ESPON programme suggests that the Cohesion policy and the Structural Funds are amongst the most spatially relevant policies, and that they would benefit from the comprehensive approach proposed by the ESDP and its focus on development options

At the *regional level* it has become mainstream policy for local authorities to co-operate with neighbouring cities and local agencies, e.g. universities and local business co-operations. Cities have realised that they may become more influential players vis-a-vis national governments and the EU, if they act in a concerted way towards common challenges.

At the *national level* the enhancement of polycentric urban systems would be in line with the recent focus in most countries on regional policies that contribute to economic growth in all parts of the national territories - urban as well as rural, centrally as well as peripherally located. Policies for polycentric development also call for broad partnerships, which again is in line with the implementation of Structural Funds.

The enhancement of a polycentric tissue at the *European level* works in concert with current efforts in EU regional policies on strengthening regions outside the European core. The strengthening of relations between cities rather than cities as centres of their own goes hand in hand with the efforts on enhancing spatial cohesion in Europe.

1.5.2 Different issues and actors at each geographical level

We have defined a polycentric urban system as *a spatial organisation of cities characterised by a functional division of labour, economic and institutional integration, and political co-operation*. Thus far, our empirical work has concentrated on the description of the urban tissue of the EU 27+2, as this is a necessary precondition for the discussion of possible policies to influence the future urban structure in Europe.

As we have seen above, the concept of polycentricity is of relevance at all territorial levels, even if the issues are different. We shall now try to elaborate policy recommendations at all three levels based on our empirical findings as well as on the current discussions on polycentrism and regional development.

On occasion there may be a contradiction between policies at different geographical levels. A policy for increased polycentricity and spatial balance at the European level will aim at the strengthening of the strongest urban regions outside the Pentagon. As far as this is done by concentrating investments in these regions at the expense of other (and more) peripheral regions, the urban systems of the countries in question may then become more monocentric. The same discussion can also be applied at the national level, where the strengthening of secondary cities with the aim of balancing the capital region may increase the difference between these and smaller cities. Such contradictions can

potentially create certain political tensions that can ultimately only be dealt with on a case-by-case basis.

1.5.3 Policies for polycentricity at the regional level

Polycentric structures within large urban regions

At the regional level, the challenge is to enhance regional strengths in order to stimulate welfare and economic development. As a general rule, large city regions do have a wider set of economic activities than do smaller regions, especially as regards services. They do also have larger labour markets. Therefore, they offer better services for businesses and families as well as more job opportunities.

On the other hand, large city regions do also face a number of challenges in respect of welfare issues, such as traffic congestion and crime. A city region's physical structure may be important for pollution levels and for the availability of recreation areas. The challenge is therefore to combine the advantages of size without having too many of the disadvantages. Polycentricity may be a part of the answer here, since a polycentric structure with a functional division within the larger urban region is often regarded as better than urban sprawl.

Strategic co-operation and investments in infrastructure

One set of measures here will be investments in hard and soft infrastructure. Physical infrastructure (road, rail) will improve the links and reduce travel time between the centres within the region. Investments in transport infrastructure can also connect new cities to the larger urban area and increase integration over a larger area ("regional enlargement"). Soft infrastructure (culture, education, etc.) can contribute to the specialisation of cities within the urban region and stimulate the division of labour between them.

Strategic planning and co-operation between cities are key issues at this level. The mental distance between neighbouring cities may in some cases be more important to overcome than the physical distance. The integration of larger city regions demands co-operation from a large number of stakeholders in the public as well as the private sector, i.e. a good governance.

Contribution from EU policies

Responsibilities for polycentric policies at this level rest with the national planning authorities and the cities and regions themselves. European regional policies may be used to support national and regional authorities in several ways:

- In general, EU policies dealing with urban issues should turn current efforts towards the development of *linkages between cities* rather than the mere development of cities when ever optional. Available funds may be used for hard and/or soft investments (depending on areas and regulations). Especially in the Cohesion countries and in Objective 1 areas, there are possibilities for investments in productive infrastructure to be utilised for transport investments and investments promoting functional specialisation.
- The zoning of Objective 2 programme regions should make it possible to include measures for economically functional regions. This has not always been the case in the past. There are several examples of separate programmes for urban and rural regions, and of programme areas where the urban core is left out while the rest of the functional region is included.
- Regional partnerships can be encouraged to focus on analyses of their urban structures. The need to consider issues regarding the morphology and functions of urban areas can be included in the Structural Fund regulations for Objective 1 as well as for Objective 2 programmes. This may be implemented as part of the SWOT analyses, or as a horizontal topic. For this to be effective, a set of guidelines for the understanding of polycentricity is also necessary.

- Neighbouring cities can be encouraged to co-operate strategically to explore the potentials in forming a common polycentric region with joint strategies and visions, joint institutions and complementary urban functions.

1.5.4 Policies for polycentricity at the national level

More balanced national urban systems

Most European countries have since the 1990s experienced increasing regional polarisation between centrally located city regions on the one hand, and peripherally located regions and regions undergoing structural change on the other.

At the national level, the challenge is therefore to make higher-order services available for all parts of the countries in order to stimulate economic competitiveness and improve territorial cohesion. The urban system does have an impact here, as it organises important parts of economic life.

Functional specialisation and strengthening the second tier of cities

Policies at this level should focus on the division of labour between the various national nodes, and the balance between the economically strongest regions within a country and the rest of the urban structure. In monocentric countries, this implies a focus on the second tiers of cities.

This is of particular relevance for many acceding countries now facing rapid structural change and urbanisation. In this context, polycentricity means that investments should be directed towards urban regions other than the strongest ones in order to develop strong alternatives, as this will give them a more even access to services and contribute to the integration of these regions with the rest of Europe.

Contribution from EU policies

Several EU policies are important for the development of national urban systems. Investments in Trans-European Networks have obvious impacts on the relative position of city regions, and the Framework programmes for research contributes to the strengthening of city regions with good research facilities.

The Structural Funds are however the main policy instruments for territorial cohesion. The EU can influence national and regional programming directly in countries where large parts of the territory are eligible for structural support. This is particularly the case for the acceding countries, where large national infrastructure investments may be co-funded by the Structural Funds.

The EU can contribute to a more polycentric national urban structure in a number of ways:

- Co-funding of investments in productive infrastructure that contributes to the functional specialisation of the second tier of cities, as well as to the strengthening of the links between these urban regions and the European core. This is of relevance especially for Cohesion countries and Objective 1 regions.
- Encourage a national spatial planning regime in which the country's urban structure and the role of their cities in a wider European context is discussed. A possible instrument here can be to invite countries and regions to discussions of the concept of polycentric development in the context of the empirical data on the urban structure of EU 27+2 and the identification of potential polycentric regions.

1.5.5 Policies for polycentricity at the European level

Competitiveness and territorial cohesion

At the European level, the main issue is to stimulate the development of regions beyond the Pentagon into becoming *global integration zones*. A more polycentric structure, with several strong urban regions of European and global significance, can contribute to the competitiveness of Europe as well as to cohesion between different territories.

The empirical data reveals a situation with significant differences between the core and the periphery regarding the urban tissue. Even if statistics at this level also show large core-periphery differences in GDP, we do find large variations regarding income levels and development endowments between centrally located regions as well as between peripherally located regions.

This observation is even more valid at the EU 27+2 level than the EU 15 level. After enlargement, there will be several new EU Member States with dense urban systems, located relatively close to the Pentagon.

Development of strong urban regions as supplements to the Pentagon

Policies at this level should focus on the regions with the largest potentials for establishing polycentric structures. There are several large urban regions that have potentials to become Global Integration Zones at the level of London and Paris. The strongest candidates are however located within or in close proximity to the Pentagon.

The challenge is therefore to identify and strengthen polycentric regions in other parts of Europe that can supplement the Pentagon functionally.

Contribution from EU policies

Again, investments in Trans-European networks are important for the functions of city regions at the European level. A conscious localisation of European institutions will potentially impact significantly on the functional specialisation of city regions.

EU regional policies are also of importance for the development of polycentric structures at the European level:

- Funds must be made available for the enhancement of polycentric urban structures. The distribution of funding between EU regions is therefore important. Historically, a substantial part of the Structural Funds has been spent in urban regions. This will probably remain the case in the future, since a concentration of funds to regions lagging behind automatically will make a substantial part of the urban structure in EU 25 eligible for Structural Fund support, i.e. the city regions of the acceding countries.
- The new generation of Objective 2 programmes is expected to have measures for the development of urban regions. If these are to have an impact on city structures, such measures should go beyond the issues of urban decay and reconstruction, and allow support for actions promoting the specialisation of the larger polycentric city regions.
- Instruments such as Interreg and Interact should be used for the promotion of networking, development of common strategies covering several cities (also cross-border) and for the dissemination of good practices between the city regions that are in the forefront of polycentric thinking.

Appendix C - CPMR study abstracts

EXECUTIVE SUMMARY

Introduction

The ESDP, adopted in Potsdam in 1999 by the Ministers in charge of spatial planning, set as a priority the principle of a “Polycentric and balanced spatial development within the EU”. The present study was designed with a view to examining this concept in greater detail and imagining what kind of configuration this particular option might take in Europe’s peripheries, both in terms of content (policy options) and form (mapping scenario). The work was organised at European level under the coordination of the CPMR and its Maritime Peripheries Forward Studies Unit and was contracted out to a team of experts in charge of the national and thematic approaches, further enriched by a number of “test” interviews with public- and private-sector players. The idea behind this approach was to analyse the concept of polycentrism in its two dimensions:

- “European polycentrism”, the main objective of which is to enhance, on a Europe-wide scale, conurbations and urban systems with enough demographic weight and economic potential to enable them to interact directly with the main European and global decision-making centres and spread their influence over large peripheral areas.
- “functional polycentrism”, which aims to encourage better complementarity between the European urban areas so that they may play a more structuring role in achieving a greater balance between the territories. Functional polycentrism is a concept that can be applied at a wide variety of different levels, according to the kinds of functions that need to be better integrated.

Evaluation and typology of the peripheral urban systems

To start with, the team selected 41 “European-ranking” urban systems identified as being likely to underpin a European polycentric project. This does not however prevent other smaller conurbations or systems from being subsequently included in more detailed studies. These urban systems represent approximately 25% of the territory covered by the study and concentrate around 45% of its population. The systems were configured according to a certain number of criteria. These included the presence of a conurbation with a population of at least 500,000 inhabitants and the identification of other urban centres with a population greater than 150,000 and located at a maximum distance of approximately 130km, connected by motorway. It was agreed that the system as a whole should have a population of approximately at least one million inhabitants.

