ESPON
EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

Bundesamt
für Bauwesen und
Raumordnung

3rd

Interim Report

ESPON Project 3.1

Integrated Tools for European Spatial Development

Tuesday, 30 September 2003

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

Contents

Figures

Maps

Tables

Glossary

Abbreviation	Term
AC	Accession Country
CAP	Common Agricultural Policy
CDCR	Committee for Development and Conversion of Regions
CIP	Community Initiative Programme
CSD	Committee for Spatial Development
CU	Co-ordination Unit
DPSIR	Driving force, Pressure, State Impact Response
ECP	ESPON Contact Point
EEA	European Environmental Agency
E-ESDI	Environment – European Spatial Data Infrastructure now called INSPIRE
ERDF	European Regional Development Fund
ESDP	European Spatial Development Perspective
ESPON	European Spatial Planning Observation Network
FUA	Functional Urban Area
GMES	Global Monitoring of Environment and Security
ICT	Information and Communication Technology
IR	Interim Report
LP	Lead Partner
MA	Management Authority
MC	Monitoring Committee
MTR	Mid-Term Review
NC	Neighbouring Country
NFP	National Focal Point (former ECPs)
PA	Paying Authority
RDR	Rural Development Plan
SDS	Sustainable Development Strategy
SEA	Strategic Environmental Assessment
SIA	Sustainability Impact Analysis
SPESP	Study Programme on European Spatial Planing
SUD	Subcommittee on Spatial and Urban Development (working group of the CDCR)
SWOT	Strengths, Weaknesses, Opportunities and Threats

TA	Technical Assistance
TEN	Trans-European Networks
TERM	Transport and Environment Reporting Mechanism
TIA	Territorial Impact Analysis
TPG	Transnational Project Group

The present 3rd Interim Report of the ESPON Project 3.1 is a team effort of all project partners under the leadership of the BBR.

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Mcrit, S.L.
(Spain)

NORDREGIO - Nordic Centre for Spatial Development
(Sweden)

ÖIR - Österreichisches Institut für Raumordnung
(Austria)

PhDB consultant
(Belgium)

TAURUS
(Germany)

UEHR - Institute of Urban Environment and Human Resources (Greece)

UMS RIATE - Interdisciplinary Network for European Spatial Planning (France)

Part A

Executive summary and role of 3.1 in the ESPON

1 Progress by the TPGs

Beside of own research activities this report bases on the outcomes and results of the other 15 ongoing TPGs. As mentioned in the former report not all projects started there work at the same time. Table no. 1: Actual ESPON projects, nick names, interim reports and lead partners of the ESPON Programme 2006 (see Chapter 2) shows which project has to deliver which kind of report. This differs between 2nd and 3rd interim reports. Thus no final reports and consequently no final results are expected at this stage.

General overview/ impression

Generally it has to be emphasised that all TPGs made a good job and delivered useful outcomes. Partly that was not expected at this stage, because the contracts haven't required such a fast and pressurised modus operandi.

Implementation of the Crete Guidance Paper

In general a very positive conclusion about the implementation and application of the Crete Guidance Paper and thus the creation of a Common Platform can be given at this stage. In the actual August 2003 Interim Reports (2nd or 3rd) the majority of the TPGs (12 of 15) have refered to the Common Platform and the Crete Guidance Paper. Only three of them have neither mentioned nor implemented the Common Platform or the Crete Guidance Paper. Nine of the fifteen reports have listed the Common Platform and Crete Guidance Paper in the content. Some reports have a whole chapter, in which the application of the Crete Guidance Paper is explained and discussed. Other TPGs have only itemized the Crete Guidance Paper in a paragraph.

Typologies[Po1]

Indicators[Po2]

Maps/ application of the standard layout[Po3]

Policy Recommendations

First tentative policy recommendations, concerning to the contract, for this reporting period are only asked from TPGs, which deliver their 3rd IR. The purpose

of these policy recommendations depends on the different TPGs. Some give first tentative and relative precise policy recommendations. Other TPGs are acting very hesitant. But it has to be mentioned that in general under the given circumstances the outcome could be evaluated as positive. The results in the corresponding final reports can be awaited with eagerness. A comprehensive and compact resume as well as first tentative analysis is given in Chapter 4.2 of this report.

SWOT

All TPGs of the first round delivered a SWOT analysis. For the TPGs of the second round it's, except of one TPG, the same situation. For the third round projects one project delivered a SWOT. All in all only three SWOTs are missing. This should not belie on the fact that the completeness and also the level of detail of the SWOTs is varying. More information as well as first positive outcomes contains the Chapter 4.3.

Resume/ Conclusions/ Outlook

The reports presented in August 2003 show, as mentioned above, a good performance. Some outcomes will find their way into the 3rd Cohesion Report. Very positive is the involvement of the accession countries as well as Norway and Switzerland. This contributes in substantial way to the well-founded outcomes. This very positive start in the co-operation is an obligation for the future.

The previous outcomes and tentative results generate a different perspective. This permits a differentiated consideration and observation from the European level to the regional and partly to the local level, which for European politics is fundamental and of high importance.

Often only partly and separated thematic fields, like transport, urban-rual development, demography, etc. are consolidated and merged in the ESPON. It's getting clear that it is very important to observe, interpret and analyse the mostly separated aspects under a common spatial planning and territorial development point of view. Therewith the appreciation and understanding of Europe gets amplified and a sound base. Important are here the work on the database, the creation and set up of new indicators and typologies. Current lacks which can be filled by ESPON are getting now very obvious.

The projects in general are working very satisfying, because the projects abide to their contracts and the given time table. Also the projects are concentrating predominantly on the aims, concepts and terms of the ESDP, e.g. polycentrism. It is visible that the projects at this point of time are advanced in their work. This is to laud.

Important impulses for the further development of for example TEN, CAP, etc. emerge through the approach of the ESPON Programme.

A few projects lacking of compliance of formalities. Some are hesitant concerning policy recommendations. This should change until the ‘final report’.

2 Executive summary

The ESPON project 3.1 “Integrated Tools for European Spatial Development” is the co-ordinating and cross-thematic project of the ESPON Programme 2006[1]. It gives support to the technical and scientific co-ordination of the ESPON 2006 Programme and the projects under measures 1 and 2, including data collection, development of a GIS facility and map-making, thematic co-ordination preparing for the cross thematic exploitation of integrated results based on all projects prepared under the programme.

The ESPON Project 3.1 delivered a Draft First Interim Report before the first ESPON Seminar in Mondorf-les-Bains, its final Interim Report afterwards in December 2002 and the 2nd Interim Report in April 2003 before the ESPON Seminar on the island of Crete, Greece. Different points were raised in the response to the Second Interim Report which will be reflected in this report.

The 3rd Interim Report (IR) of the ESPON project 3.1 is not an extended version of the 1st and 2nd IR. It is an enhancement. ESPON is a “living” programme and therefore the interim reports have to react in a flexible way. This 3rd IR focuses especially on the first tentative results given by the different projects in their 2nd or 3rd Interim Report.

This report fulfils the requirements of the deliverables mentioned in the addendum of the contract of the TPG 3.1 as well as in the ‘Guidelines for [the] Interim Report in March 2003’ developed by the CU after the 1st Transnational Project Group (TPG) Leadpartner meeting in February 2003[2] and the guidelines established during the 2nd TPG Leadpartner meeting in June 2003[3].

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1 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.“ ESPON Programme 2006 (2002).*ESPON Programme 2006* [online] Available from : http://www.espon.lu/online/documentation/projects/index.html [31.03.2003]

2 see ‘Guidelines for [the] Interim Report in March 2003’ developed by the CU after the 1st Transnational Project Group (TPG) Leadpartner meeting, 28 February 2003

3 see the e-mail from 19th June 2003 ‘ESPON Follow up of Lead Partner meeting on 16-17 June 2003’ and the included document ‘GUIDELINES FOR INTERIM REPORT IN AUGUST 2003’

Addendum – Contract for ESPON 3.1

September 2003 (third interim report)

h) Identification of orientations on an implementation of territorial objectives into EU policies – from analytical tools to feasible policy measures based on TPG results;
i) Compilation of intermediate results on the territorial trends and impact of policies based on the variety of studies and themes covered by the ongoing projects;
j) Working document on tentative recommendations to policy development towards the ESDP and the Structural Funds after 2006, including possible European priorities in different part of the enlarged EU territory and the necessities to coordinate the impacts of spatially relevant sector policies, taking into account recommendations of TPG's;
k) Working document to prove first steps towards the preparation of methodologies for prospective scenarios

Additional:

Data integration
All relevant datasets, scripts/programmes, eventual models and algorithms produced under the research contracts will, as far as they are made available, be included as elements in the ESPON information system.

Outputs/deliverables
Working maps and thematic data sets: The direct findings and deliverables of the respective research themes will be presented via ESPON GIS by means of the standardised templates – a common style.
Schematic policy material - illustrations: Progress towards a consensus on the legends and symbology to be adopted across the full range of themes under study. A comprehensive set of examples will be presented, with alternatives.
First diagnosis of territorial trends and disparities.
Policy development
Principal findings, conclusions and proposals for an integrated policy framework, particularly in response to the priority theme of polycentrism and accessibility.

A guideline for the Interim Reports addressed to all TPGs added special requirements:

The 'Guidelines for [the] Interim Report in August 2003'[4] add:

- to apply to the 'Crete Guidance Paper'
- to reflect the CU response [on the last interim report]
- to include the provided disclaimer
- to divide the structure and content into two parts:

Part one:

- Executive Summary with main preliminary results, including policy recommendations (approx. 20 pages)

[4] see 'Guidelines for [the] Interim Report in August 2003' developed by the CU after the 2nd Transnational Project Group (TPG) Leadpartner meeting, 16 and 17 June 2003

- Short presentation on concepts, methodologies and typologies used/developed
- List of indicators developed/provided to the ESPON Data base
- List of maps and tables in the Interim Report
- Short report on the application of common platform and Crete Guidance paper
- Networking undertaken towards other TPG.

Part two:

- to cover all points in the Addendum to the contract on results requested for the Interim Report in August 2003 (minimum requirement)
- to add any additional elements developed by the TPG

All mentioned points by the addendum or the so called 'guidelines' are fulfilled with this report. In particular,

- identification of orientations on an implementation of territorial objectives (**addendum h**) is addressed in Chapter 4.1
- territorial trends and impact of policies (**addendum i**) are addressed in the Chapter 4.3
- tentative recommendations to policy development (**addendum j**) is addressed in the Chapter 4.2
- proving first steps towards the preparation of methodologies for prospective scenarios (**addendum k**), see Chapter 6.1

The added request on data integration is part of the Chapter 5 on the ESPON database and GIS.

The different topics mentioned in the 'Guidelines for [the] Interim Report in August 2003[5] are, as it is visible, considered and implemented in this report

With this report the project 3.1 goes straight forward to fulfil requirements of the terms of reference mentioned-.[6] Also the responses towards the 2nd IR were taken in mind and are included in the content of the different chapters of this report.

[5] see 'Guidelines for [the] Interim Report in August 2003' developed by the CU after the 2nd Transnational Project Group (TPG) Leadpartner meeting, 16 and 17 June 2003

[6] see: http://www.espon.lu/online/documentation/projects/cross_thematic/185/tor_3.1.pdf, page no. 10 (Political challanges for the ESPON projects), 4th paragraph and following

This report is subdivided into seven chapters. It integrates the work and current results of meanwhile 15 TPGs of the first, second and third round. Mentioned 15 TPGs started their work at different times. Therefore this report includes outcomes of 2nd and 3rd interim reports.

Table no 1: Actual ESPON projects, nick names, interim reports and lead partners of the ESPON Programme 2006

PROJECT NUMBER	TITLE	"NICKNAME"	REPORT No.	TPG Lead Partner
1.1.1	The role, specific situation and potentials of urban areas as nodes in a polycentric development	POLYCENTRISM	3rd	NORDREGIO
1.1.2	Urban-rural relations in Europe	URBAN-RURAL	3rd	Helsinki University of Technology Centre for Urban and Regional Studies
1.1.3	Particular Effects of enlargement of the EU and beyond on a polycentric spatial tissue with special attention on discontinuities and barriers	ENLARGEMENT	2nd	The Royal Institute of Technology (KTH)
1.1.4	The spatial effects of demographic trends and migration	DEMOGRAPHY TRENDS	2nd	ITPS (Swedish Institute for Growth Policy Studies)
1.2.1	Transport services and networks: Territorial trends and basic supply of infrastructure for territorial cohesion	TRANSPORT TRENDS	3rd	University of Tours
1.2.2	Telecommunication and energy services and networks: Territorial trends and basic supply of infrastructure for territorial cohesion	TELECOM TRENDS	3rd	Centre for Urban & Regional Studies (CURDS), University of Newcastle
1.2.3	Identification of spatially relevant aspects of information society.	INFORMATION SOCIETY	----------	---------
1.3.1	Territorial effects and management of natural and technological hazards in general and in relation to climate change	NATURAL HAZARDS	2nd	Geologian Survey of Finland
1.3.2	Territorial trends in the management of natural heritage	NATURAL HERITAGE	2nd	Royal Haskoning
1.3.3	The role and spatial effects of cultural heritage and identity.	CULTURAL HERITAGE	---------	----------

Continuation: Actual ESPON projects, nick names, interim reports and lead partners of the ESPON Programme 2006

PROJECT NUMBER	TITLE	"NICKNAME"	REPORT No.	TPG Lead Partner
2.1.1	Territorial impact of EU transport and TEN policies	TRANSPORT IMPACTS	3rd	Christian-Albrechts-Universität zu Kiel Institute of Regional Research
2.1.2	Territorial impact of EU research and development policy	R&D IMPACT	3rd	ECOTEC Research and Consulting Ltd.
2.1.3	The territorial impact of CAP and rural development policy	CAP IMPACT	3rd	University of Aberdeen Arkleton Centre for Rural Development Research Department of Land Economy
2.1.4	Territorial trends of energy services and networks and territorial impact of EU energy policy	ENERGY	2nd	CEEETA
2.2.1	Territorial effects of EU Structural Funds	STRUCTURAL FUNDS IMPACTS	2nd	NORDREGIO
2.2.2	Territorial effects of the "Aquis Communitaire", Pre-accession Aid and Phare/Tacis/Meda Programmes	ENLARGEMENT AID IMPACT	2nd	Institute for Regional Development and Structural Planning
2.2.3	Territorial effects of structural funds in urban areas	STRUCTURAL FUNDS URBAN IMPACT	2nd	ECOTEC Research and Consulting Ltd.
2.3.1	The application and effects of the ESDP in Member States	ESDP IMPACTS	---------	----------
2.3.2	The governance of the territorial and urban oriented policies from the EU to the local level.	GOVERNANCE	---------	----------
3.1	Integrated tools for European spatial development territorial	SPATIAL TOOLS	3rd	BBR, Federal Office for Building and Regional Planning
3.2	Spatial scenarios and orientations toward the ESDP and the Cohesion Policy.	SCENARIOS	---------	----------

Since the delivery of the 1st Interim Report of the TPG 3.1 various meetings of the TPGs, the first and 2nd TPG lead partner meeting as well as the first and second ESPON Contact Point meeting took place.
Ideas, suggestions, and proposals were discussed and further developed. The results will be echoed in this report.

In the following an overview about the seven chapters of this report is given. Special emphasis is placed in this report on the chapter “From territorial objectives and analyses to policy recommendations”. First tentative policy recommendations are requested for this reporting time from all TPGs. The focus is on three key terms, accessibility, polycentrism and territorial cohesion. This has not only the reason in the ESDP. At this stage first outcomes of the ESPON should find encroach upon / find its way into the 3rd Cohesion Report.

2.1 The 1st chapter – Progress by the TPGs

This chapter gives a short overview on the progress the 15 ongoing ESPON projects made, how they are implemented the given guidance, what is the overall impression about their work, first outcomes and partly improvements.

2.2 The 2nd chapter - Executive summary

This first chapter is an abstract and gives a guidance as well as a comprehensive glance for the reader who wants to have a fast and compact overview of the content of the different chapters.

2.3 The 3rd chapter - The role of the ESPON 3.1 Project – Integrated Tools for European Spatial development

The third chapter “The role of the ESPON Project 3.1 – Integrated Tools for European Spatial Development” informs about the achievement of the ESPON and gives an overview about the ESPON project 3.1. In this chapter the relation between ESPON, the ESDP including its spatial goals and EU sectoral policies is described. The overview about the project 3.1 introduces briefly into the specific objective of the transnational project group (TPG).
The progress of the project is explained by reporting on the creation of a common platform for ESPON projects, including networking, exchanges, etc. with other TPGs as well as the integration of accession and neighbouring countries,

meetings and seminars. Also the way in which the project 3.1 gives guidance to the other TPGs, e.g. through the ESPON data base or discussions on different concepts is presented. Main aspects are the technical and analytical support undertaken since the 1st IR and 2nd IR. Progress was made towards common concepts, typologies, indicators, data sets and cartography. The last subchapter gives a tabularly overview of the activity plan 2003/2004, its outcome and expected results.

2.4 The 4th chapter – From territorial objectives and analysis to policy recommendations

This chapter is the main chapter of the present interim report. EU Enlargement and socio-economic, technological macro trends, such as globalisation, increasing competition, ageing population, shifting labour force participation, migration bring about an EU with extremely wide disparities both between and within countries. The challenge is thus to identify in which areas what kind of measure can strengthen territorial cohesion throughout Europe.

Preliminary results presented in the various ESPON interim reports underline the importance of a policy framework which is needed for a coherent policy addressing the spatial challenges. Solutions for horizontal and vertical policy co-ordination are sought after. Furthermore, the need for a more place based policy is underlined, as not at least expressed in the concept of polycentrism trying to strengthen specific development potentials.

Tentative policy recommendations address issues relating to the need of a more integrated approach to policy making involving mechanisms for horizontal and vertical integration of policies, e.g. through co-operation and governance. As regard European structural policies, the main emphasis is on the question of area delimitation, the need for tailor made policies for territorial entities and support of border regions. Regarding EU sector policies such as transportation, information and communication, rural development and nature protection are addressed regarding their potential contributions to territorial cohesion. Furthermore, tentative policy recommendations address the question how in particular structural policies influence polycentric development, especially at European level.

The forth chapter is divided into three parts. The first sub-chapter on “Territorial objectives into EU policies” the in the title mentioned objectives. Central role plays the ESDP and the effort of the EU to reach the targets. The sub-chapter can be seen as an introduction into the subject matter. The approach towards tentative policy recommendations by the project 3.1 is also presented.

The following sub-chapter “Tentative recommendations for an integrated policy framework’ presents policy recommendations which are based on the work of various ESPON projects. The aim of the section is to identify preliminary overall ESPON policy recommendations in the light of territorial cohesion and polycentric development and to present a first approach to an integrated policy framework.[7]
The third and last sub-chapter “Instruments and tools for identifying territorial trends and impacts of EU policies” presents the approach of a SWOT-based Regional Classification (RCE) of Europe and the Territorial Impact Assessment (TIA). In the ideal case the SWOT/RCE carries out an analysis which will provide a picture of multidimensional spatial trends and impacts which can be compared with the EU-territorially relevant policies. The last part describes the application of the TIA.

2.5 The 5th chapter – ESPON data base and GIS

According to the 3.1 task of establishing an ESPON data base, tools for spatial analysis and harmonised cartographic presentation and for the dissemination of ESPON results via web, fundamental progress has been made since the Second Interim Report from end of April.

During this period, especially the data base turned out to be a continuous undertaking related to updating and quality control, but even more related to the data and indicators included. The integration of ESPON exclusive regional indicators resulting from special processing of Labour Force data from Eurostat was one of the milestones for the ESPON data base in this period.

[7] The recommendations presented are of tentative character because there are no final ESPON findings and recommendations as all projects have at least one more year of work before presenting their final report. The work is based on the tentative policy recommendations presented in the Interim Reports of the single ESPON projects.

All TPG data, as far as they were made available, have been included as elements resp. data files in the ESPON data base founding the information system.

The ESPON mapping kit provided by 3.1 has been revised according to the TPG's suggestions related to corrections and improvement. In the actual use of the ESPON map standards considerable progress has been achieved, visible in the SIR and TIR end of August 2003, whereby results of the several TPG's necessarily might serve as examples for other TPG's.

In the course of the TPG Lead Partner Meeting in Brussels on 18th June 2003 the first results of the ESPON Web-GIS and the Hyper-Atlas have been introduced to the ESPON public showing the future possibilities of web-based map data selection and making and analytical representations. Since then the tools have been improved considering the interesting points of discussion at that meeting.

2.6 The 6th chapter – Outlook

This chapter consists of four sub-chapters which deal with:

- policy scenarios
- Europe in the world
- Interreg
- policy support system

The first section "Recommendation on political scenarios towards ESPON 3.2" summarises some ideas by the ESPON Project 3.1 which were part of the discussion about the terms of reference for the ESPON project 3.2 on the elaboration of political scenarios. The approach of the 3.1 project was to organise the elaboration of policy scenarios along four strands, trend analysis, analysis of forces shaping the European territory, elaboration of scenarios and validation of policy scenarios.

Another task of the project 3.1 is to suggest first ideas on a future research report about "Europe in the World". As requested the focus is on the clarification of concepts and methods, which should be introduced for the evaluation of the European position in the world. First examples of applications of those concepts and methods are presented in Sub-chapter 6.2, a more detailed paper on this

topic, presenting some first examples, is documented as Annex 2 to this report. Approaches for empirical studies on selected political questions with related cartographic illustrations are included in this section. The section concentrates on the elaboration of an efficient statistical and cartographic framework for future ESPON research on Europe in the world and the delimitation of the European influence area according to various matrixes of flows, which is seen as very important for the elaboration of long term strategies in this field.

Approaching “Interreg and its contribution to territorial cohesion and polycentric development” forms the third sub-chapter. Since the second 3.1 interim report two fields of activities have been identified. One is the networking and integration of Interreg activities and results. The other one is the assessment of Interreg co-operation regarding their contribution to implement the ESDP, in particular the creation of new transnational regions.

First steps have been undertaken to develop an approach for assessing the contribution of Interreg co-operation to the creation of transnational European regions. However, in cooperation with the ESPON Co-ordination Unit, it has been decided to wait for the clarification of the role Interact can take regarding the networking and integration of the ESPON, Interreg IIIB and IIIC projects. Currently there are three options to deal with Interreg, either as part of Interact or as work package in 3.2 or in 3.1.

The last sub-chapter works on the idea of the integration of ESPON Information and knowledge tools into a an ESPON Policy Support System (EPSS). The need for such a system is very obvious. ESPON is a highly decentralised process, with many different networks of universities, research institutions, consultancies and independent experts working to provide sound scientific support to European policy makers for the construction of the European Union. The initial goal of ESPON 3.1 was to deliver harmonised material, maps and indicators to the Commission for consideration in the Third Cohesion Report. The consolidation of information and knowledge generated by ESPON in such a service-oriented approach is what is known as a Policy Support System.