The urban systems and conurbations of peripheral regions were assessed on this basis and compared, as far as possible, with the situation of the three Pentagon-based systems in the countries covered by the study (London, Paris and Milan). From this evaluation, we can clearly see that, despite having a few features in common, the peripheral urban systems show a high level of diversity between themselves, and likewise with regard to the Pentagon. It is easy to see significant differences in the extent to which each of the systems have accumulated setbacks, preventing them from playing the full role that could be expected of them in the near future. The criteria for which disparities in favour of the Pentagon are most evident are mass, measured by population and by GDP, economic decision-making centres and connectivity by air. In contrast, the peripheral systems showing the highest levels of performance achieve similar scores to the Pentagon-based systems for other indicators such as GDP per capita in ppp in relation to the EU average, and productivity. The top-ranking peripheral systems occasionally fare better than the Pentagon-based systems in factors such as educational attainment or research and development (mainly the Nordic systems) and in respect of drivers of change, e.g. growth

in GDP per capita in purchasing power parity (Madrid), productivity (Galicia) and population (Toulouse). However, there are still wide gaps between the peripheral systems themselves, both in terms of stock and dynamic indicators.

The peripheral urban systems do not therefore have the same advantages when it comes to facing the objective of European polycentrism. According to the approach adopted in this study, polycentric development relies on a number of key conditions being met:

- competitiveness of the systems,
- connectivity (mainly by rail and air) and cooperation between the urban systems,
- their functional relations and the development of threshold and range effects, which create synergies that are essential in overcoming the setbacks related to their peripherality,
- interlinking the peripheral urban systems with the main European and world centres, thus allowing them to become more involved in the dynamics of the world economy.

A typology gives an indication of the main roles and functions that the peripheral urban systems currently assume within the European territory. Five indicators were used in order to establish this typology and concern competitiveness, economic decision-making centres, human capital, connectivity and drivers of change. After cross-referencing these five aspects, the urban systems were classed into five different categories: peripheral gateways, rising stars, promising systems, dilemma systems and the most peripheral systems.

Sectoral drivers, national characteristics and the credibility of a polycentric project

The study also drew on the results of some 150 interviews with private- and public-sector operators working at European, national or regional level. Presented in the form of a succinct summary, it offers an interpretation of the polycentric project with regard to certain sectoral trends or a number of major national characteristics summarised on the basis of four factors, these being of a geo-strategic, socio-cultural/historic, administrative and political nature.

Three thematic approaches were selected in order to examine in greater detail whether or not they contributed towards polycentrism. These were enterprise development, research & development and innovation and transport. These three approaches led to a certain number of common conclusions, which confirm the dominant notion that the main factors of competitiveness are subject to an increasingly marked spatial segregation. Market-led thinking is becoming increasingly important in determining the fate of the territories, whether in terms of the choice of business locations, R&D policies or transport infrastructures. Few remedial measures are provided by public policies to offset this trend, if indeed this were possible. On the contrary, the underlying idea is to see how market forces may be exploited in a more balanced way within each of these sectors, by opting to foster certain effects brought about through concentration and/or specialisation in the peripheries.

These phenomena are generally in play in each of the countries studied, although they may of course take on different forms. However, a comparison of the national situations provides a wealth of information as to the way in which public authorities look at this issue, and how it may be addressed. This comparison shows that there is still a certain degree of national short-sightedness as far as territorial matters are concerned, although the long-term trends point towards greater spatial integration. However, the polycentric project has not yet been taken on board to a great extent in national, regional and urban policies, despite the fact that it represents a rising concern.

Development scenarios of the peripheral urban systems

On the basis of these initial analyses, two scenarios were established: i) a “straight-line” scenario, taking into consideration a continued progression of the various developments identified, without any specific public intervention in favour of a polycentric project at European level; and ii) a “voluntarist” scenario which, while remaining realistic, would result in the implementation within the next 20 or 30 years of a voluntarist policy in favour of this model, involving all spheres of government.

The “straight-line” hypothesis would lead quite quickly to a gradual expansion of the Pentagon, as it spreads its influence towards the centre of the UK, northern Italy, south-eastern France and the southern Baltic area. It would also see the emergence of a number of peripheral gateways such as Madrid and the North European capitals. Very few peripheral urban systems will emerge strongly outside of the extended Pentagon area. Only Lisbon, Barcelona, Toulouse and Göteborg seem to show a reassuring level of drive. A few promising urban systems located along the major transport corridors could emerge here and there, while a large number of dilemma or highly peripheral areas will continue to face a very uncertain future. Such a scenario would soon result in a reinforcement of polarisation and specialisation phenomena to the advantage of a limited number of peripheral urban systems, thus contributing towards increased territorial asymmetries.

A voluntarist hypothesis in favour of redressing the balance of the European territory and developing polycentrism is based on a situation where all political levels – from European level, to national, regional and urban level – contribute towards structuring cooperation areas that are able to better polarise certain development factors. In order to achieve this, it would be necessary to work on three different scales. In order of priority, they are as follows:

- strengthening of the “Metropolitan European Growth Areas” (MEGA). These are areas comprising the identified urban systems and their wider sphere of influence, and polarising factors of competitiveness. Priority would be given to encouraging cooperation at this level, which would require the strong intervention of a certain number of sectoral policies, a significant adaptation of the current regional policy, accompanying measures for national policies to break up the concentration of economic activity, and finally a strong involvement and cooperation on the part of the regional and urban areas;
- accompanying measures to aid the emergence of new development corridors resulting from the networking and cooperation efforts between several MEGAs, mainly through transport policies;
- progressive accompanying measures over a more long-term period for what the ESDP refers to as global economic integration zones (GIZ).

The implementation of such a policy would call for a greater coordination between the different levels of public services acting within the territories, in order to reinforce the impact and leverage effects of public-sector action in circumstances where budgets are often tight. In particular, this would mean applying policies that, by nature, would exercise a certain positive discrimination, a practice which is not particularly widespread at present. This can only work if there is a much greater show of solidarity among territories, not only on a European scale, but also on more specific territorial levels. Such strategies would need to be studied in greater detail, especially with regard to Interreg actions, of which one of the main virtues is to closely involve the different players. Furthermore, they might also draw on the more in-depth studies currently being undertaken within the ESPON.

This perspective could for example result in a spatial vision of the peripheries, which might be outlined as follows:

* Structuring of the Atlantic area into three development corridors:

- An Iberian Atlantic Zone, which despite being strongly connected to Madrid, is managing nonetheless to redress the balance through a step-by-step structuring of the territory involving the coastal systems of Galicia, Porto and Lisbon on towards Seville in the west, and a strengthening of the cross-border system of the Basque Country in the north.
- A “North Atlantic” Zone, giving a central role to the urban system of Manchester-Liverpool, notably in its relations with Ireland, North America and Scandinavia. The area extends northwards to Glasgow-Edinburgh, westwards to Dublin and Belfast, to Birmingham-Coventry and Nottingham-Derby in the centre, and southwards to Bristol-Cardiff-Swindon, thus providing a credible territorial offer to complement London and the home counties.
- A French Atlantic Zone which is much more voluntarist and uncertain in respect of the high level of dependency of each system on Paris. Strengthening the MEGAs of Loire-Bretagne the Basque region or Bordeaux area, or other secondary systems such as Poitou-Charentes, appears as such to be a long-term objective.

* Structuring of the Nordic area around two development corridors, that are already showing different levels of consolidation:

- to the west, the development corridor formed by the Scandinavian capitals, which already shows a high degree of territorial integration,
- to the east, the development corridor of the Gulf of Finland, whose future remains more uncertain despite the foreseeable drivers of change and opportunities that should arise with the enlargement of the European Union to the east and the consolidation of Russia’s development process

* Structuring of the Mediterranean area covered by the study into three corridors:

- An Iberian Mediterranean Zone, structured notably on the basis of the integration of the systems of Andalusia and Murcia-Alicante and of the systems of Valencia and Catalonia, offering Barcelona a role as European gateway.
- A Central Mediterranean and Alpine Zone that includes mainly northern and central Italy and south-eastern France.
- A Southern Italian Zone that could gradually structure itself on a bipolar basis where Rome and Naples play a pivotal role, with the other urban systems clustering around them.

Subsequent studies designed to enrich this initial approach deserve to be undertaken, so that the main players might agree on whether or not to uphold these initial working hypotheses, and more importantly so that these proposals might be applied to more specific territorial levels in accordance with projects that are up and running in these areas.

III.3. Typology of the peripheral urban systems with regard to European polycentrism

The peripheral urban systems do not therefore have the same advantages when it comes to facing the objective of European polycentrism. According to the approach adopted in this study, polycentric development relies on a number of key conditions being met:

- competitiveness of the systems,
- connectivity and cooperation between the urban systems,
- their functional relations and the development of threshold and range effects, which create synergies that are essential in overcoming the setbacks related to their peripherality,
- interlinking the peripheral urban systems with the main European and world centres, thus allowing them to become more involved in the dynamics of the world economy.

In view of the differences observed between the systems, we have felt it more worthwhile to reason in terms of a behavioural typology of the different urban systems rather than adopting a hierarchical approach. The proposed typology thus attempts to highlight the situation of the peripheral urban systems with regard to the key conditions indicated above. The methodology is based on the behaviour of a set of stock and dynamic variables selected from among the indicators discussed in the previous points. This typology gives an indication of the main roles and functions that the peripheral urban systems currently assume within the European territory.

The indicators used to establish this typology are listed below:

- The competitiveness of the urban systems, evaluated by the indicator showing GDP per capita in ppp in relation to the European average. This is an indicator, which, despite its limits, is universally recognised as providing the means by which to comparatively measure the competitiveness of the territories. The analysis of this indicator is further refined by analysing productivity levels.
- Economic decision-making centres, evaluated by the number of headquarters of the top 1500 European firms located in the peripheral urban systems. This indicator provides data on the extent to which the peripheral urban systems are involved in the economic decision-making mechanisms within the business sector.
- Human capital, evaluated by an index calculated by cross-referencing the indicators of employment in research and development as a percentage of the total employment figure, and the percentage of the population between 25 and 59 years of age with a high level of educational attainment. The greater the human capital of an urban system, the more it is able to create the right conditions for its development.
- Connectivity, evaluated by the number of international flights from the peripheral urban systems, completed with information on the number of international destinations. This indicator provides details on the flows of relations between the systems, helping to assess to what extent they are open to the outside and integrated into international networks. Additional data is also provided by the indicator showing the connectivity of the peripheral urban systems with other areas outside the European Union, which gives information on the role that these systems play as “gateways” from the EU to the rest of the world.
- Drivers of change, evaluated by the indicator of growth in GDP per capita in ppp in relation to the EU average, which provides details on the capacity of the peripheral urban systems to “catch up”, notably with the Pentagon. This indicator is completed by an analysis of the growth in productivity.

The table below briefly presents the situation of each of the peripheral urban systems in relation to each of these factors. The five factors have been cross-referenced to give the following typology:

Type 1 – Peripheral gateways

This type comprises the most competitive systems, which play a role in economic decision-making, have a strong human capital and a high level of connectivity, especially with areas outside the European Union. These systems play a key role in building European polycentrism insofar as they are in a condition to link up the other peripheral systems and territories with the world economy. This is the case of the main capital systems.

Type I:

Helsinki-Tampere, København-Malmö, Madrid, Roma, Stockholm, Oslo

Type 2 – Rising stars

This type comprises the highly competitive urban systems (that rank on the same level or slightly below the type described above), that could play a role in economic decision-making, and which have a good level of international connectivity (in some cases with areas outside the EU), or are located near to the Pentagon. These systems may in some cases show a few competitive weaknesses with regard to human capital or productivity, some of them undergoing processes of economic conversion. These systems will have a very important role as relays in building polycentrism. They ensure the competitiveness of the territories and create knock-on effects in neighbouring territories. Their interaction with the gateway systems and with the weaker national systems and territories is a major condition for asserting the polycentric model. This is especially the case of a number of systems in central UK and northern Italy, and Barcelona or Lisbon, whose drivers of change could lead them to become European gateways, following the example of the category described above.