Technically the EPSS may consist of four modules, a user interface, an information base, a forecast base and an evaluation base. As a medium an internet web page is envisaged. The need and feasibility of a number of initiatives are worth considering:

- A portal website with links to other TPG webs with their own project material.
- In addition to policy indicators, TPG raw databases to be integrated into the system or become somehow available.
- Data storage and retrieval through the Internet and Internet mapping services.
- Availability after ESPON of computer models used by TPGs, and if so, for what type of analysis, and under what commercial conditions. Creation of a directory of models and modellers with the specific services they can provide.
- Interactive simulators available on the Internet focusing on key policy questions and scenarios, using the knowledge gathered.

2.7 The 7th chapter – Further activities

The chapter gives an outlook to the further activities of the TPG 3.1 in general and specifically with regard to the different topics. In twelve months, October 2004, the TPG 3.1 has to submit its final report. Until that time the TPG has to fulfil different tasks and to make progress in its work.

It could be the case that the impression comes up that the transnational project groups have now the time to twiddle the thumbs. That is not the case. The below presented table shows the work which has to be done until the end of the 3.1 project time in October 2004. A new task will be the co-operation with the 3.2 project. As known the 3.2 project will continue part of the work of the 3.1 project. Therefore interchange, support and assistance is of high importance.

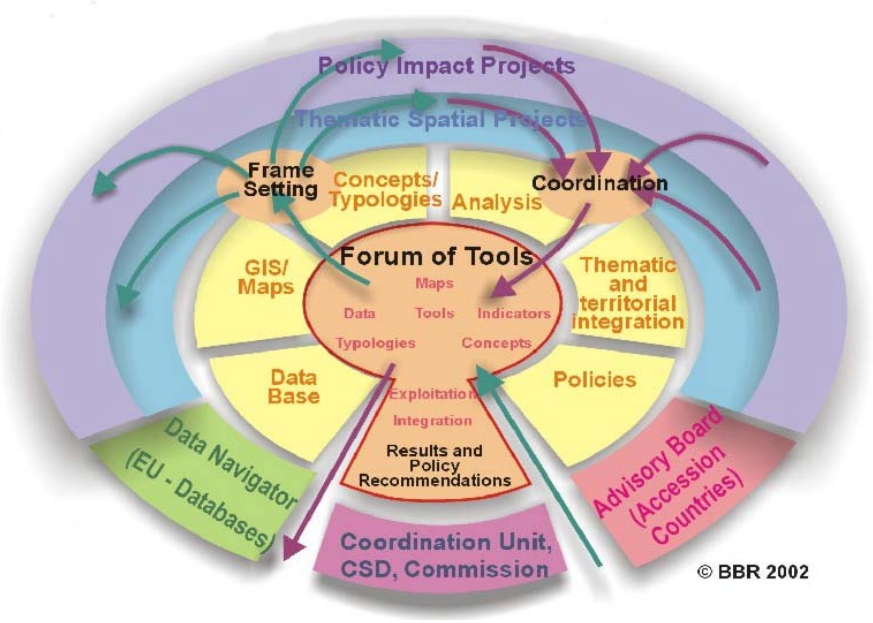
Field of work	*Title/ Content*	*Period of time*
General	Preparation/support and assistance ESPON Seminar 4 and 5	May 2004 and October 2004
General	Preparation/support and assistance TPG Lead Partner Meeting	February 2004 (estimated)
General	Supporting the co-ordination activities of the ESPON CU	Continuous process
General	Co-ordination Meetings with the ESPON CU and the DG Regio	Regularly
General	Analysis of the different Interim Reports	March / April 2004
General	Analysis of the final reports of the ‚1st round TPGs'	August/ September 2004
General	Analysis of the different Interim Reports of the TPGs from the 2nd, 3rd ... rounds	August/ September 2004
General	Delivery of the own final 3.1 report	October 2004
Policy Recommendations	- analysis of reports of further reports - different workshops towards sound bases policy recommendations (incl. TPG Leadpartner, MC-Members...)	1st and 2nd half of 2004 August 2004 2004
Policy Recommendations	SWOT/RCE - further development - final results	
Policy Recommendations	TIA - description of methodological approach - instruction manual - final results	October 2004
Database/ GIS	Completition of the ESPON GIS ready for operation and handover	September 2004
Database/ GIS	Completition of the Hyperatlas ready for operation and handover	September 2004
Database / GIS	Completition of the ESPON Database	July 2004
Design and development	Policy Support System - first light dummy version up-gradeable light final version	 1st half of 2004 October 2004
Design and development	"Europe in the world"	October 2004
Design and development	Specific outlook on "Approaching Interreg and its contribution to territorial cohesion and polycentric development"	October 2004
Preparation of special meeting	Meeting with east European experts (Seminar, work shop...)	mid 2004
Preparation of special meeting	Work shop on ESPON results with political, scientific and practice experts	End of August 2004 or October 2004
ESPON 3.2	Co-ordination meetings - support (with regard to administrative tasks) - assistance (with regard to administrative tasks) - interchange	Various / until October 2004

3 The role of the ESPON 3.1 Project – Integrated Tools for European Spatial Development

3.1 Philosophy and approach of the project

The ESPON Project 3.1 is the co-ordinating cross thematic project of the ESPON Programme 2006. In the graphic below, one important task of project 3.1 is formalised as transforming the interaction between project 3.1 and the project environment (other TPGs, European Agencies, Experts from Accession Countries, etc.) into outputs and deliverables. This task is described by the set of rings around the core of the output.

Figure no 1: Project scheme – integrated tools for the spatial dimension



The figure above indicates the input by the outer ring, namely:

- policy impact projects
- thematic spatial projects
- data navigator and data bases
- accession countries and neighbouring countries advisory

The output is indicated by the “Forum of Tools” in the centre of the figure:

- spatial tools
- integrated data bases
- indicators

- typologies
- territorial concepts
- maps

These core outputs are complemented by the deduction of policy recommendations, indicated by the flow from the core towards the users and applicants. These flows are representing the main outputs and deliverables for external use which will be provided by the project.

Between these input and output layers the reference points of the tasks of the project are listed by different partitions:

- thematic structures and reference points deriving from the input provided by other projects and by own additional efforts
- territorial structure reference points such as countries, spatial integration zones, etc.
- data base development and cartography
- policy impact methodologies
- policy development

Project 3.1 will gain added values for the ESPON programme by deliver products which support the programme on different levels, like the 'Crete Guidance Paper'. By working in a cross-project manner a significant surplus value will arise.

- Added values (1): final products for the European Policy Makers

The main products will be delivered for the use by the Co-ordination Unit (and via the Co-ordination Unit by the European Commission, the Monitoring Committee and Sub-Committee an Spatial and Urban Development (SUD)). These are, e.g.: common database and indicator system, papers on concepts and policy recommendations, contributions for European documents (3rd Cohesion Report etc.).

- Added values (2): frame-setting for other ESPON projects

Another type of product will be used internally, i.e. within the ESPON programme. These internal products will be addressed to other TPGs and include, for instance, the setting up and delivery of standards and guidelines (referring to data collection, cartography, concepts etc.) which can be used by other TPGs for their work and help the Co-ordination Unit in its co-ordination task.

- Added values (3): exploiting results gained by other ESPON projects

In the other direction, TPG 3.1 makes use of results and recommendations of the other TPGs, e.g. by creating links between the different TPGs, synergetic effects could fructify the work in a reciprocative way. For the purpose of integration, results will be cross-checked and evaluated for contributions to synthetic reports.

- Added values (4): genuine contributions by project 3.1

Besides the networking aspect, an important part of added value of project 3.1 is based on genuine contributions that are not covered by the single projects of the themes 1 and 2, i.e. building a common data set and a joint system of indicators and tools, and defining and operationalizing concepts and tools. The activities and outcomes of the project 3.1 should be balanced with respect to giving room for “innovative” methods and thinking without loosing sight of meeting the demand of policy decisions based on EU-wide data and analysis that is currently available.

- Added values (5): promotion strategy / publications / networking

Finally, TPG 3.1 will support the CU in its task for internal and external networking and co-operation and it will contribute to the promotion and publication of ESPON results.

The outcome of ESPON can be seen as a Policy Support System. The need for a Policy Support System comes from two contradictory demands by policy makers: more advanced and yet more user-friendly and just-in-time decision-making support from experts and scientists. One possible strategy for resolving the conflict

between more advanced and more friendly and just-in-time support is developing corporate intelligence inside governmental institutions by introducing efficient management of information and knowledge. The first strategy to move in this direction is to continuously consolidate and formalise disperse information and knowledge generated in the institution. This can be done by simply creating virtual libraries with synthesis of studies, storing databases in compatible formats, creating intelligent search-engines, etc., and linking it all together into open systems, driven by user-friendly and customised interfaces and accessible to any interested policy-advisor or policy-maker from his/her computer desk. The open system should integrate interactive explanatory tools of use for communication and educational purposes, but should also provide access to multiple remote advanced information and knowledge systems developed and maintained by universities, research institutions and consulting firms that can answer a number of legitimate policy-questions.

However, clever computer systems that interface end-users and improving computer tools may not be the complete answer to the problem. The key to close the gap between policy makers and state-of-the-art scientific models is establishing an encouraging and co-operative environment where scientists, experts and policy makers interact personally and can understand each other.

The SPESP experience is an example of a successful experience since most of the information and knowledge generated along the process was actually gathered, harmonised and distributed afterwards by BBR, Nordregio and Mcrit. Today, the virtual library including databases of policy-indicators, reports, interactive mapping facilities etc. is still publicly available through the web.

At this point, it is necessary to develop a clear vision of the future integration of all ESPON information and knowledge in order to guarantee that it becomes operational as a whole once the work programme has been concluded.

A step forward in this direction is the idea of a European policy support system (see Chapter 6.4).

3.2 Progress of the project

Since the 2nd Interim Report of the TPG 3.1 various action and progress has taken place. This progress is based on different activities and expressed in various fields of work covered by the ESPON Programme and therewith by the co-ordination activities of the TPG 3.1.

3.2.1 Networking undertaken

The central aim of the project 3.1 is to strengthen the ESPON programme level and by supporting the ESPON Co-ordination Unit in its task to secure integrated approaches and results of the whole ESPON programme.