Type II

Barcelona, Birmingham-Black Country-Coventry, Bologna, Bristol-Cardiff-Swindon, Firenze, Genova, Glasgow-Edinburgh, Göteborg, Lisboa, Lyon-Grenoble, Manchester-Liverpool, Torino, Toulouse, Venezia-Padova

Type 3 – Promising systems

This category is made up of urban systems that are fairly competitive, but which play no part in economic decision-making and where competitive weaknesses continue to exist in terms of productivity and human capital. Some of them are undergoing processes of economic conversion. They generally have an average level of connectivity and show strong or moderate drivers of change. They are therefore major anchors in the development of the peripheral territories, which need to be consolidated and to improve their linkages with the other systems.

Type III

Leeds-Bradford, Newcastle, Nice-Cannes-Antibes, Nottingham-Derby, Pais Vasco, Zaragoza

TABLE 22 SUMMARY

	Competitiveness	Productivity	Human Capital	Economic Decision-making Centres	Competitiveness Drivers	Productivity Drivers	Connectivity	Peripherality
Bologna								
Helsinki - Tampere								
Venezia-Padova								
Torino								
København - Malmö								
Roma								
Stockholm								
Firenze								
Genova								
Bristol/Cardiff/Swindon								
Madrid								
Toulouse								
Glasgow-Edinburgh								
Lyon - Grenoble								
Bordeaux								
Leeds-Bradford								
Belfast								
Barcelona								
Lisboa								
Pais Vasco								
Birmingham/Black Country/Coventry								
Nice/Cannes/Antibes								
Nottingham/Derby								
L'Aire Métropolitaine Marseillaise								
Manchester/Liverpool								
Göteborg								
Zaragoza								
Loire - Bretagne								
Valencia								
Newcastle								
Montpellier/Nîmes								
Cagliari								
Asturias								
Alicante - Murcia								
Bari								
Palermo								
Catania								
Napoli								
Galicia								
Porto								
Málaga								
Guadalquivir								
Oslo								

High	> 100%	> 7	> 6,4	> 0,6	> 8	> 10	> 4,5	> 3,9
Average	75 - 100%	06 - 07	4 - 6,4	0,1 - 0,6	7,6 - 8	8,7 - 10	1 - 4,5	2 - 3,9
Poor	< 75%	< 6	< 4	< 0,1	< 7,6	< 8,7	< 1	< 2
No information								

Note: The threshold values were defined on the basis of the index obtained in the previous tables for each of the variables.

Type 4.- Dilemma systems

This category includes systems with a still very uncertain future. The development of these systems will depend on their capacity to overcome certain weaknesses related to their competitiveness, connectivity or drivers of change. The situations encountered in this category vary quite considerably:

- The first group includes systems that are not very competitive and show major weaknesses in terms of productivity and human capital. However, they do show very positive signs of catching up. These include for example the systems of the Iberian Peninsula, such as Galicia, Porto, Guadalquivir and Malaga, which have greatly benefited from the Structural Funds.
- Other systems show an average level of competitiveness and some significant weaknesses, with certain difficulties in terms of connectivity and above all very weak drivers of change. At present, they seem far from being in a position to exploit their assets. This is notably the case of several French systems such as Marseille, Bordeaux or Montpellier-Nîmes.
- Other systems such as Loire-Bretagne or Valencia, which are more dynamic in certain respects, are on a borderline with types III and IV.

These systems, which can potentially influence a wide area within the peripheral territories, will constitute an interesting test for the success of a polycentric project. It is their capacity to polarise and create knock-on effects that will be most needed if polycentrism is to work in practice.

Type IV

Alicante-Murcia, Belfast, Bordeaux, Galicia, Guadalquivir, L'Aire Métropolitaine
Marseillaise, Loire-Bretagne Málaga, Montpellier-Nîmes, Porto, Valencia

Type 5 – Most peripheral systems

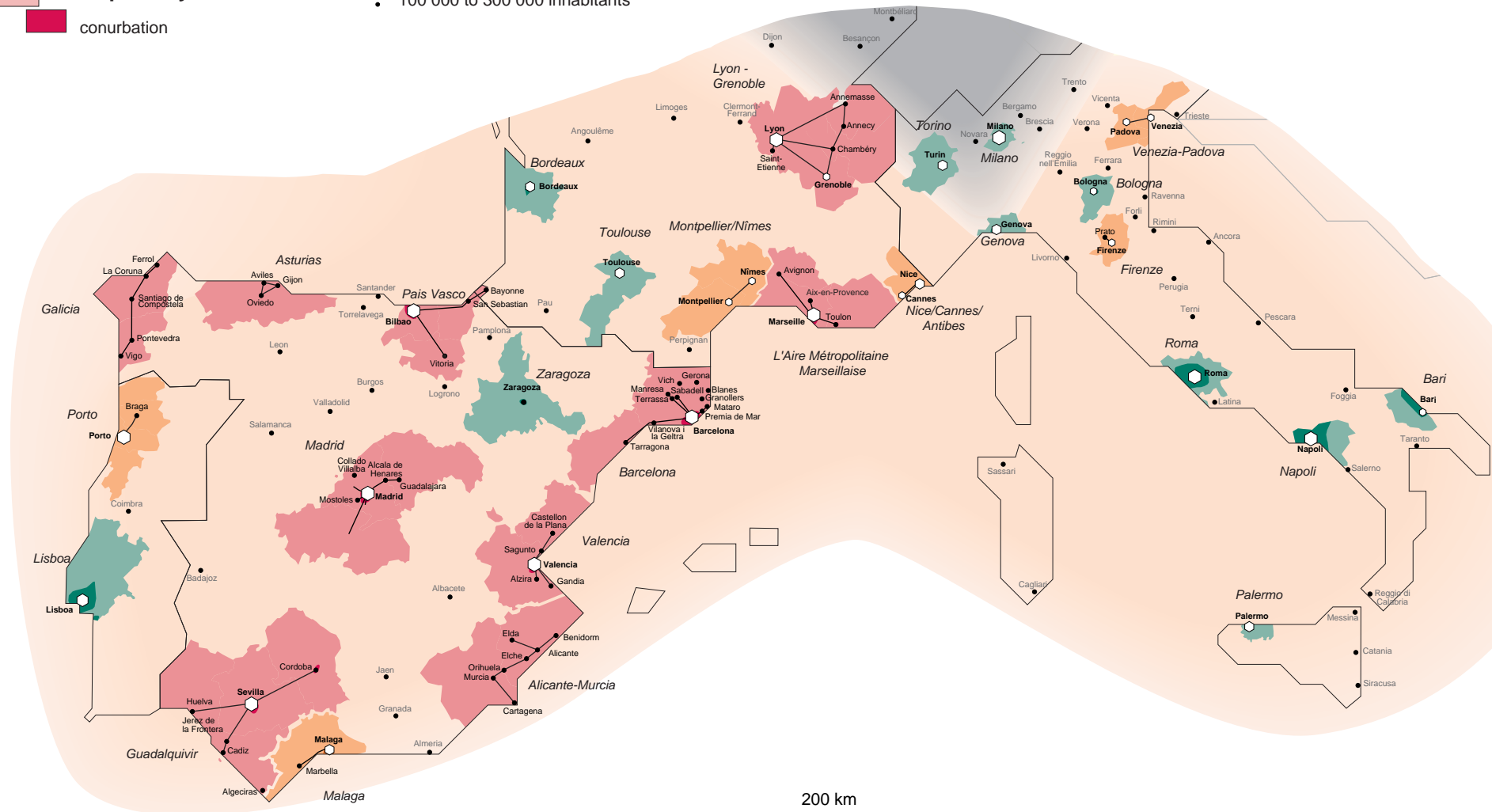
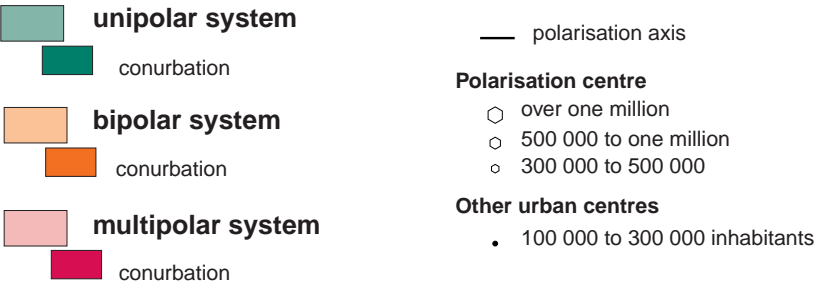
This final category includes the lowest-ranking peripheral systems that show weaknesses in terms of competitiveness, human capital and productivity. They are poorly connected at European level and although they show positive development trends, these are weak and often lower than the European average. Their development cannot be foreseen without major interventions designed to strengthen their cooperation with other stronger urban systems. This is notably the case of the systems of the Mezzogiorno and the Spanish system of Asturias.


Type V

Asturias, Bari, Napoli, Palermo, Catania, Cagliari

The map below gives an overview of the current situation of the peripheral urban systems, cross-referencing the various analyses presented above. Working on the basis of the national and thematic reports, the next step is to consider to what extent this map is likely to evolve over the coming years without the application of any specific policy in favour of a polycentric project (“straight-line” scenario), so as to then try and imagine the most likely outlook for a credible polycentric project.

5 - Mediterranean area



Urban System Factsheet: BARCELONA	
Main centres: Barcelona, Tarragona	
Population 1999 (1000's):	
% of total national population	
Annual population growth (1985-1999) %	
	5171.5
	13.1%
	-0.05%

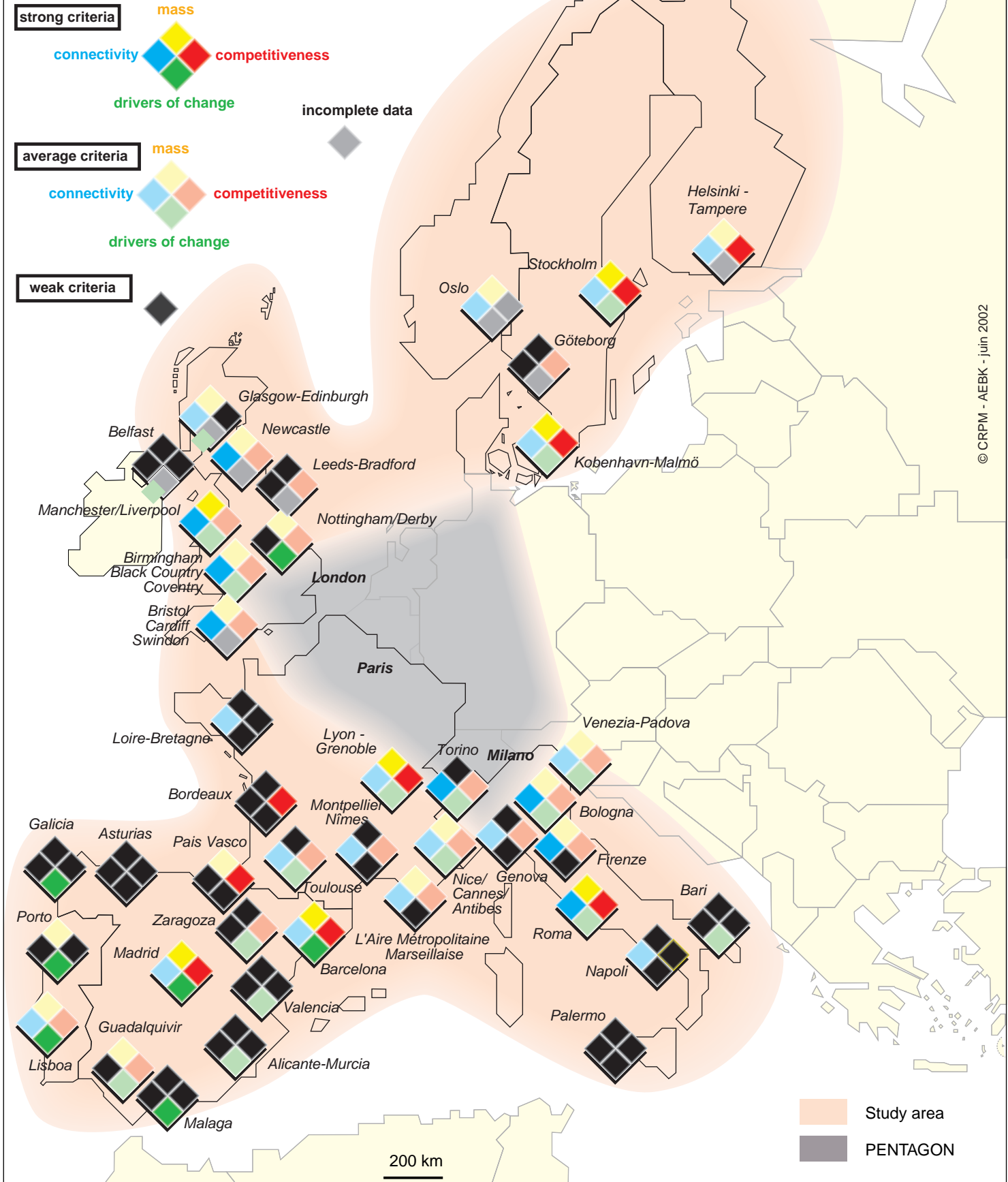
Competitiveness		
GDP per capita in PPP EU15=100		
98		
Productivity 1995 (GDP PPP (1000's)/employment)		
46.5 EU15= 43.2 Paris= 63.1		
Economic decision-making centres (Headquarters of the top 1500 European firms located in the urban system)		
5		
Human Capital		
Level of educational attainment of the population aged 25 to 59 years (% of total). High level of educational attainment 1999	Employment in R&D as a % of total employment 1999	R&D expenditure as a % of GDP 1999
22.0%	1.3%	1.1%
Drivers of change		
Δ GDP PPP per capita EU15=5.19% London/SE=6.81%	Average annual growth in GDP per capita in PPP 1985-99	Average annual growth in productivity 1985-95
Δ Productivity EU15= 3.2% Milano= 5.1%	6.85%	4.7%

Connectivity		
By Air		
Airports	Barcelona	
Main destinations and no. of regular weekly flights: Glasgow (1), Nantes (1), Bristol (3), Birmingham (5), Oslo (5), Napoli (6), Helsinki (7), Manchester (7), Murcia (7), Stockholm (7), Middle East (9), Bordeaux (11), Liverpool (12), Zaragoza (12), Copenhagen (13), Hamburg (13), Venezia (13), Bologna (14), North America (15), Porto (15), Marseille (16), Firenze (22), Vitoria (23), Africa (24), East/Russia (24), Torino (24), Lyon (30), La Coruna (35), Zurich (35), Vigo (37), Lisboa (38), Roma (40), Munich (42), San Sebastian (42), Nice (44), Santiago Compostela (47), Frankfurt (55), Brussels (58), Alicante (68), Amsterdam (69), Valencia (72), Milan (73), Bilbao (90), Paris (95), Malaga (102), Sevilla (125), London (128), Madrid (768)		
By rail (No of daily connections taking less than 3 ½ hrs at an average speed of >90km/h)		
Internal Connectivity	Linked systems	Number of connections
2	Valencia Zaragoza	14 3
		Total 17

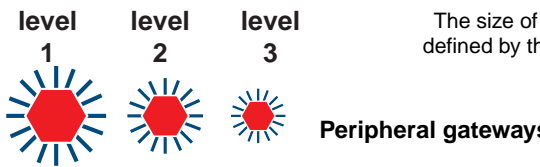
Evaluation of the System	
Strengths	Diversified economy with a good level of performance. Important cultural heritage as a factor in attracting tourism. Importance of Barcelona harbour. Barcelona international airport
Weaknesses	Environmental problems. Limits of Barcelona airport
Opportunities	Importance of product design and innovation and the related added value process as factors of competitiveness and generating value.
Threats	Erosion and deforestation.

29 - Data for overview

Analysis of the potential of the urban systems for implementing European polycentrism



30 - Current situation



main interconnecting routes

The size of the symbols is defined by the mass criterion

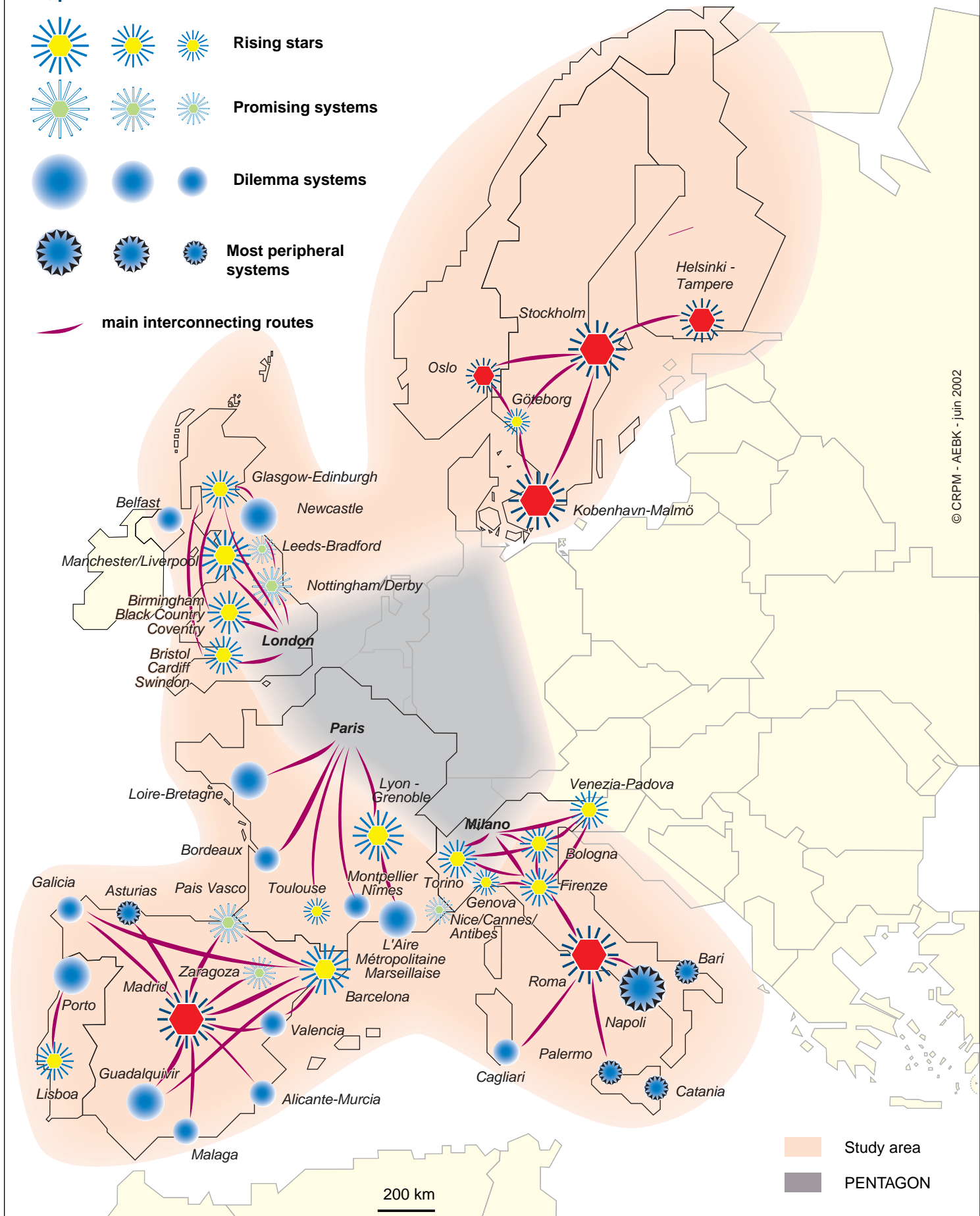



TABLEAU 24. “STRAIGHT-LINE” DEVELOPMENT HYPOTHESIS


TYPOLGY OF SYSTEMS	Development hypotheses
1. Peripheral gateways	Strengthening of the position of these systems in the peripheral areas, either in terms of competitiveness or in terms of connectivity. Emergence of a transnational development corridor involving the Scandinavian capitals. Strengthening of Madrid's position within the Iberian Peninsula, notably as a result of the building of the new airport and logistics infrastructure and the development of the high-speed rail network. Greater uncertainty remains as to the system of Helsinki-Tampere and the building up of a transnational polycentric system in the Gulf of Finland, on account of a number of economic vulnerabilities and weaknesses in terms of connectivity that still need to be addressed.
2. Rising stars	The systems closest to the centre of Europe will join up with the dynamics of the Pentagon, which will extend to the regions of northern Italy, south-eastern France and central UK on towards Dublin, including in particular the systems of the Po Valley, Lyon-Grenoble, and the UK systems of Birmingham-Black Country-Coventry, Bristol-Cardiff-Swindon, Manchester-Liverpool and possibly Glasgow-Edinburgh, where the cohesion of this system remains to be strengthened. (1) The future of the systems furthest away from the centre of Europe, such as Lisbon, Barcelona, Toulouse and Gothenburg, is less certain, and will depend on the capacities to maintain the current drivers of change in terms of connectivity and economic attractiveness on an international level, while resisting the polarisation trends generated by Madrid, Paris and the Nordic capitals, in addition to the other points of the Pentagon.
3. Promising systems	Systems which, on account of their geo-strategic positions near the main centres of development (Nice-Cannes-Antibes, Leeds-Bradford, Nottingham-Derby), in the development corridors (Zaragoza) or within range of cross-border dynamics (Basque Country), are in a good position to develop, provided that some weaknesses in competitiveness and, in certain cases, connectivity are addressed. (2)
4. Dilemma systems	These are systems whose development is the most uncertain. Their future will depend on tackling major weaknesses in terms of competitiveness and connectivity, which are key factors in maintaining the trends that are allowing some of them to catch up (peninsular systems). Their development will depend on their capacity to affirm themselves in the face of the polarisation trends generated by their respective capitals, by reinforcing their specialisations and developing better conditions of international connectivity. The Mediterranean systems could benefit from more favourable conditions owing to their closer proximity to the Pentagon, despite the complexity and difficulties in strategic cooperation on a transnational scale. The Atlantic systems are in a more difficult situation, and suffer especially from a certain degree of remoteness, which can only be offset by strengthening the cooperation networks with other neighbouring peripheral systems. This is the case of the peninsular systems of Porto and Galicia, or indeed Belfast and Dublin. Changes in the French systems of Bordeaux and Loire-Bretagne, which are relatively remote and strongly polarised by Paris, will depend on the capacity for growth in their specialist productions and, in the case of the system of Loire-Bretagne, the strengthening of the system's internal cohesion and therefore the links between Nantes and Rennes allowing them to have more of an international outlook.
5. Most peripheral systems	These are systems that risk being left out of the international dynamics, notably on account of their peripheral situation, low level of drive and insufficient connectivity. The Italian systems of the Mezzogiorno are in a more difficult position, despite the importance of Napoli in terms of its mass. Asturias is undergoing a conversion process marked by difficulties in diversification, and remains locked an isolated position, poorly connected on both a national and international scale.