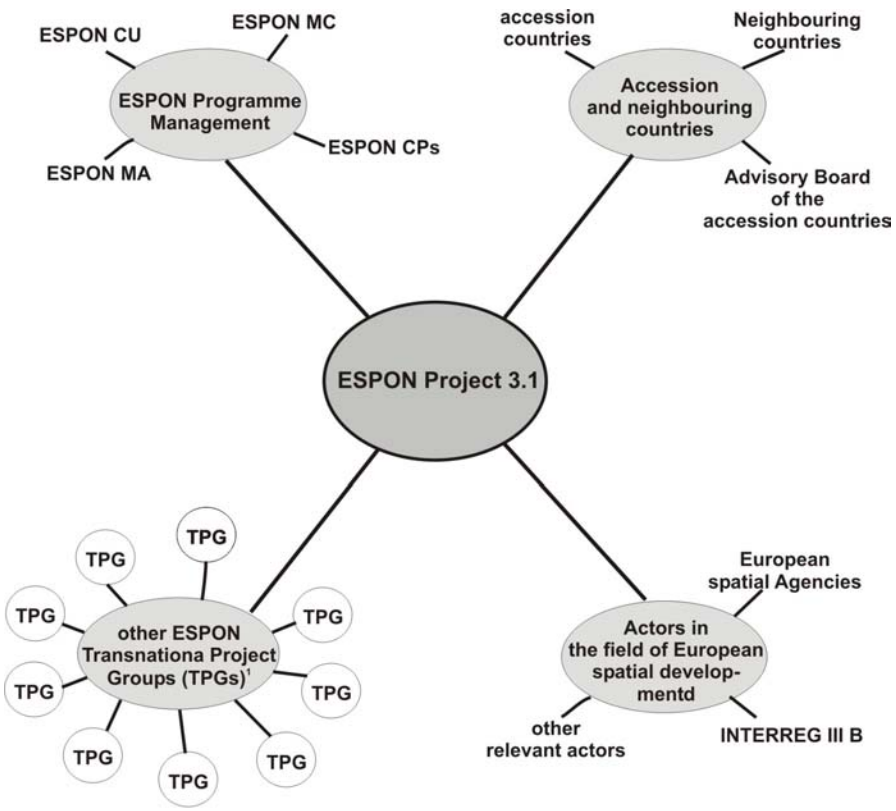
The first step to get good results is to create a fundamental common ground. For the ESPON Programme 2006 this means to get a common understanding about ESPON and a common "ESPON thinking". In this regard it was necessary to establish a good networking using effective tools.

Meetings with different actors were organised and realised by the ESPON CU and the project 3.1 to get, beside of the contact mostly realised by modern telecommunication facilities, real face to face contacts and to bring all key persons together. The TPG 3.1 gave guidance to the other TPGs in various ways, e.g. through technical and analytical support or indirectly through the ESPON META SWOT, TIA or the before mentioned 'Crete Guidance Paper' (see Chapter 4.3).

The philosophy or model of networking of the 3.1 project was explained already in the 1st IR. The networking activities of the project 3.1 can be subdivided in four groups. Networking with:

- the other ESPON Transnational Project Groups (TPGs)
- ESPON Programme management, i.e. ESPON Co-ordination Unit, ESPON Managing Authority, ESPON Monitoring Committee, ESPON Contact Points etc.
- INTERREG III B co-operation areas, European agencies and other actors in the field of European spatial development
- accession countries and neighbouring countries

Figure no 2: Networking activities of ESPON 3.1

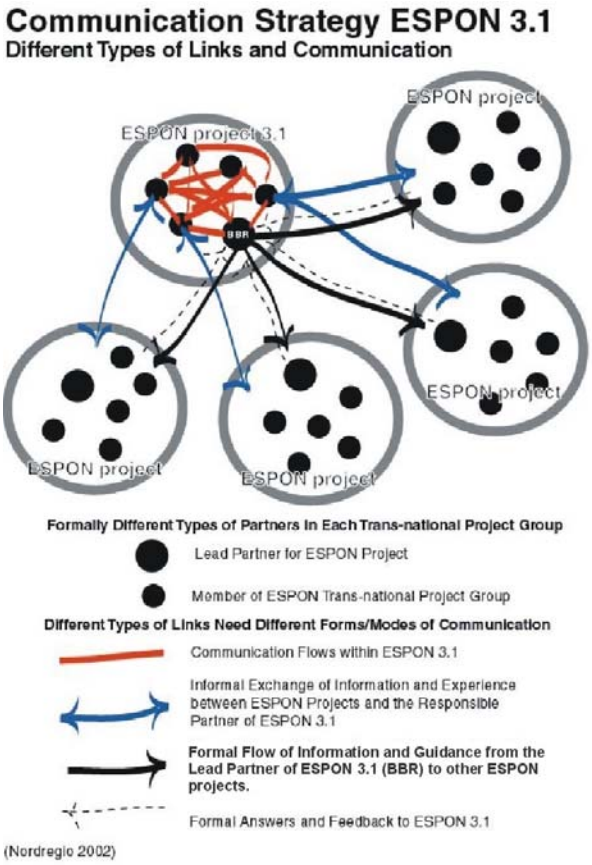


[1]total: 19 other TPGs

In the project 3.1 the team reflects the European range of different perspectives. The main goal is to come to joint results and conclusions and policy recommendations that are consensual in the working team wherever possible. In this sense, the working method is based on good internal communication and networking and the search for common results rather than a strict division of labour. Therefore the project is in close contact with the ESPON Programme management, other actors in the field of European spatial development (i.e. European Spatial Agencies), the accession countries as well as some neighbouring countries of the EU.

Beside of the important external work of the project, the internal co-operation and collaboration plays an important role. The internal project networking consists of an internal network between the members of the 3.1 project.

Figure no 3: Communication Strategy ESPON 3.1



The graphic shows that the partners inside of the 3.1 project are responsible for the informal exchange and information flows between 3.1 and the other TPGs.

Networking of the TPGs

The biggest success is that a lot of TPGs started the networking between themselves, especially since first useful outcomes brought to light. Beside of the success made, it seems that some TPGs still need the advice and guidance of the TPG 3.1 and the ESPON CU to get in touch with content related TPGs.
At this stage it can be said that the TPGs have to make more use of the TPG network by their own effort, for example, if data gaps are obvious they have also to contact related TPGs. A good result is that TPGs of the first round of ESPON projects are not only seen as providers or distributors. The projects of the further rounds do fundamental research and scientific work to support the programme. All participants make use of the common data base and first tentative results.

An important aspect is also to call on the ECPs, if data or documents are needed. It is one of the ECP roles to help the TPGs.

Networking between the project 3.1 and the TPGs

A lot of progress has been made in the field of networking in different ways since the first two ESPON seminars in Mondorf-les-Bains and in Panormo as well as the corresponding 3.1 interim reports.

The networking between the TPGs and the project 3.1 extended. Since the beginning of the year 2003 all TPGs are in contact with the co-ordinating, cross thematic project. Especially the work on the ESPON META SWOT, the TIA, and the 'Crete Guidance Paper' supported the networking and communication.

Former existing prejudices and doubts of the TPGs disappeared through good practise. More and more also informal ways of communication are being used, which shows good relationship between the different actors. Most of the networking activities currently is related to the data and GIS. This was the case until the end of the most projects in October 2003. One important new element for the networking is starting now, i.e. the exchange and improvement of policy recommendations. At this stage recommendations are provisional and tentative. During the process until October next year this will change to precise conclusions.

Beside of this the networking covers the full range of inquiries concerning practical aspects as well as theoretical aspects of the work. The participation of most of the 3.1 project partners in other TPGs helps networking.
Nevertheless, networking has to be further improved and some TPGs should be more active in the future. Networking is a mutual activity! The TPG 3.1 needs the input to do its work and to provide a useful and sound base.

Networking between the project 3.1, the ESPON CU and the DG Regio

The networking in particular with the ESPON CU and also with the DG Regio was implemented in different co-ordinating meetings as well as in an intensive and stable contact via modern telecommunication media. The ex-change is of utmost importance for the success of ESPON. It generated until now fruitful outcomes and facilitated the work of the parties.

Networking with the accession and neighbouring countries

ESPON project 3.1 tries to integrate the Accession Countries (ACs) as well as Neighbouring Countries (NCs) to facilitate common views on the spatial development trends and policy issues in an enlarging European Union. It should help to bring in the knowledge and specific views of ACs into the ESPON results and allow exchange of experience between the 3.1 TPG and experts of the ACs and NCs.

At this stage the networking of the 3.1 project with the ACs and NCs focus on the field of database and GIS. Especially inquiries towards the accession and neighbouring countries have been realised and will be continued during the next time. The data of mentioned countries are very important for the creation of a well founded and comprehensive data base.

Some ACs and NCs acceded the ESPON Programme formally and participate in an active way. At present, these countries are Hungary, Slovenia, Norway, Switzerland. Other countries still are observer countries. The acceded countries join different TPGs.

As mentioned in the former interim reports the TPG 3.1 will start deepening its networking with the ACs and NCs at a later stage. It should deal with specific thematic, political and methodological issues concerning the enlargement and neighbouring areas in the context of the ESPON 2006 Priorities and Measures.

Networking with other actors in the field of European Spatial Development

At the present time the networking with other related actors is not very developed in a formal way. A lot of ESPON TPG participants are working also for other European programmes or initiatives. In this way an 'informal' and limited exchange takes place. But the foreseen intensive networking with the different Interreg offices has not yet been started. (please see Chapter 6.3) The future role of the INTERACT Points, which are currently being implemented, with reference to ESPON 3.1 and the ESPON CU will have to be explored.

3.2.2 Guidance undertaken

As mentioned above a main task of the TPG 3.1 is to give guidance to the other TPGs.

Technical and analytical support

Since the first two ESPON Seminars and the first interim reports of the TPG 3.1 great efforts and good progress were made in the field of the ESPON data base, which is one of the headstones of the further work.

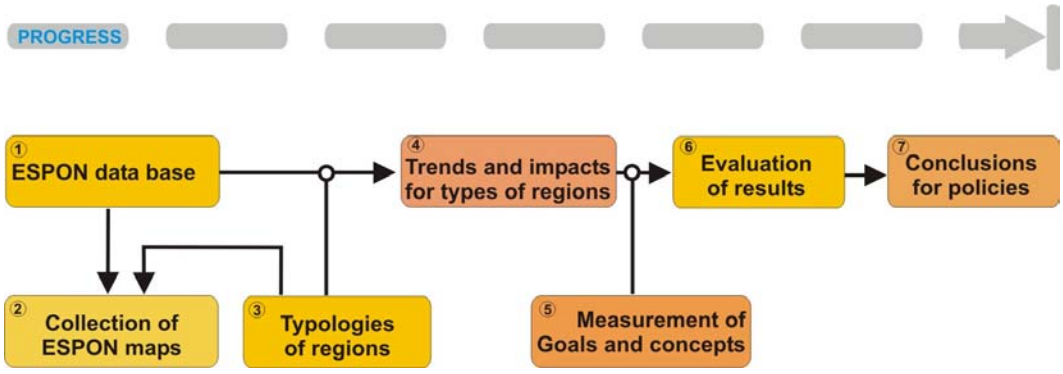
After the 2nd ESPON Seminar in Panormo, Crete, Greece, the so called 'Crete guidance paper'[8] was developed and sent to the TPGs. The guidance paper together with the standard layout for ESPON maps laid down a concerted action or common platform of all TPGs.

The Crete Guidance Paper

In Crete all TPGs agreed that common elements are needed that can be used by different TPGs. These common elements are necessary
(1) to make things simple and efficient by using results from other TPGs and
(2) to achieve coherent ESPON results.

The most important elements of the common platform are:

1. the ESPON data base (core indicators) including
2. a collection of ESPON maps (visualising the ESPON data base)
3. typologies of regions;
4. the analysis of trends and policy impacts related to different types of regions;
5. the operational definition and measurement of policy goals and concepts as a base for
6. the assessment and evaluation of results (trends and policy impacts) with reference to these policy goals and concepts;
7. conclusions for policies.



The structure of the Crete Guidance Paper follows these main topics

The latest version of the list of core indicators as well as typologies, extracted from the different inputs of the TPGs, has been further developed and is part of this report. See table Chapter 3.3 Activity Plan and Chapter 7.

Again it has to be stressed that the TPG 3.1 needs the queries of the other TPGs to EUROSTAT and the EU institutions to perform its work and contribute to the TPGs.