- (1) The successful integration of a number of UK and northern Italian systems into the Pentagon dynamics also depends on their capacity to complete the economic conversion process currently in progress.
- (2) Some of these systems are undergoing an economic conversion process, the results of which will be crucial in confirming their development trends.

31 - Illustrative hypothesis: "straight-line" development


 Systems defined by their mass criterion


 Enlargement of the Pentagon
 and its relay systems

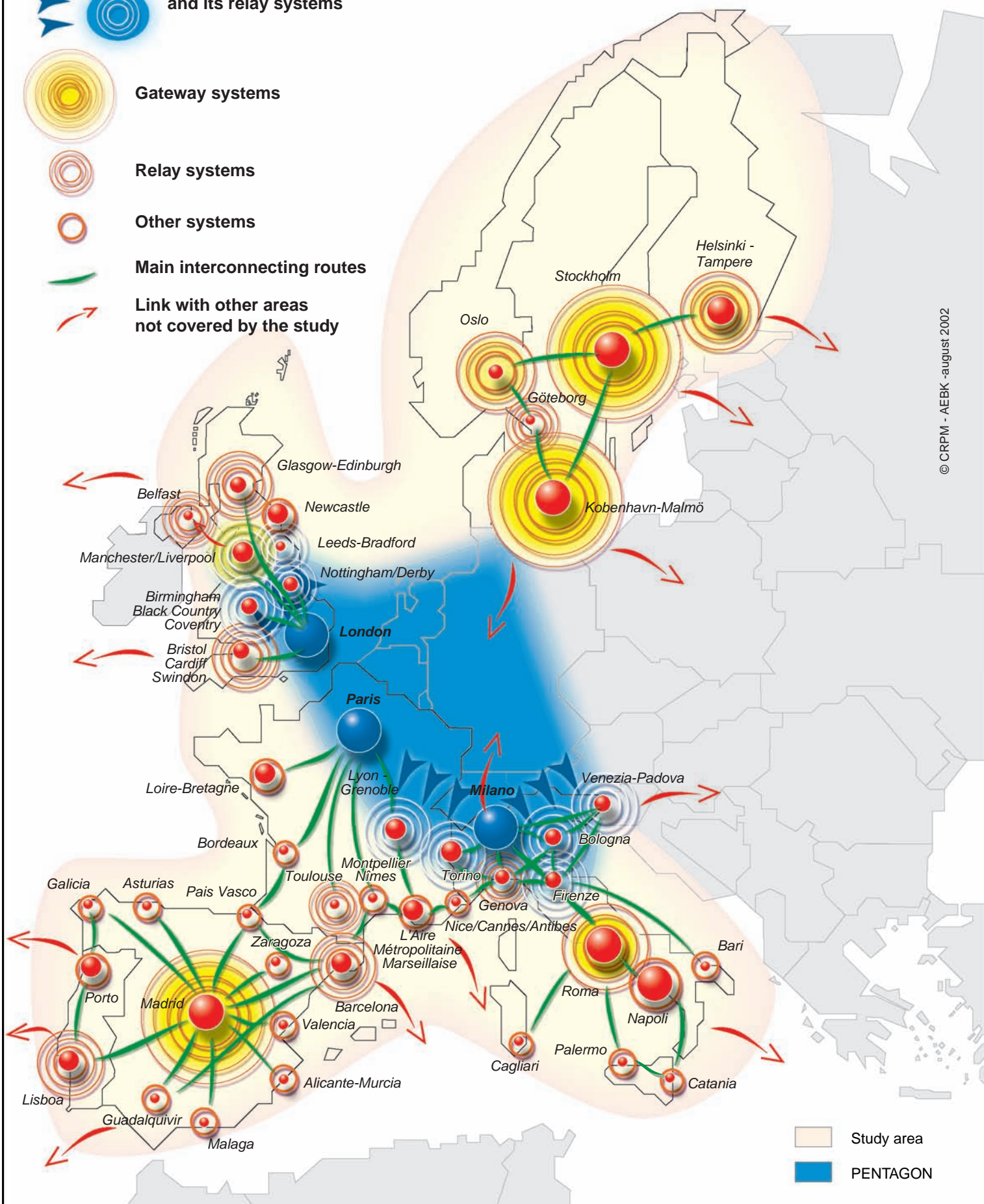

 Gateway systems


 Relay systems


 Other systems


 Main interconnecting routes


 Link with other areas
 not covered by the study



32 - Illustrative hypothesis: long-term voluntarist development

The urban systems



MEGA (Metropolitan European Growth Area)



Gateway systems



Relay systems



Other systems to be strengthened



GIZ: Global Integration Zone



Links between GIZs
(Nordic, Atlantic and Mediterranean areas)



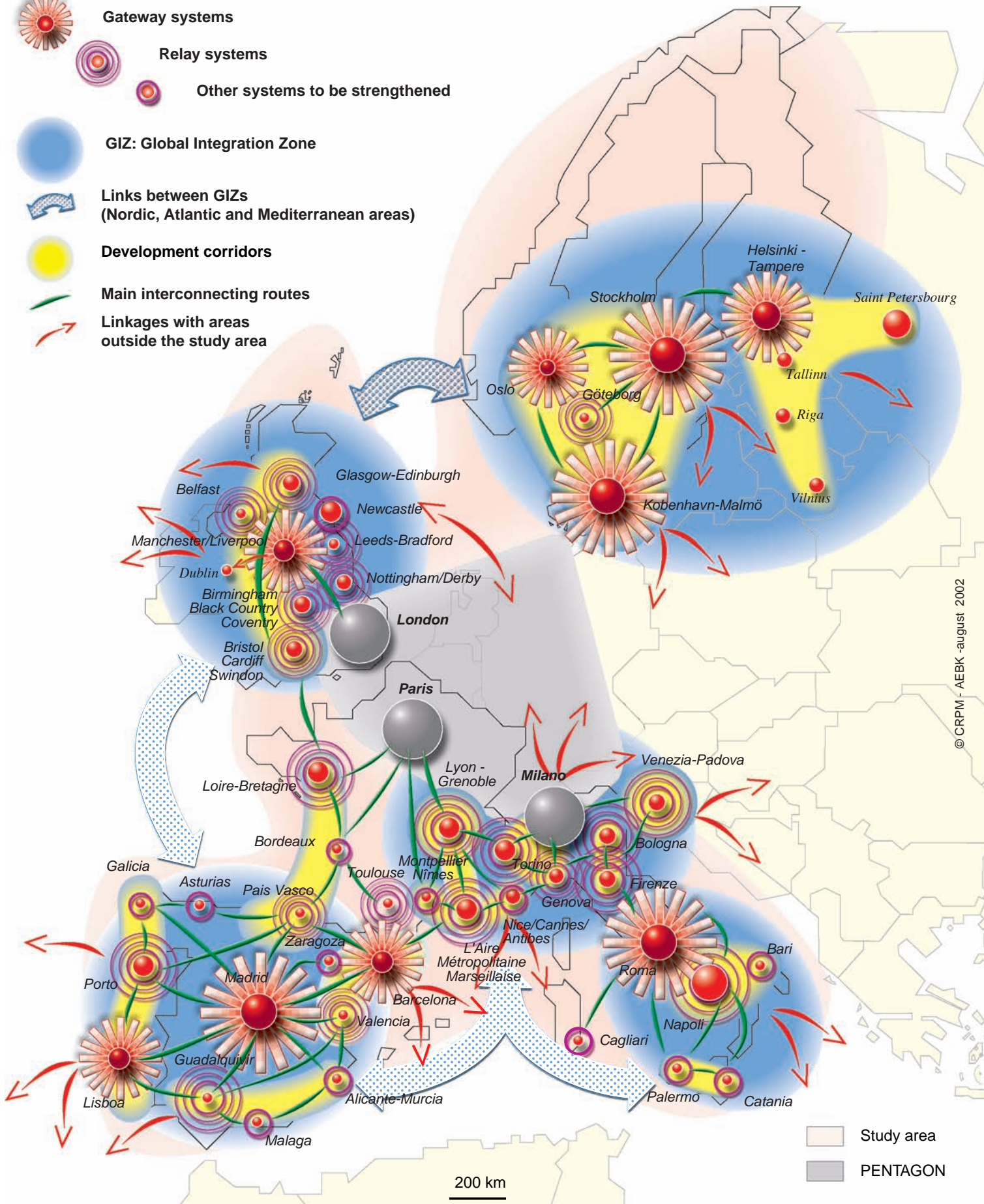
Development corridors



Main interconnecting routes



Linkages with areas
outside the study area



V. TOWARDS A VOLUNTARIST POLICY FOR EUROPEAN POLYCENTRISM?

V.1. Basis for a proposal

The previous chapters have shown how much progress still needs to be made before a polycentric project can take shape, more so in its European form than in its functional form, these two dimensions needing to be dealt with separately.

As far as **European polycentrism** is concerned, the first stumbling block to be overcome is that of an uncommunicative and hence rather unconvincing title, in a society that is increasingly sensitive to catchwords. With its current designation, polycentrism will have difficulty making its way out of specialist circles to win the confidence of the higher realms of power that it so badly needs. The values conveyed by this concept are nevertheless far from outmoded. They may be resumed in a number of different dimensions:

- Solidarity and European integration are at the core of the polycentric project, which seeks to foster centres of competitiveness and development throughout the European area, thus offering its citizens credible prospects for success;
- Sustainable development, focal point of the Gothenburg Summit, is not at odds with a more balanced long-term vision of the European territory, particularly with a view to combating the negative effects of over-concentration and promoting alternative modes of transport;
- European competitiveness, the main issue addressed at the Lisbon Summit, constitutes the content of a polycentric project that invites public services to play a key role in boosting a number of major centres of development in Europe, in respect of priority issues such as R&D, innovation, human resources and accessibility, etc.;
- Cooperation, whether at intergovernmental, interregional or interurban level, also constitutes a basic value, aiming to ensure more coherent and efficient public service action, by bringing together economic or functional territories and institutional territories,
- Pragmatism, finally, is a fundamental dimension of the polycentric project, which, far from aspiring towards an illusive equality between territories, seeks to find a way forward that combines both economic realism and the positive regulating effect of public intervention.