[8] Send out on 02.06.2003 by the 3.1 Project

Operational and methodological support undertaken since the last IR

Depending on the start of the projects, most of them started trying to define or have defined the concepts as well as typologies they are using. The project 3.1 noted that especially in this field the given guidance was needed to come to a common ESPON understanding. Here 3.1 as well as the ESPON Programme has to continue its way to come to excellent results.

Mayor effort is made since the last report on central issues: polycentrism and accessibility. The central role of this report play obviously the tentative policy recommendations

Undertaken activities, namely the SWOT analysis and the territorial impact analysis, show that for a lot of the corresponding TPGs the work on these types of analysis gave a good and productive impulse.

Beside of this, 'Guidance undertaken' of the TPG 3.1 goes also a little bit beyond the TPG frontier. Enquiries of different ESPONians[9] were managed and fulfilled in an informal way.

3.3 The activity plan second half 2003

Time	Activity
May	
04.05.2003	Informal 3.1 meeting
05. / 06 05.2003	2nd ESPON Seminar
07.05.2003	3rd Meeting of the TPG 3.1
20.05.03	Meeting with the ESPON CU and DG Regio
30.05.03	Delivery of the 'Crete Guidance Paper'
June	
16 / 17.06.2003	Meeting of the TPG Lead Partners
18.06.2003	4th Meeting of the TPG 3.1
24.06.2003	Participation of the 3.1 Lead Partner in the SUD-Meeting
August	
07.08.03	Meeting with the ESPON CU and DG Regio
15.08.2003	Standard Layout for the ESPON Map Collection
31.08.2003	Delivery of interim reports by the other TPGs

[9] ESPONians = people participating in the projects of the ESPON Programme 2006

September	
23.09.2003	Participation of the 3.1 Lead Partner in the SUD-Meeting
30.09.2003	Delivery of the 3rd IR of the TPG 3.1
October	
05.10.2003	Informal 3.1 meeting
06./ 07.10.2003	3rd ESPON Seminar
08.10.2003	5th Meeting of the TPG 3.1
xx.10.03	Meeting with the ESPON CU and DG Regio
End of November	Meeting with the ESPON CU and DG Regio

Part B

Main intermediate results in October 2003

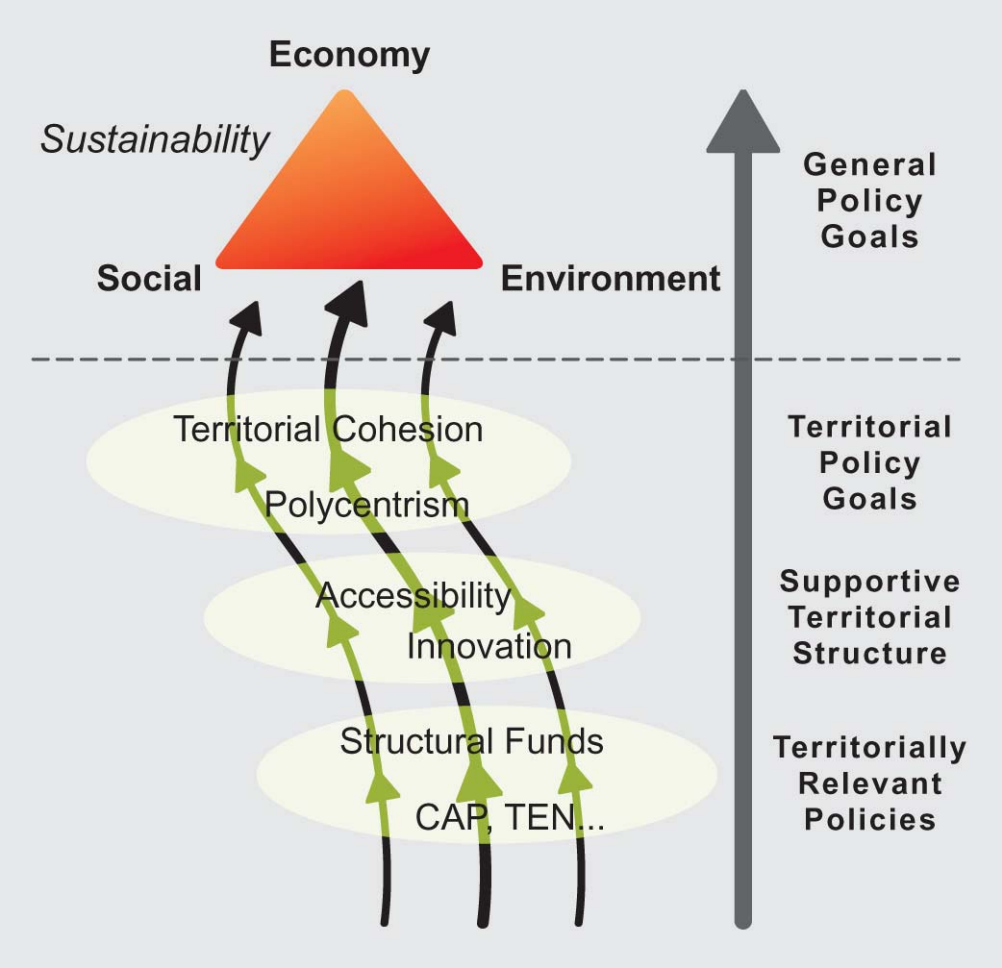
4 From territorial objectives and analyses to policy recommendations[10]

4.1 Territorial objectives into EU policies

4.1.1 From EU goals to territorial objectives

The ESDP is built on the acknowledgment that achievement of the fundamental goals of the EU requires to take the territorial dimension into account. Provided by the spatial planning sphere, this first major contribution to that (new) way of thinking starts from an integrated view of EU fundamental goals, illustrated by the "triangle of sustainability" (red triangle in Figure 4), with as summits its three dimensions: economy, society, environment.

Figure no 4: Sectoral policies/instruments for a sustainable development



Source: ESPON Project 3.1

The triangle suggests the balance and complementariness between the goals, among which the ESDP emphasises three that encompass a clear territorial dimension:

[10] This revised draft dated 27/09/2003 replaces previous draft dated 25/09/2003.

- economic and social cohesion;
- conservation and management of natural resources and the cultural heritage;
- more balanced competitiveness of the European territory.

The ESDP insists that these three fundamental goals must be considered together, pursued simultaneously in all regions, and their interactions taken into account. Such a vision is closely linked with the concept of territorial cohesion.
Setting a focus on territorial cohesion, the 2nd Cohesion Report extends the appraisal of the territorial dimension beyond the spatial planning sphere, bringing it a step closer to the fundamental goals. The draft EU Constitution confirms this process, introducing the territory and its cohesion in an more explicit and generalised way than it presently is in the EC Treaties. Emphasizing sustainability and innovation, declarations of Lisbon (2000) and Gothenburg (2001) confirm the relevance of a territorial, multi-sectoral approach.
The three fundamental goals of the ESDP are translated into three territorial guiding principles, or territorial objectives:

- development of a balanced and polycentric urban system and a new urban-rural relationship;
- securing parity of access to infrastructure and knowledge; and
- sustainable development, prudent management and protection of nature

Although the relevance of the ESDP territorial objectives to achieve the fundamental objectives is sometimes questioned, they have been officially adopted (Potsdam 1999) and hence are taken as a starting point for the ESPON approach (ESPON CIP, Terms of Reference of the projects).This is illustrated in Figure 4 by the dotted line which separates the red triangle from the upper ellipse. However, in their report some TPGs raise questions – especially concerning polycentrism – (notably 3rd IR 1.1.1, pages 3 and 71; 2nd IR 1.3.2, page 68) or highlight apparent contradictions(for example 3rd IR 2.1.1, pages 17 and 146). that could be worth taking into consideration in further works.
The ESPON programme is expected to help complement and implement the ESDP: complement it by studying more in depth trends and impacts of policies, implement it by showing efficient ways to achieve its aims and options. Linked with a broader agenda, ESPON is focused on aspects more relevant for the actual

issues at stake, such as enlargement and its implications for EU policies, coming in a context of growing globalisation and of threats for sustainable development.

The ESPON CIP insists thus on two key concepts, which appear as guidelines for the work: territorial cohesion and polycentrism. These supporters of sustainability indeed appear as conditions for making the enlargement process benefit all parts of the enlarged EU and strengthen its position in the global context. Actually territorial cohesion is a more general and "abstract" objective – an "umbrella" concept - than polycentrism, which has an intrinsically territorial dimension (2nd IR 3.1). However, both are linked and complementary when reflecting on a concrete territorial approach, aiming at recommendations.

Focusing implies prioritising the approach, not limiting it. The two key territorial objectives may play their role only if they are considered from a sufficiently broad standpoint as to take into account links with other aspects / objectives such as fostering competitiveness, caring for social issues, managing natural and cultural resources, etc. This links with the idea expressed in the ESDP about taking into account simultaneously all three guiding principles and their interactions. In short, both territorial objectives should consider the three sustainability dimensions (economy, society and environment), but with a specifically territorial point of view, paying particular attention to parameters such as territorial potential, situation and integration.

The EU has presently no specific means in the domain of spatial planning. As exposed in the ESDP, actions in order to achieve territorial objectives must go either through EU own sectoral policies (including Structural Funds) either through national / regional policies (on a voluntary basis, according to the subsidiarity principle). The lower ellipse in Figure 4 suggests the set of instruments that could be used for this purpose (contents of the ellipse are more detailed in Figure 5).

4.1.2 From territorial objectives towards integrated policy recommendations

Whereas Figure 4 shows the philosophy of the approach, Figure 5 illustrates the structure underlying this chapter, which is conceived in function of the aim of producing first policy recommendations (in particular in view of the Third Cohesion Report).

Recommendations at short or middle term must fit in the framework of actual Community policies, which is notably expressed in article 3 of the EC Treaty.

Article 3

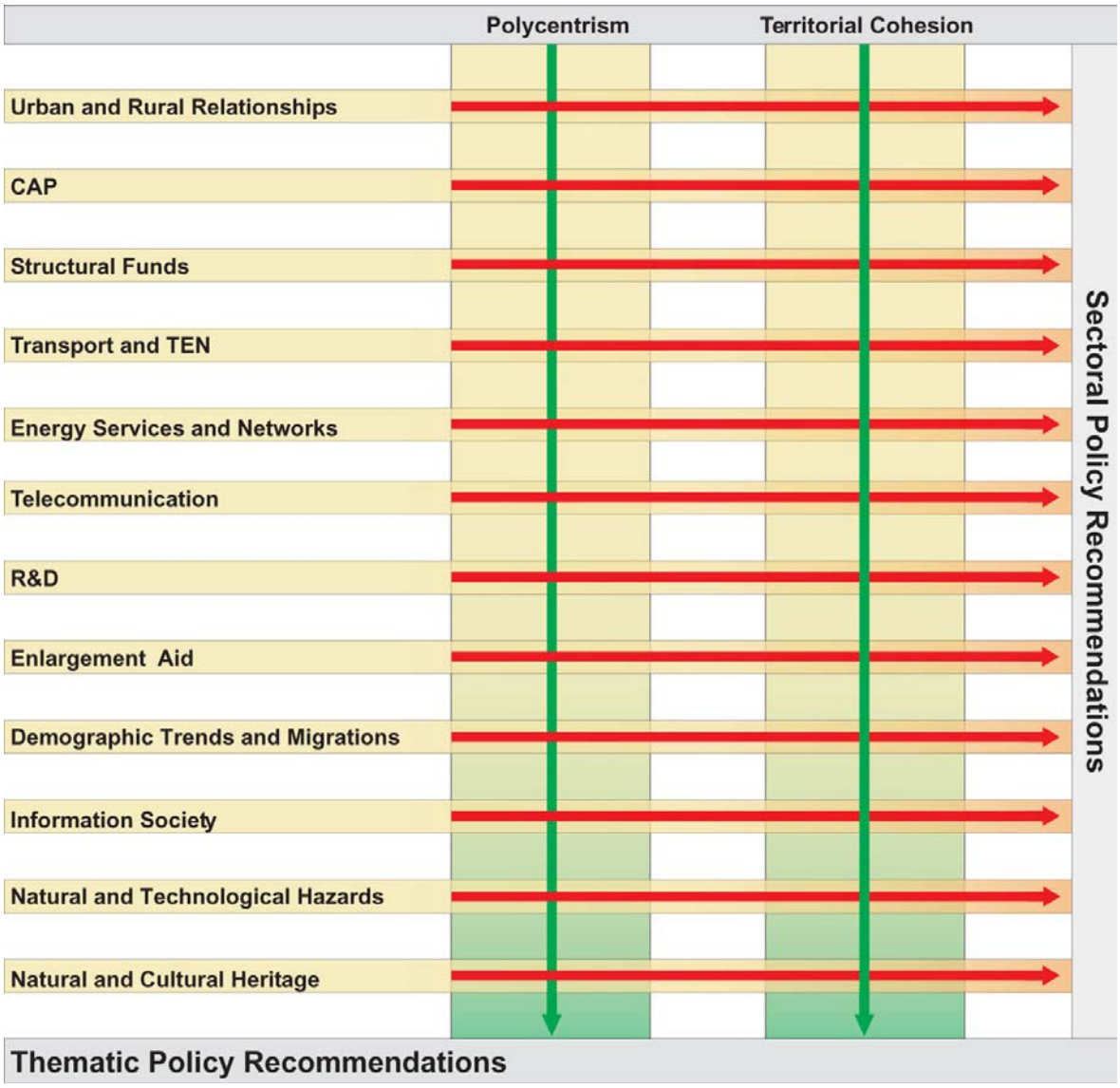
1. For the purposes set out in Article 2, the activities of the Community shall include, as provided in this Treaty and in accordance with the timetable set out therein:
(a) the prohibition, as between Member States, of customs duties and quantitative restrictions on the import and export of goods, and of all other measures having equivalent effect;
(b) a common commercial policy;
(c) an internal market characterised by the abolition, as between Member States, of obstacles to the free movement of goods, persons, services and capital;
(d) measures concerning the entry and movement of persons as provided for in Title IV;
(e) a common policy in the sphere of agriculture and fisheries;
(f) a common policy in the sphere of transport;
(g) a system ensuring that competition in the internal market is not distorted;
(h) the approximation of the laws of Member States to the extent required for the functioning of the common market;
(i) the promotion of coordination between employment policies of the Member States with a view to enhancing their effectiveness by developing a coordinated strategy for employment;
(j) a policy in the social sphere comprising a European Social Fund;
(k) the strengthening of economic and social cohesion;
(l) a policy in the sphere of the environment;
(m) the strengthening of the competitiveness of Community industry;
(n) the promotion of research and technological development;
(o) encouragement for the establishment and development of trans-European networks;
(p) a contribution to the attainment of a high level of health protection;
(q) a contribution to education and training of quality and to the flowering of the cultures of the Member States;
(r) a policy in the sphere of development cooperation;
(s) the association of the overseas countries and territories in order to increase trade and promote jointly economic and social development;
(t) a contribution to the strengthening of consumer protection;
(u) measures in the spheres of energy, civil protection and tourism.
2. In all the activities referred to in this Article, the Community shall aim to eliminate inequalities, and to promote equality, between men and women.

Not all Community policies with possible territorial implications are considered by the ESPON. Social policies are not covered as such, although most of social issues present a territorial dimension. Competition policy is considered in the ESDP but no ESPON project is centred on it. Two ESPON projects are devoted to aspects of environmental policy but it is not wholly covered. On the other hand, some project topics do not correspond to a single Community policy but rather to a domain where important issues are identified. The selection of instruments and structure of their approach by TPGs reflect concern for efficiency with regard to prospects for implementation. Priorities are reflected in the time schedule of projects as well. ESPON work is not a one-pass work. It implies iteration and refinement of the approach in the course of time.

The sectoral policies / fields where action could be taken and which are considered in the ESPON (represented by the horizontal lines in Figure 5) are browsed from the points of view of polycentrism on the one hand, territorial cohesion on the other hand (vertical axis). This approach allows focusing on the

essential issues, but also fosters an integrated approach. Horizontally integrated, because it considers all inputs from the different domains and the potential relationships between them, vertically integrated because it also allows considering together the instruments available at different scales and their possible links with actions at other levels.

Figure no 5: From territorial objectives towards integrated policy recommendations



Source: ESPON Project 3.1

Inside each thematic domain, actual tools may belong to several categories, from directives and regulations to orientations, definition of eligibility areas, devotion of financial means to particular fields or specific criteria to make funds available. Actions may also be taken to promote awareness of lower level authorities or the public to some territorial issues. The range of instruments is thus potentially quite wide. Particular attention must of course be paid to interactions of interventions in

several fields / with several types of tools. This is also one of the ESPON mission to try to clarify these interactions.

Among EU policies, some pursue objectives that have some territorial dimension, mainly through the reference to regions. See hereunder some examples from the EC Treaty:

Article 16
Without prejudice to Articles 73, 86 and 87, and given the place occupied by services of general economic interest in the shared values of the Union as well as their role in promoting social and territorial cohesion, the Community and the Member States, each within their respective powers and within the scope of application of this Treaty, shall take care that such services operate on the basis of principles and conditions which enable them to fulfil their missions.

Article 154
1. To help achieve the objectives referred to in Articles 14 and 158 and to enable citizens of the Union, economic operators and regional and local communities to derive full benefit from the setting-up of an area without internal frontiers, the Community shall contribute to the establishment and development of trans-European networks in the areas of transport, telecommunications and energy infrastructures.
2. Within the framework of a system of open and competitive markets, action by the Community shall aim at promoting the interconnection and interoperability of national networks as well as access to such networks. It shall take account in particular of the need to link island, landlocked and peripheral regions with the central regions of the Community.

Article 158
In order to promote its overall harmonious development, the Community shall develop and pursue its actions leading to the strengthening of its economic and social cohesion.
In particular, the Community shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions or islands, including rural areas.

Article 160
The European Regional Development Fund is intended to help to redress the main regional imbalances in the Community through participation in the development and structural adjustment of regions whose development is lagging behind and in the conversion of declining industrial regions.

Article 174
[...]
3. In preparing its policy on the environment, the Community shall take account of:
[...]
- environmental conditions in the various regions of the Community,
[...]
- the economic and social development of the Community as a whole and the balanced development of its regions.

It is difficult to assess a priori to which degree those objectives are compatible, particularly taking their means of action in consideration. On the other hand, there are also cases where, despite clear potential territorial impacts, policies do not have explicit territorial objectives in the EC Treaty. Examples of this are common agricultural policy and common transport policy. It is a major aim of ESPON to make propositions on the way to develop territorial considerations and increase their consistency in the practice of Community policies (the purpose is not to modify Treaties but to better integrate territorial dimension in the implementation).

The ESPON approach as defined in the CIP comprises a twin process. One process focuses on the analysis of existing and predictable trends (Priority 1: Thematic projects on important spatial developments), the other on territorial impact of (mainly but not only EU-) policies (Priority 2: Policy impact projects). Both ambition to assess the possible gap between the territorial objectives and what happens / is done, in order to identify policy recommendations: how do actually implemented instruments contribute or not to the achievement of the key territorial objectives? Are there potential conflicts between objectives when observing actual trends and practice? Are there potential conflicts or synergies between means that are / could be used to foster both or either of them? What can be done to maximise efficiency and synergies and minimise conflicts? Should new tools be envisaged? Answers to these questions give material to operationalise the two key territorial objectives through an integrated policy framework.

4.2 Tentative recommendations for an integrated policy framework

The tentative policy recommendations presented in this section are based on the work of the various ESPON projects. The aim of this section is to identify preliminary overall ESPON policy recommendations in the light of territorial cohesion and polycentric development and to present a first approach to an integrated policy framework.

The recommendations presented are thus of a tentative character because there are as yet no final ESPON findings and/or recommendations, as all projects have at least one more year of work before presenting their final reports. The work is based on the tentative policy recommendations presented in the Interim Reports of the single ESPON projects. The main emphasis is on the Interim project Reports from the first round, as the second and third round projects have only recently started. In addition to the various ESPON reports a number of current policy and background reports have also been consulted, e.g. the ESDP, the Second Cohesion Report, the so-called Sapir report on “an agenda for a growing Europe” and the report on “spatial impacts of community policies and costs of non-co-ordination”:

Based on these tentative findings, contact with the single ESPON projects, key actors in the field of European spatial policies and with selected experts will be made with a view to elaborating on the likely final policy recommendations. In

order to contest the soundness and robustness of the recommendations they will be exposed to a 'wild card' seminar. The final recommendations will be presented in the final report in autumn 2004.

In the following we will present the tentative policy recommendations. Firstly, we will briefly discuss the main challenges and introduce the overall findings. Secondly, we will address issues relating to the need for a more integrated approach to policy making involving mechanisms for the horizontal and vertical integration of policies, e.g. through co-operation and governance. Thirdly, we discuss European structural policies and the question of area delimitation, the need for tailor -made policies for territorial entities and support for border regions. Fourthly, we touch upon EU sector policies such as transportation, information and communication, rural development and nature protection, and discuss potential contributions to territorial cohesion. Fifthly, we focus on polycentric development at the European level and how EU policies, in particular structural policies, can contribute to it. Finally, we turn to recommendations for strengthening polycentric development at the national and regional levels.

4.2.1 A spatial approach to fostering growth and improving cohesion

EU Enlargement and on-going macro trends are challenging the territorial cohesion within the Union. Over time, enlargement will mean the emergence of an EU with much wider income disparities, and, at least initially, it would leave practically unchanged disparities within EU countries. The overall effects of European policies are small compared to those of socio-economic and technological macro trends, such as globalisation, increasing competition between regions, ageing populations, shifting labour force participation, increases in labour productivity, high-migration flows and multiculturalism. These overall macro trends do not necessarily work in favour of territorial cohesion at the European level.

The challenge is therefore to identify what types of measures, in which particular areas can strengthen territorial cohesion throughout Europe.

Growth enhancement is also the main concern of current European policies with regard to territorial cohesion, in the enlarged Europe, and in the countries lagging behind. In particular, in these countries two types of capital expenditure are likely to have a significant impact on growth: human capital investment (R&D, education, training) and physical capital investment (infrastructure). Given the limited financial

resources of EU policies, they can only become an efficient tool when combining financial instruments with non-financial instruments, particularly in the field of agenda setting.

As regards the tentative ESPON policy recommendations, there is a general focus on funding in structural policies, changes in sector policies, governance, including the need for integrated approaches, and the need for further research, data collection and better typologies. The topics addressed are the functional specialisation of territories, the competitiveness of territories and the role of urban areas as development engines, and the ambiguous relationship between transportation and territorial cohesion. Issues regarding social and environmental policies are however rather under-represented here. Especially, because of the growing disparities within EU Member States, social cohesion might deserve more attention in the discussion on spatial development policies.