European polycentrism therefore carries with it a certain paradox, sensed during the various interviews conducted by the national and sectoral experts. It conveys the political values currently advocated at European level, especially within a long-term perspective (even though few players express it in these terms), while at the same time appearing to be relatively unrealistic from an economic point of view, insofar as it seeks to call into question certain major territorial effects brought about by the market, that many deem to be unavoidable. European polycentrism therefore puts two fundamental questions to the policy-makers:

- Should public services intervene to correct certain inequitable territorial effects brought about by the market at European level, and thereby step up its role as regulator within the territories? It is clear that such an intervention might only be considered in a proactive sense, by identifying specific policies aimed at certain territories, rather than by simply aiming to offset disparities between more or less developed centres through a policy akin to “robbing Peter to pay Paul”. The same basic question arises in other areas – such as public services of general interest – or at other levels such as territories suffering from permanent handicaps (islands, mountain areas, sparsely populated areas).
- Are these public services capable of introducing positive discrimination in the way they intervene, so as to make their action more effective and efficient in terms of its leverage effect?

Many States have already partly addressed the first question through a wide range of instruments with varying scopes of application. Most States have territorial compensation or adjustment schemes in the form of taxation measures, maintained public services, or per capita allocations or subsidies that differ depending on the characteristics of the territories. However, to be truly discriminating, polycentrism must be capable of intervening at the highest State level as a basic principle on which to establish a certain number of sectoral policies, which also means certain major investment decisions (public investments or grants for private investments), something which is hardly the case today. Polycentrism is not a retroactive compensatory policy, but rather a **forward-looking, discriminating, long-term policy**.

The national surveys show that the Nordic countries are currently closest to sharing this philosophy of public intervention. Furthermore, we know that certain federal States such as Germany, the USA or Canada have powerful interregional redistribution instruments that are vectors of a strong polycentric movement. Other countries such as France have in the past introduced intervention measures that, although different, to a certain extent follow the same principles (policy for “regional growth areas”). The question to be addressed today is whether, in the light of the growing integration of European economic and monetary policies, it is appropriate, by drawing on the cohesion policy and certain sectoral policies, to promote such a concept on a Europe-wide scale beyond the political scope of the ESDP. From this point of view, European polycentrism is essentially a top-down policy approach, whose principles of intervention might be incentive-based rather than of a directive nature. We will develop this point in greater detail below.

The issue of **functional polycentrism** requires a quite different line of action. It is primarily a “bottom-up” approach and depends on the capacity of the territories and the different institutional levels to cooperate and, above all, to agree on new positive cooperation arrangements. Functional polycentrism is not a new idea in the countries included in the study area. Many of them already do have existing cooperation practices, despite the fact that much progress still needs to be made in this area. The greatest difficulty lies in getting certain players to realise that they need to start cooperating at new levels, often on a wider scale than at present, taking as a reference the European area rather than the national or regional area. The urban systems identified for illustration purposes in this study – and which will only become a tangible reality if they win the support of the relevant players – in most cases still by no means constitute a political reality or may be considered as territories built around a common project. This state of affairs hinders the prospects of cooperation on a wider territorial scale, especially in the framework of the global economic integration zones advocated by the ESDP, which are supposed to be partly instigated by the Interreg IIIB programmes. From this point of view, it is clear that Europe – in close association with the States – may play a fundamental role in inciting and fostering this comparatively close-range cooperation. The States’ commitment towards a European polycentrism would certainly be the most helpful factor in achieving this kind of cooperation if it were to consist in inextricably linking the European and functional dimensions.

The present approach therefore comes at a crucial turning point in the “ESDP” process. If no policy measures are introduced at the highest levels of government action, the inferences could weigh heavily on the political future of the principle messages conveyed in the ESDP. At best, the territorial dimension of EU policies would only consist in providing a regular scientific monitoring of the effects of the single market and the progressive impact of the economic and social cohesion policy over the generations. In this proposal section, we will opt for the voluntarist approach, which is the only one capable of giving substance to the concept. We will attempt to identify in turn:

- The policies to be promoted in favour of both European and functional polycentrism,
- A possible long-term spatial vision for Europe’s peripheries, if such policies were to be implemented.

In addition to these different dimensions, we could have mentioned the types of projects that might actually support polycentrism. These are illustrated in almost all the national reports (Volume II), especially in the chapters on development opportunities within the urban systems covered by the study. We therefore invite the reader to refer thereto for more details. The following proposals are clearly inspired by the said report.

V.2. Towards a policy of “Metropolitan European Growth Areas” (MEGA)

During the course of the study, we identified an initial non-exhaustive list of territories capable of playing a major role – not only in Europe but also in favour of large expanses of neighbouring territories – in areas such as employment, accessibility or competitiveness. They were identified mainly on the basis of the presence of big cities generally showing strong capacities for networking with other cities with a view to eventually achieving more structuring threshold and range effects for the European peripheries. For simplicity’s sake, these have so far been referred to as “urban systems”. However, these new territories are not strictly speaking cities or regions, nor are they networked cities, but rather areas polarising contemporary development factors, in which we find a combination of urban, suburban and rural territories. We could define them as European areas with high potential growth and competitiveness.

As we have seen through the national appraisals and the typology of the European approach, these European growth areas do not fulfil their role as “regional growth territory” and “regional or interregional gateway to competitiveness” in the same conditions. The main reasons for this are:

- specific competitive weaknesses with regard to the knowledge economy (R&D, innovation);
- low availability of skilled labour, sometimes related to the small number or low standard of higher education establishments;
- an economic fabric under threat from international competition, owing to it being poorly adapted to the new criteria of international competitiveness or lacking in innovation;
- a lack of internal connectivity hindering the creation of a flexible and efficient job market (optimum use of threshold and range effects);
- a lack of external connectivity that may make it less attractive for foreign investments or national or international economic decision-making functions.

These weaknesses are not always properly appreciated by the regional and local players concerned, since more often than not, these territories represent major centres of competitiveness for their area of influence. Only through more in-depth comparisons at European, or indeed international level, is it possible to gauge the extent of the many challenges that still have to be faced – something that is confirmed in the large majority of interviews conducted with private-sector players.

Although it is acknowledged that specific action designed to increase the competitiveness of these territories is important for Europe, it still remains to be defined what combination of public interventions at EU, national, regional and local level is needed to achieve this objective. Our reasoning here falls mainly within the context of the current distribution of powers between the European Union, the States and the sub-state tiers of government, while also identifying the kind of developments that might help to speed up this process.

2.1 At Community level

The regional policy proves to be the most crucial instrument able to act in favour of such a policy. From this point of view, it may be affirmed that, since the creation of the ERDF and the 1988 reform, it has already partly contributed towards a European polycentrism. There is no need here to recall how certain peripheral urban centres have taken advantage of this policy to help them to catch up in terms

of their development. However, there are a number of limits to the present action implemented through this policy that need to be underlined:

- There is little criticism to be made in the regions eligible under Objective 1, except perhaps the failure to provide adequate incentives for more spatialised regional strategies that include the dimension of functional polycentrism, especially as far as programming transport infrastructures is concerned.
- In the regions eligible under Objective 2, two issues need to be addressed:
 - o Firstly zoning, which sometimes excludes the most dynamic urban centres from any EU intervention. However, by favouring only the more deprived areas, Community action may encounter problems in raising counterparty funding or getting projects off the ground.
 - o Secondly, the nature of eligible actions, which limits the capacity to influence heavy structural investments, particularly in the field of accessibility.
- Finally, concerning the transnational dimension, a combination of the following three aspects is to be regretted:
 - o These programmes have not yet managed to get all the legally competent players involved in implementing the more structuring projects (States in some cases, regional government policy departments in others);
 - o At present, the financial investments in these programmes are not enough to incite the implementation of structuring projects, especially as far as infrastructures are concerned. This leads to a certain dichotomy between the ambitions of the programme and the actual results;
 - o These programmes do not help to foster cooperation within purely national metropolitan European growth areas. However, we may note in this study that hardly any transnational MEGAs and relatively few cross-border areas figure among the peripheries. If the study had covered the whole of the continent, it is quite likely that this type of area would have been identified in the centre of Europe, where the demographic densities and geographical proximities between urban hubs are the greatest.

We are therefore left with the impression that the range of solutions offered by the current regional policy i) does not always provide the opportunity to support projects on the appropriate scale; ii) that interventions are carried out on too small a scale (Objective 2 zoning); iii) that they do not allow for interregional cooperation within European growth areas (both in respect of Objectives 1 and 2); iv) that the policy plans for large-scale cooperation either without providing the sufficient backing or in territories where the level of economic integration is still too low to enable them to fulfil the ambitions of the set objectives. In the light of this, the more or less long-term prospect of formalising globally important economic integration zones (GIZs), as described in the ESDP, seems to us to be highly unlikely unless they are considered on smaller scales, similar to those identified within the framework of the study.

Sectoral policies with a high territorial impact still, for the most part, play a rather small role in structuring the European territory. The only exceptions to this rule are the Common Agricultural Policy and the competition policy, although the first of these is not particularly relevant to the issues in hand.

The competition policy could have a major role to play if it were to introduce positive discrimination into the framework regulation on regional State aids, and likewise through its sectoral interventions,

especially in the areas of transport and research. For this kind of guideline to be introduced, there would need to be a far-reaching reform of the thinking behind this policy, which at present maintains a market-led approach. We do feel however that there is a potential area to be explored in favour of a purely incentive-based policy, which would not seriously commit the Community budget and would not contest the main foundations on which it is based. Some investments considered as being in the European interest could for example benefit from a derogation to the ceilings fixed for public aid. Such an option would require the European Union to reach an agreement defining an exact list of territories and types of projects that could benefit from these measures.

The European transport policy still currently has only a minor impact on the territories. Only changes in the EU's competences on major networks – which would encourage thinking in terms of links and networking between the main European hubs rather than in terms of corridors – would offer new development opportunities to many peripheral centres. Without interventions of this nature, the regional policy will remain the main lever for action in its capacity to co-finance national and/or regional initiatives.

The European research policy currently has a major impact on the funding of many European research projects, but it still has only a marginal influence, or indeed does not come into play at all, in decisions concerning the provision of infrastructure or research centre facilities in the territories. This dimension, certainly the most important as far as our approach is concerned, falls mainly within the scope of responsibility of national government or indeed the private sector.

2.2 At national level

Owing to a lack of integration at European level of a certain number of policies with a high territorial impact, it is necessary to assess the major importance of the national framework in implementing polycentrism, whether in respect of competition, transport or R&D and innovation policies.

By national level, we do not necessarily mean the State, but rather the whole range of institutional tiers involved in action directed toward the territories. Indeed, the way powers are divided between the national, regional and local levels varies widely from country to country. This means that specific responses are required according to each country. This is the case between the different countries in the study area and even more so in the enlarged Europe.