Thus far, three main conclusions as regards the ESPON work can be drawn, two of which are inline with conclusions presented in the report on “an agenda for a growing Europe” and in the report on the “spatial impacts of community policies and costs of non-co-ordination”. The main emphasis is on the policy framework, which is needed for a coherent policy addressing the spatial challenges. Permanent institutionalised solutions for horizontal and vertical policy co-ordination are also being sought. Furthermore, the need for a more place- based policy is underlined, and not least in the context of the concept of polycentrism trying to strengthen specific development potentials.

- **Strengthening of sector co-ordination**

  European integration has reached a stage where the juxtaposition of two logics that ignore each other can no longer be continued without crystallising tensions with detrimental effects on integration. Parallel to the continuation of the Community sectoral model, a strong structuring of territories can be observed throughout Europe. However, in practice the degree of horizontal co-ordination between the various Community Institutions is relatively low and no procedure exists which aims at creating spatial coherence between all Community policies (Spatial impacts of community policies and costs of non-co-ordination). For achieving territorial cohesion and polycentric development, action towards more horizontal policy integration thus needs to be taken.

- **Governance approach to EU policies**

  In an environment of limited funding, European policies need to employ indirect measures more effectively.

  Effective implementation of EU policy thus frequently depends not only on the explicit co-operation of various national and sub-national government bodies in the implementation of common policies, but also on their willingness to set their own priorities and develop their own agenda in accordance with EU priorities, or to shape their local policies in the light of wider European reference points. The EU thus needs to act as a facilitator, following an incentive-based approach that treats Member States as partners willing to participate in various forms of cooperation, provided that they have a genuine interest in it (An agenda for a growing Europe – page 125-126). For achieving territorial cohesion and polycentric development, actions towards vertical integration through governance processes thus need to be taken.

- **Polycentric development**

  Focusing more directly on the spatial dimension, the concept of polycentric development appears to be particularly important for strengthening territorial cohesion, despite its ambiguity when applied at different scales. Generally, polycentric development concerns functional urban areas, their functional specialisation, the links and interaction between them and the morphological urban system. The application of the concept and importance of the single elements differ depending on the geographical scale, i.e. European, national and regional or even urban. At the European level e.g., the main emphasis is on stimulating the development of regions beyond the so-called 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. In order to achieve territorial cohesion and polycentric development this however needs to be made more explicit in the context of the necessary policies and implementation instruments.

The ESPON work has shown that the policy aims of territorial cohesion and polycentric development can be applied at various geographical levels, i.e. European/trans-national, national or regional/local (three level approach). The

meaning and implication of the concepts change depending on the level in question and can even contradict each other, e.g. strengthening polycentric development at the European level may weaken polycentric development at the national level, and vice versa.

This three level approach to spatial policies needs to be considered when discussing the tentative policy recommendations. The section on the EU approach to spatial policy-making addresses, among other things, the vertical integration of policy aims across these three levels of government, while the section on EU structural and sector policies mainly addresses territorial cohesion at the European level. The discussion on polycentric development is split into a section on the European level and a section on the national and regional levels.

4.2.2 EU policy approach

Spatial policy-making is moving towards a spatial orientation aiming at the co-ordination of sector policies at each geographical level. In this increasingly complex policy environment, the EU needs to be a platform for the formulation of policy aims and implementation instruments, as well as a facilitator leading joint efforts regarding the spatial challenges and opportunities ahead. The interdisciplinary nature of spatial development requires an approach to policy-making that involves horizontal and vertical interaction (see Figure 4). Therefore, the approach to EU policy-making, in terms of interdisciplinary frameworks, governance and capacity building needs to be addressed.

- **Develop an interdisciplinary policy framework**

  The report on the "spatial impacts of community policies and costs of non-co-ordination", pointed out that parallel to the continuation of the Community sectoral model, a strong structuring of territories can be observed throughout the whole Union, which mobilises not only the public and the semi-public structures, but also all the dynamic forces of society. The territorial approach applied in the ESDP and by ESPON illustrates the currently high degree of sector orientation and the need to consider conflicts of goals/aims between various policies as well as the demand for a more integrated policy framework. The lack of integration between different EU structural and sectoral policies can act as a barrier to the development of territorially integrated policies at the national and local levels and to the promotion of urban-rural relationships and

partnerships. The conflicts of interests between rural and urban policies are a key obstacle to the development of integrated spatial initiatives.
Another example of this is the need to regard the tension between prosperity and regional culture, which e.g. has been expressed by the slow-city movement. This tension may suggest more spatially tailor-made approaches to policy making instead of sector -oriented approaches.
More explicit are the conflicting goals in relation to transportation policy. Transport has been used as an agent for structural and spatial development policy without regard to its other consequences, or to the less positive implications for spatial development. In particular, the potential goal conflicts that stem from the negative effects that improvements in transportation tend to have on territorial cohesion and on the environment, need to be addressed in policy-making.
Another example of the need for an interdisciplinary policy framework is illustrated in the demand for an integrated rural development policy. As regards CAP, improved subsidiarity and its harmonisation with regional policies are among the key recommendations. Generally, it is necessary to tailor rural development policy more appropriately to the diversity of territorial needs across rural Europe, to build on the lessons of LEADER and Objective 5b, and to require greater harmonisation with regional policy and an approach to multi-level governance. When it comes to R&D efforts to achieve synergies are proposed as regards the Framework Programme and the Structural Funds within eligible regions.
The findings of various ESPON reports suggest that a permanent institutionalised solution to the overcoming of cross-sectoral conflicts on spatial matters is needed. This may take the form, as suggested in the report on “spatial impacts of community policies and costs of non-co-ordination”. This report calls for the creation of an inter-institution co-ordination committee responsible for the spatial coherence of Community policies and the introduction of a spatial impact sheet - obligatory for each service – that will draw up proposals for Community legislative acts. Undoubtedly however, obligatory territorial impact assessments/analysis of sector policies would be another option in this regard (see Chapter4.3.2).

- **Facilitate incentive-based governance and further research**
  In particular in the cases of limited funding resources the Structural Funds could be used to promote the goals and concepts of European spatial development policies in less direct ways, such as by agenda setting policy discourses, funding studies, evaluations and the promotion of new thinking in this area. This addresses two aspects, firstly the approach to European policy-making, and secondly the possibility of influencing the policy agenda through knowledge production.
  As regards policy co-operation, reduced funding opportunities and increasing challenges calls for broader co-operation on European policies. What is required is a much more incentive-based approach creating a partnership between the EU and Member States that are willing to participate in forms of co-operation that they have a genuine interest in. This is what the report on "an agenda for a growing Europe" calls the concept of the EU as a facilitator.
  This also includes the need for further research on European spatial development and on the spatial effects of European policies, including data collection over a longer period of time, and the development of policy relevant spatial typologies. Thus far ESPON has delivered initial samples on this.
  In the report on the "spatial impacts of community policies and costs of non-co-ordination" it is argued that the anticipation of the territorial impacts of Community policies requires constant observation by experts. This would therefore call for setting up a network with good knowledge of the operation of Community policies (as well as their national or regional translation) on the related territory, and one that can react quickly to the requests of the Commission.

- **Set frameworks and build national, regional and local capacity**
  For the implementation of the spatial policy aims, it is important to achieve understanding and commitment at all levels of governance. To achieve this it is recommended that resources for the development of local community capacity building in the relevant EU funding programmes need to be dedicated. This relates both to the promotion of urban-rural complementarities and partnerships, and to the introduction of polycentric development at various levels and the general juxtaposing of sectoral and spatial policies aims.
  Actors at the EU, national or regional levels must set a coherent framework

within which local development initiatives can best add value to European spatial development aims. In particular, they should secure co-ordination at the highest levels where mainstream policies and strategies are formulated, so that policies can effectively be integrated at the local level by local development agencies and so that vertical integration can be achieved between local, regional and national policies.

This relates in particular to rural policies that are expected to be more effective if the role of intangible factors such as governance, innovation, social capital and knowledge assets are acknowledged.

Also in the field of transportation policy there are suggestions regarding the establishment of a comprehensive transport policy. It is considered particularly vital that EU transport policy is not seen to consist of a menu of measures from which lower level jurisdictions can pick and mix; it must be a coherent single policy.

4.2.3 Focus of EU Structural Policies

At European level, EU Structural Policy is an important means for directly targeting territorial cohesion and polycentric development. Therefore it is important that these development aims are made explicit in the regulatory framework. Furthermore, the delimitation of eligible areas, the tailoring of programmes responding to the diverse territorial needs, and the support of border regions in particular need to be discussed.

- **Delimit appropriate eligible areas**

  The delimitation of funding areas and *a priori* allocation of funding needs to be assessed in further detail.

  As regards Objective 2 and Community Initiatives, such as Leader and Urban, the current mechanisms often result in rather small eligible areas, which have geographical boundaries too narrowly defined to be able to support a wider spatial perspective that includes neighbouring urban and rural areas, or to facilitate polycentric development at the regional level.

  Within the single programming areas funds should be allocated in a competitive way with no particular implicit or explicit *a priori* allocation of money and with no constraints other than that of maximising the added value of the investment. An assessment of the urban system (polycentricity including

specialisation, interaction and morphology) for each programming area may facilitate a spatially sensitive delimitation of eligible areas as well as the identification of what type of activity gives maximal added value in which part of the area.

These requests for more place based policies, suggest for Structural Funds to focus more territorial and sector co-ordination. Following the principle of subsidiarity, the national and regional actors need to identify the appropriate measures and for the specific areas at lower geographical level.

- **Tailor-made policies more appropriately to the diversity of territorial needs**

  The European territory is characterised by a high degree of spatial diversity. The Second Cohesion Report particularly emphasised urban areas, rural areas, border regions, and areas with specific geographical features, such as mountain areas, coastal and maritime areas and islands. The tentative results of the various ESPON projects illustrate that European policies targeting any of these types of areas need to take into account the diversity within these typologies in order to tailor spatial policies more appropriately to the diversity of the territorial needs. This will also require attention to be paid to appropriate institutional structures for multi-level governance.

  The need to consider European diversity has been pointed out with regard to possible non-Objective 1 measures under future Structural Funds addressing urban areas in difficulty. Differences in the performance of urban areas, especially as regards differences between current Member States and Accession Countries, suggest that a common policy approach strengthening urban areas in difficulty across the whole of the EU will not be appropriate.

  It also became obvious in the field of rural policies, where it has been recommended that we tailor rural development policy more appropriately to the diversity of territorial needs across rural Europe, which still requires a broader menu of permitted measures, with encouragement given to innovation.

- **Support border regions through EU integration and cohesion policy**

  The economic, social and political interaction between border regions and other regions on both sides of the border, especially between the EU 15 and the accession countries, plays a crucial role in realising territorial balance within

the enlarged EU territory. Activities of cross border relevance (public goods which are naturally not financed by one country or region) are typical tasks for supranational funds such as the Structural Funds. As already pointed out in the Communication from the Commission “Paving the way for a new neighborhood instrument (COM(2003) 393)”, for the creation of a “neighbourhood instrument”, Phare and Interreg Programmes have to be reviewed taking into account their contribution to territorial cohesion, territorial balance and trans-national polycentric development.

The different spatial patterns among the EU 15 and AC 10 suggests that EU integration processes and decreasing importance of national borders may result in local spatial spill-over effects and knowledge transfer, so that the *per capita* GDP of a region is conditioned rather by the level of economic activity in the neighbouring region than by the mean levels of countries and of the EU. This suggests that EU integration and cohesion policies can be considered as catalysts, reducing barriers to factor mobility, which can also be crucial for increasing the speed of convergence among the cross-border regions, as well as among the regions of new EU Member States.