National-level action may however take different forms depending on whether it addresses European polycentrism or functional polycentrism:

- In the case of *functional polycentrism*, the scope for action is flexible enough in each country to imagine the possibility of introducing public procedures at national, regional and urban level with a view to developing economic and territorial cooperation within the MEGAs. This contractual framework could be accompanied by Community measures within the context of the future regional policy, which would help to pool public service resources.
- In the case of *European polycentrism*, the issue is more complex. The difficulty lies in considering it in the same way at national level according to the size, level of development and urban structure of the country:
 - o In terms of level of development, it may be considered that the higher the level of development achieved by a country, the more legitimate it is to expect a greater territorial balance within the country. Thus, although it may be understandable for some developing countries to depend solely on the development of their metropolis to join in the world economy, this is less acceptable – both politically and economically – in most Western States. Within the study area, most of the countries have achieved a relatively high level of development. Comparing matters from a European point of view, Portugal seems to be the country where a polarisation of investments in its

capital and second biggest city seems to be the most justified. However, this argument is much less easy to defend in countries like France, the UK and the Nordic countries, where the desire to seek a greater balance between the main growth areas is not at all in contradiction with the international success of their “capital” systems. On the contrary, this may actually be indispensable to enhancing their competitiveness and internal territorial cohesion.

- The size of the country also plays a fundamental role in the polycentric ambition that it may set itself. Some relatively dense countries with a reasonable distance between the main urban centres may be content with a first-level bipolar urban framework (e.g. Portugal). For countries such as France or Sweden, this would appear to be more difficult on account of the fact that the distances are further apart. So far, France has compensated for this disadvantage by extensively developing the high-speed rail network (TGV) rather than by adopting a truly polycentric policy.
- The existing urban structure is also an important parameter to be taken into account. In countries such as France, Spain, Italy or the UK, there are a certain number of relatively big potential “bedrock areas”, which are theoretically in a position to help structure the balance of the country. The Nordic countries however are confronted with a slightly different problem owing to a much more loosely connected urban structure. This means that the potential regional growth areas are smaller and therefore require rather specific policies.

On the whole, apart from a few slight differences, we nevertheless feel that in the countries within the study area, European polycentrism and national polycentrism do seem tie up. This means that the national sectoral policies need to play a major role in order to ensure the success of the project. **There will be no European polycentric project unless the national sectoral policies actively contribute towards this ambition.** The interviews conducted by the experts show that there is still a long way to go, especially in the areas of transport, research and innovation. Besides these major policies, certain States have at some time had the opportunity to try out relatively innovative measures such as mass waves of territorial devolution of top civil service posts. Many innovations are still possible in this area, European public service posts included, in order to trigger a polycentric trend.

The success of the polycentric project will depend on a great deal of thought being given:

- to a new policy for decentralising public services and encouraging coordinated regional and urban initiatives, in mainly centralised States;
- to interregional adjustment measures and to the means of strengthening cooperation between the different tiers, in mainly regionalised States.

In both cases, the European framework could prove to have a powerful leverage effect that would gain at the same time from stepping up intergovernmental cooperation in territorial policies. The proposals put forward by the team of Italian experts (p. 46 and 47 of the Italian report) offer a good spectrum of the type of interventions that could be opted for.

2.3 At regional and urban level

The support of territorial players for the polycentric project is quite clearly just as decisive as that of other levels. This calls for coordinated action on a Europe-wide scale that does not exclude any level of public intervention, especially with regard to implementing functional polycentrism. The quality of the polycentric project will therefore depend to a great extent on regional and urban politicians giving their support towards drawing up polycentric strategies that often require them to consider their territories in a new light.

In almost all the countries of the study area, one can often detect a certain wariness, or sometimes rivalry between relatively close-lying territories that could potentially form a MEGA. These rivalries are often expressed through their relation with their respective national capitals rather than through the means by which they might pull together to provide a credible counterweight. In this type of configuration, it is clear that any polycentric project will be doomed to failure and that it is difficult to imagine promoting the idea within the main geographical entities unless this first level of cooperation has shown proof of a genuine will or interest to cooperate. In this respect, we feel that certain steps were perhaps somewhat rushed when drawing up a certain number of European incentive policies.

We feel therefore that it is fundamentally important to make a strategic territorial diagnosis for each MEGA, in order to:

- validate the initial options identified by the national experts;
- enhance the diagnoses and project proposals;
- compare and then coordinate the strategic guidelines of the different urban centres and regions concerned;
- identify more precisely in operational terms the kind structuring projects designed to support the competitiveness of the MEGAs in the short, medium and long term.

Except in a few cases, the current configuration of the territorial policies does not allow the implementation of such action at European, national or close interregional level, often owing to **inadequate territorial levels of public intervention**. Furthermore, there are numerous other factual or psychological setbacks:

- hardly any strategic cooperation between cities;
- sometimes unproductive controversy between the urban and regional dimensions of development;
- lack of encouragement for close-range interregional cooperations (at both EU and national level) or will to cooperate between the regions;
- close interregional cooperation sometimes difficult to accept by the States, which see this as possibly encroaching on their own prerogatives;
- the urban dimension of EU policies restricted to the problem of socially deprived districts;
- an almost endemic clash between territorial action and sectoral action often subjected to market forces,...

The need for genuine strategic territorial measures thus appears to be quite obvious and a prerequisite to any pursuit of a more polycentric European project in terms of its functional dimension. In order to be credible, these measures need to go beyond the action currently carried out within the framework of the single programming documents or Community support frameworks and involve all the tiers concerned in a more transparent and open manner. The initial considerations on proposals for tripartite contracts involving the different levels of public service feel to us to be a step in the right direction, in that they bind the different levels by contract to implement previously negotiated projects.

V.3. Possible physical outlines of a voluntarist hypothesis

The voluntarist hypothesis is mainly based on strengthening the Metropolitan European Growth Areas identified for illustrative purposes in this study within Europe's peripheries. A voluntarist hypothesis could thus lead us to foresee the emergence of new development corridors as well as the creation of bigger zones, corresponding more to the concept of the global economic integration zone (GIZ) described in the ESDP. However, they will not be formalised unless there is a prior or parallel development of the MEGAs.

In these conditions, large territorial spaces, with one or more urban systems that are physically continuous and present a number of common geo-strategic, socio-cultural or political features, could gradually emerge. This could be especially the case where they possess one or more “gateways” with good internal and external connections, while enjoying relatively strong drivers of economic growth and competitiveness. Other areas, which, owing to their remote location, are necessarily smaller in terms of their geographic boundaries, could make up for their relatively small size by developing more distinct specialisations that would give them a certain identity.

These development corridors are identified on the basis of an in-depth examination of the urban systems of the study, as described in the national reports. Most of them are either nationally-based, which is a direct consequence of the peripheral character of the systems studied. A working hypothesis could have insisted on each development corridor containing at least one gateway or rising star. However, this is not possible given the geographic configuration of the territory, unless we want to build up an illusive vision of the European territory that does not take into account the strongly influential market trends.

The GIZs, conceived in a more long-term perspective, are mainly bi-national or indeed transnational in nature. Within the context of our current considerations, the potential GIZs appear to be the following: the Baltic, the UK, the Iberian Peninsula, Central and Alpine Mediterranean and southern Italy. Within each of these areas, one or more development corridors may develop as a result of strengthened links between the MEGAs. According to the three main geographic entities on which the study is based, they may be presented as follows.

Atlantic Area

The Atlantic area is economically and culturally diverse and covers a wide geographic area. These factors are a hindrance to the structuring of the territory and its affirmation as a GIZ. However, there are favourable political and institutional drivers that could help towards interlinking the area, and in particular a number of cooperation initiatives led by the cities, regions and socio-professional players (economic and social committees, chambers of agriculture, universities, etc.). From the analyses conducted in the previous chapters, three Atlantic sub-areas might be defined as potential development corridors.

- An Iberian Atlantic Zone, which despite being strongly connected to Madrid, is managing nonetheless to redress the balance through a step-by-step structuring of the territory involving the coastal systems of the Basque Country in the north, and Galicia, Porto and Lisbon on towards Seville in the west and south. In this sub-area, Lisbon plays a role as an intercontinental gateway complemented by other systems such as Porto, thus allowing a good level of connectivity of this area on an international scale. Its future structuring will depend on a number of fundamental questions being addressed, often requiring the bilateral involvement of Portugal and Spain. These include i) clarifying the high-speed network connections (Vigo-Porto-Lisbon, Porto-Lisbon-Madrid, Aveiro-Vilar Formoso-Valladolid towards Irun); ii) clarifying international road links between Portugal and Spain; iii) setting the deadline for the construction of the new Lisbon airport; iv) the Sines harbour project and its associated logistics platform; v) strengthening the innovation systems with a view to modernising the traditional productive fabrics; and vi) increasing the capacity to attract FDIs, especially in the automobile industry.
- A “North Atlantic” Zone giving a central role to the urban system of Manchester-Liverpool, notably in its relations with Ireland, North America and Scandinavia. Based on solving the main problems related to the conversion of the urban systems of which it is comprised, this European growth area extends northwards to Glasgow-Edinburgh, westwards to Dublin and Belfast, to Birmingham-Coventry and Nottingham-Derby in the centre, and southwards to Bristol-Cardiff-Swindon, thus providing a credible territorial offer to complement London and

the home counties. Its success depends to a great extent on the high level of connectivity between the systems, its capacity to cooperate to implement development strategies, and a strengthening of the R&D and innovation system in interaction with the economic base of the regions.

- A French Atlantic Zone, which is much more voluntarist and uncertain in respect of the high level of dependency of each system on Paris. Despite the fact that the French Atlantic urban system shares a certain number of similarities with the UK, its mass and geographical proximities are not yet of a similar scale to those encountered in the Atlantic dynamics across the Channel or indeed in the Iberian Peninsula. Strengthening the MEGAs of Loire-Bretagne the Basque region or Bordeaux area, or other secondary systems such as Poitou-Charentes, appears as such to be a long-term objective. Increasing the level of connectivity between these Atlantic systems will be a necessary subsequent step, given that at present the priority for most of them is to improve their links with the capital. It is not easy to break away from French territorial centralism. A more solid structuring of this French part of the Atlantic will, for many, be a determining factor in confirming a European Atlantic entity. The case of Toulouse reveals a model that is still not widely developed in the periphery. Although it lies geographically too far away from the Iberian systems to actually constitute a network, its relative remoteness is largely compensated by a strong, rather atypical drive based on highly specialised international relations, which nevertheless represents a sound guarantee for the future.

Nordic Area

The Nordic area could be structured around two development corridors already showing different levels of consolidation: to the west, the development corridor formed by the Scandinavian capitals, which already shows a high degree of territorial integration; and to the east, the development corridor of the Gulf of Finland, whose future remains more uncertain despite the foreseeable drivers of change and opportunities that should arise with the enlargement of the European Union to the east and the consolidation of Russia's development process. Moreover, these two development corridors are well interlinked and are also well connected to the North Atlantic area, especially with the connection between Stockholm and Copenhagen on the one hand and Manchester and Birmingham on the other. Cooperation trends are tending to emerge between the cross-border systems of Norway and the north-east of the UK. The development and voluntarist structuring of these development corridors will largely depend on the following factors: i) increasing the connectivity between the urban systems and with the outside, as well as with other smaller-scale national and cross-border systems; ii) boosting the underlying factors of competitiveness within these systems, especially the development of R&D, the efficiency of the innovation system and the training of highly skilled human resources; and iii) restoring the balance of the territory at national level, by integrating the smaller urban systems. Within the context of a voluntarist hypothesis, other key factors arise specifically in these two development corridors:

- the major challenge of the Scandinavian capitals area is to strengthen its functions as a global city so as to avoid the tendency towards relocating a large number of big company headquarters in central Europe. Although most close relations are still of a national or bi-national nature (cf. Nordic report), this area is the only one to show an affirmed transnational character for a number of major functions within the European peripheries. This doubtless explains the success of certain Interreg IIC and IIIB projects fostering cooperation between urban areas (Baltic Palette Project).
- the Gulf of Finland area, which is the progressive extension of the integration of the above area towards the eastern part of the Baltic, notably with the Baltic States via Helsinki and towards Poland on the one side and Russia on the other. This last axis however still raises the most doubts, owing to the uncertain economic changes in this important neighbouring country.

Mediterranean Area

Despite many common characteristics, the Mediterranean area still has a real difficulty in structuring itself as such over the whole of its seaboard. However, the population densities as well as its development potential could give rise, in a voluntarist dimension, to the progressive construction of three development corridors:

- An Iberian Mediterranean Zone structured notably on the basis of the integration of the systems of Andalusia and Murcia-Alicante and of the systems of Valencia and Catalonia, offering Barcelona a role as European gateway by increasing its connectivity with the other Iberian and Mediterranean systems (Mediterranean Arc) and with the centre of Europe. The strengthening of this area, like that of the Iberian Atlantic area, is therefore essential in building an Iberian polycentrism that is more evenly balanced in its relations with Madrid. The interlinkages between the Atlantic and Mediterranean areas are formed in the south by the links between the Andalusian system and the “Algarve-Lisbon” axis, and in the north by the links between the Basque system and the Catalan system along the Ebro corridor.
- A Central Mediterranean and Alpine Zone that includes mainly northern and central Italy (the north-west made up of the systems of Torino-Genova and Milano, the north-east comprising the Padova-Venecia system and the centre comprising the system of Bologna-Firenze) and south-eastern France (mainly the urban systems of Lyon, Marseille and Nice). A voluntarist option would ensure a more affirmed integration of this area, offering a complementary zone to the Pentagon. Its credibility will largely depend on improving infrastructures and integrating the area into the dynamics of a Mediterranean Arc stretching to Barcelona on one side and Rome on the other.
- A Southern Italian Zone could gradually structure itself on a bipolar basis where Rome and Naples play a pivotal role, with the other urban systems clustering around them. This hypothesis implies a strong voluntarist policy for increasing the competitiveness of the urban systems that form the area, especially with a view to helping them generate more trade with Greece, the Balkans and the rest of the western and central Mediterranean. Here again, the uncertainty that reigns over the development of the Mediterranean basin is not a factor that encourages rapid changes.

V.4. Conclusions

4.1 Introducing new territorial scales into the policies

It would seem to us that the polycentric project, as set out in the ESDP guidelines, may thus be achieved primarily by consolidating the urban systems covered by the study (MEGA programmes) while at the same time gradually building up neighbouring integration zones (development corridor programmes) leading up to global economic integration zones (GIZ programme) according to the terms mentioned in points 2 and 3 of the present chapter. A strategy will need to be drawn up specifically targeted towards this objective and designed to ensure a good coordination of policies at the different levels in addition to optimum mobilisation and coordination of dedicated financial instruments. It will need to be organised on the basis of a wide partnership involving the European Commission, the States and the sub-state tiers of government (Regions and Municipalities) and include common strategic objectives that respect the legal powers of each partner.

On this basis, the strategy for building polycentrism could include three main dimensions:

- strengthening the territorial cohesion and competitiveness of the MEGAs,
- drawing up strategic frameworks for the development corridors ,
- consolidating and articulating the GIZs.

Although these three dimensions may easily constitute a common guideline for action, it has to be admitted that the way in which these territorial issues are tackled in the different European countries and regions varies relatively widely. This diversity, far from being a weakness, offers a quite interesting scope for study that the current Interreg programming period could use to good account. It would call for the coordination mechanisms between the different institutional tiers involved in action within the territories to be stepped up, and arrangements for this could be made during the forthcoming reform of the regional policy to take into account the specific national and regional characteristics.

The core issue to be addressed henceforth is the possible future coordination of the policies inherent in the “MEGA” programmes and the “development corridor” and “GIZ” programmes on the one hand, and those currently advocated within the framework of the “Interreg” instrument and the mainstream on the other.

- The mainstream of the regional policy together with EU and national sectoral policies appear to be the best tools for implementing MEGA programmes in view of the heavy and structuring nature of the required interventions. It would simply be a question of making the programming more flexible so as to take into account the configuration of the urban systems.
- However, Interreg does, *a priori*, seem to be the best instrument for “development corridor” and “GIZ” type programmes. Except in very few cases, the strategic objectives assigned to the Interreg programmes are still nowhere near being achieved today, both in respect of the cross-border and transnational dimensions. Although the Interreg IIIB areas are suitable for initiating several one-off thematic projects, a few exchanges of experiences or pilot operations in territories with common socio-cultural characteristics, they do not strictly constitute functional areas in which truly structuring projects may be initiated. The only exception could be in the transport sector. Taking the study area as an example, the “Baltic”, “North Sea”, “Atlantic”, “South West Europe” and “Western Mediterranean” programmes could have provided a good opportunity to give more long-term consideration to new transport corridors and to improving the connectivity between urban systems. Although this has partly been the case, it will be undeniably difficult in the current context to take things much further, mainly for reasons related to governance (low level of involvement of Transport Ministers) and resources (marginal leverage effect). In contrast, the cross-border programmes are often too locally oriented to be able to take this dimension into account.

Two options therefore remain open on this point:

- Make changes to the Interreg boundaries so that they correspond more to the reality of the current or potential functional areas. Before such progress could be made, there would need to be a long phase of study and negotiation between Europe, the States, the Regions and the cities, which risks being far too long and tedious before it would be operational. Moreover, it would constitute a setback to carrying on certain worthwhile cooperations within large geographical entities.
- Or, drastically relax the rules for implementing Interreg funding to take into account the geographical reality of the development corridors and GIZs, whether they be of a national, bi-national or transnational nature. In order to be effective, such an option would also need to provide an easy way of channelling the Interreg programmes into the mainstream.

Finally, the issue of transport and accessibility still needs to be addressed. This does indeed constitute one of the essential conditions for the success of a more polycentric European model. It is difficult to imagine this being achieved without a stronger mobilisation of European funding towards this objective, based on different arrangements from the current tendencies. An explicitly polycentric “European transport network” objective might provide an interesting avenue to be explored.

Possible Working Framework

Strategic lines	Main objectives	Type of measures	Main political levels concerned	Funding instrument
1. Strengthening the territorial cohesion and competitiveness of the MEGAs	<ul style="list-style-type: none"> - Improve the internal connectivity of the MEGAs (mobility of the workforce and labour market) - Promote the competitiveness of the MEGAs (productive systems and innovation systems) - Develop external connectivity - Develop frameworks for Governance designed to encourage the territorial integration of the MEGAs 	<ul style="list-style-type: none"> - Strategic studies in key areas for the development of the MEGAs - Support for infrastructure and facilities projects - Support for developing strategies for promoting and attracting FDIs - Support for implementing technological development plans in coordination with the modernisation of the productive fabrics 	<ul style="list-style-type: none"> - National level - Regional and urban level 	<ul style="list-style-type: none"> - National and EU instruments within the framework of the revision of the regional policy (Obj. 1 and 2) - National and EU instruments within the framework of the sectoral policies e.g. transport, competition and R&D - Possible trials within the framework of the current regional policy
2- Structuring the development corridors and GIZs	<ul style="list-style-type: none"> - Ensure the territorial integration of the development corridors and GIZs (size and range effects necessary for their international competitiveness) 	<ul style="list-style-type: none"> - Strategic studies on the development of the development corridors and GIZs - Support for infrastructure projects designed to improve internal connectivity - Deepening of functional relations 	<ul style="list-style-type: none"> - National and regional level, together with EU level and, more occasionally the urban level 	<ul style="list-style-type: none"> - National and EU instruments within the framework of the reform of the regional policy and sectoral policies - EU instruments within the framework of the reformulated Interreg Programme

4.2 Taking the work further

This study was mainly designed to take the considerations on the ESDP a step further, but it does not constitute an end in itself. We believe that many other initiatives need to be undertaken in order to make progress in this area and continue to give substance to the polycentric project. There are three main areas in which action needs to be taken, i.e. scientific, political and experimental.

Scientific <i>(especially with the framework of ESPON)</i>	Political	Experimental <i>(especially within the framework of Interreg)</i>
Extend the principles of the study to the whole of the European territory (this aspect is provided for in the ESPON programme), one of the objectives being to specify in greater detail the functional relations between the peripheral areas and the Pentagon (this could not be done on account of the methodology of the study).	Convene an informal council of ministers on the issue of polycentrism and transport (joint meeting between Ministers in charge of Spatial Planning and Ministers of Transport). Include the notion of territorial cohesion in the forthcoming Treaty of the European Union in order to make it a shared political objective, from both a horizontal and vertical point of view.	Lead experimental actions in a number of “integrated travel-to-work areas” comparable to those of the urban systems covered by the study: added value of functional polycentrism for job markets and enterprise demands.
Further develop the notion of urban system and MEGA (especially in terms of size) and give it a common European framework (the notions of central city and region are the only ones to have been unanimously accepted under a transnational approach).	Begin a joint thought process between the European Commission, States and Regions on polycentrism and governance, with the involvement also of cities (how may these different spheres of government coordinate themselves better in order to implement a common polycentric type approach?)	Conduct a number of pilot operations in “development corridor” type trial territories, in addition to certain European MEGA programmes: territorial strategies, governance, projects (under either IIIB or IIIC).
Deal with the problem of small and medium-sized towns and their role with regard to rural or sparsely populated territories (typology, functions, dynamics, etc.).	Compile a revised “compendium”, updated with regard to the 1996 version, identifying good practices in each European country designed to ensure a greater balance between the territories (adjustment schemes) as well as territorial policies in favour of “polycentrism”. Make this an issue for debate at a ministerial meeting to tie in with the debate on the reform of the regional policy (European cohesion versus national and regional cohesion).	Undertake a certain number of studies on the link between MEGAs and Transport, or development corridors and transport, in various European urban systems (thinking in terms of polycentric programming, as opposed to the current rationale behind European transport corridors).
Develop the contribution that polycentrism can make towards the new thinking in terms of sustainable development (balance between the territories and competitiveness, sustainable modes of transport, problems related to land use, etc.).	Assess the contribution of the main EU and - more importantly - national sectoral policies towards polycentrism (inter-governmental exercise).	
Improve the understanding of interregional and interurban flows, especially from an economic and migratory point of view.		