Accordingly, structural policies should further assist the establishment of trans-national functional regions by targeting measures of inter-regional co-operation, dismantling barriers between the regions on both sides of the border and last but not least combining the networks of transport infrastructure on either side of the border. All of these measures should aim at expanding the regional market potential, the labour market potential and on improving the geographic position of the regions in question.

4.2.4 Spatialisation of EU sector policies

Almost all European policies have direct or indirect spatial implications. Awareness needs to be raised as regards these effects and their contribution to territorial cohesion and polycentric development. First tentative recommendations concern the transportation, ICT, agriculture and nature protection sectors. Further discussions regarding R&D and accessibility are to be found in the section on the tentative policy recommendations for polycentric development.

- **Stimulate regional actors for eEurope and symmetry of knowledge on ICT**

  The first tentative results seem to suggest that there is stronger potential for

information and communication (ICT) than for transportation policies to influence the spatial structures of the economy.

Broadband access is considered an important means for achieving better accesses to knowledge and information. To date, policies in this field tend to be spatially blind, and areas with low population density are often not served.

One approach to stimulating or pulling through broadband technologies into a region or locality is that of creating a mass of users to provide the incentive to telecommunication companies to provide networks. In most European regions the public sector is a major economic and social actor and will therefore have a significant role to play in the stimulation of the information or *e*Society, especially in regions where public authorities will be the major players in designing and delivering the benefits of *e*Government, *e*Health and *e*Learning, all of which are at the heart of *e*Europe 2005. The delivery of these *e*Services is of special interest with regard to the Services of General Economic Interests mentioned in §16 of the Amsterdam Treaty.

For the implementation, in particular in the non-core regions of Europe, regional and local authorities can act as key players in this process. Here European policies can stimulate and facilitate the work of regional actors.

The spatial impacts of ICT policies are expected to vary sharply thus deepening regional implementation. Generally, for increased ICT coverage, it is recommended that a greater symmetry of knowledge between public authorities and telecommunication providers is established. Here EU policies should take a stimulating and co-ordinating role.

- **Improve transportation networks (especially in the accession countries)**

  The effects of investments in transportation on territorial cohesion are difficult to generalise. It seems to be a broadly accepted view that transport infrastructure is a necessary precondition for regional development, but nevertheless not sufficient to turn around a negative trend in regional development. The beneficiaries of new transport infrastructure are those using the road, bridge, tunnel or rail-link in question. Positive spin-off effects are largest in cases where there are transport flows already that can gain from the improved infrastructure.

  For regions on the European periphery or in the accession countries that suffer from a remote geographical location and an underdeveloped transport

infrastructure, a gain in accessibility through a new motorway or rail-line may bring significant progress in economic development in cases where there exist economic agents who can utilise the improved accessibility. However, if the new connection opens a formerly isolated region to competition of more efficient or cheaper suppliers in other regions, the region can benefit from cheaper prices but may at the same time experience reduced employment. In those cases EU transport policies may even hamper territorial cohesion. Some would even argue that transportation investments in regions where traffic is low is economically inefficient and weakens the agglomeration advantages.
Despite the indeterminate contribution to cohesion, the improvement of transport networks (and not just of single links) is necessary for progress in achieving the internal market. This relates in particular to reductions in the vulnerability of transport networks and to increases in the capacity of modal transfer. A more territorially based perspective on transport infrastructure, where transport structures for the whole European territory is seen in connection to each other, is therefore necessary. In particular emphasis needs to be put on the conflict of interests between accessibility and sustainable development. In addition, the harmonisation of market conditions within the transport sector is requested.

- **Implement *Natura 2000* also in accession countries**
  Natural areas are under huge pressure in large parts of Europe and fragmentation of important larger structures is a serious problem, particularly in areas with high development pressure. To conserve natural habitats and biodiversity spatial fragmentation needs to be addressed at all geographical scales (from local networks to European networks).
  The creation of a network connecting patches to coherent habitats allowing meta-population survival maintaining bio-diversity as promoted in *Natura 2000* should thus be strongly enhanced.
  The large north-south zone running across Europe aligning the former Iron Curtain countries offers excellent possibilities for responsible spatial developments. The ecological network can be extended to the east while attractive locations for new economic activities can be developed here. Other possibilities for developing Europe -wide networks should also be identified.

- **Focus on sustainable rural development and reduce market price support**
  The contradiction between the distribution of Pillar 1 support and economic cohesion objectives can be attributed to the historic focus of the CAP on sectoral issues such as improving productivity and ensuring stable food markets. The priority should however now be to increase funds substantially for Pillar 2 of the CAP, while also seeking to reduce Market Price Support by far more than that envisaged in the Mid Term Review of CAP. Furthermore, the Rural Development Regulations should be broadened to focus less on agriculture and more on sustainable rural development. Moreover, the entire RDR budgets for Member States, including the Accession Countries, should be allocated according to the criterion of relative needs for rural development and environmental management.

4.2.5 Polycentric development at the European level

Polycentric development is the main concept translating the aim of 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 urban regions of European significance, can contribute to the competitiveness of Europe as well as to cohesion between different territories. Target assistance through EU structural policies, the creation of trans-national functional regions, support for specialised networks, and the specialisation of urban areas, as well as institutional setting and transportation links are important elements for achieving a more polycentric Europe.

- **Strengthen urban growth poles outside the pentagon**
  Policies should focus on the regions with the largest potentials for establishing polycentric structures. There are several large urban regions that have the potential 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 centre of Europe.
  Funds must be made available for the enhancement of polycentric urban structures counterbalancing these concentration tendencies. The distribution of funding between EU regions is therefore important.
  Historically, a substantial part of Structural Funds financing has been spent on urban regions. This will probably remain the case in the future, as a

concentration of funds to regions lagging behind will automatically 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. Structural Funds measures should focus on the creation of strong urban growth poles outside the Pentagon. Doing so in close relation to rural development (cf. SAPARD/CAP) can therefore support the objectives of polycentric development and balanced rural–urban development.

- **Tailor measures for different types of urban areas**
  The new generation of Objective 2 programmes is expected to include 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. Almost every Central and Eastern European country is suffering from regions dependent on large-scale industries (Czech Republic, Hungary; some Northwest regions, Poland: Upper-Silesia, selective spots of Romania, Slovakia: Western regions etc.). Though the processes of industrial conversion are at an advanced stage in some places, others still require specific assistance for the successful restructuring of their economic structures, for solving environmental damage, replacing worn out infrastructure and helping the labour force to attain new qualifications through taking up higher education opportunities. As the old industrial regions are likely to remain one of the core economic zones of the candidate countries, the Structural Funds should pay special attention to their bottlenecks and concentrate public funding on overcoming existing challenges. Growth potentials and the challenges of old industrial regions are specifically identified in the central trans-national region of the accession countries. Capital cities dominate the economic geography here and the endowment of the potentials in each of the countries under consideration (with the exception of Poland), but their integration function is often insufficient.
  Differences in the performance of urban areas, especially as regards the difference between urban areas in the current Member States, and in the Accession Countries, suggests that a common policy approach for strengthening urban areas in difficulty across the whole of the EU will not be

appropriate.

- **Promote the process of trans-national functional regions**
  Structural policies need to encourage the process of trans-national functional regions by targeting measures of interregional co-operation, to dismantle barriers between regions on either side of border and, last but not least, to combine networks of transport services and infrastructure. These measures can either address the creation of a trans-national region or global integration zone or support the co-operation of regions facing joint challenges.
  A potential global integration zone counterbalancing the pentagon is e.g. the Triangle of Central Europe comprising old industrial regions, capitals and urban agglomerations (Warsaw, Poznan, Krakow, Berlin, Dresden, Leipzig, Prague, Bratislava, Vienna, Budapest) and their surrounding areas. Supporting the establishment of such a European macro region implies the development of the growth and innovation potentials of this region.
  Furthermore, supporting European macro regions also implies the promotion and support of the co-ordination of developments, policy and planning activities of the neighbouring countries. This can be done by supporting trans-national actions e.g. under the framework of Interreg. The focus of interaction should thus be on joint challenges and actions such as joint development strategies covering several cities (also cross-border) or trans-national transportation corridors/links.

- **Support transnational networks of areas facing similar challenges**
  Polycentric development is about the interaction and thus the links between different urban nodes. Therefore the support of a growing web of target interaction is an important element of speeding up polycentric development. Drawing on the specialisation aspect of polycentric development, these networks need to be built around commonalities in spatial developments. Trans-national networks can be strengthened by supporting common trans-national actions e.g. under the framework of Interreg. The focus of interaction should be on common challenges and actions involving the sharing of experience and the mutual learning of regions facing similar development trends.
  The report on “an agenda for a growing Europe” suggests in that context that

new centres of excellence or new clustering among researchers across several universities on topics of common interest should be encouraged through funding by both national agencies and European programmes.

- **Boost investment in knowledge where appropriate**
  It is argued that more investment in higher education and R&D (and innovation) is needed in order to obtain the level of knowledge required to reach a higher growth path. The importance of promoting effective regional innovation systems has been acknowledged. It would appear that this remains a key connection in the bid to improve the overall competitiveness of the European economy. Furthermore, the Structural Funds and the Framework Programmes are both making a positive contribution to improving the capacity of regions engaged in R&D and innovation. Clear disparities exist between regions across the European territory in terms of their capacity to undertake R&D and innovation.
  There is thus a recognition that support for frontier research is not appropriate in all regions and efforts are targeted towards supporting the development of absorptive capacity. At present this capacity is not well distributed across the European territory.
  It is thus recommended that we need to develop substantive actions that will support the development of well-functioning regional innovation systems, with the objective of increasing the flow of knowledge generated through international networks throughout a region.
  However, the concept of endowment investments must build on and strengthen existing potentials in a region. Accordingly, it is not recommendable to try to pick winners (regions or sectors) or to adopt too much of a ‘top-down’ approach. It needs to be recognised that support for R&D may not be an appropriate strategy for all regions in Europe.

- **Invest in human capital & in education - towards equal living conditions**
  Although it has already been recognised that R&D and innovation support need to reflect the endowment potentials of a region, investment in human capital and education are important means in the strengthening of both territorial cohesion and polycentric development.
  In an environment of accelerating trends as regards population aging,

technological change and globalisation, this increases the demand for social protection. With reference to on-going demographic trends and in particular to migration tendencies, policies for more equal living conditions are thus much sought after. The reduction of regional and national differences in income and education is considered an effective means for stimulating symmetrical migration flows even within different age groups and social categories. All fields of EU policies are thus addressed by this recommendation.

- **Stimulate growth and innovation potentials – institutional settings**
  In order to counterbalance the economic dominance of the pentagon and support viable and dynamic functional urban areas more attention needs to be paid to innovation and strategies of knowledge creation within the accession countries.
  Especially at the European level the functional specialisation of a territory is an important pre-condition for polycentric development, whereas the size of an urban functional urban area is only of relative importance.
  The establishment of new public, e.g. European, institutions should be used for promoting the specialisation and growth of urban centres outside the pentagon. Good and stable institutions are also a key pre-condition for a country to better integrate into the EU economic system and to reap the benefits of the Single Market.

- **Increase sustainability, robustness and efficiency of transportation webs**
  As pointed out above, trans-European networks are important for the functions of city regions at the European level. Avoid the redundancy of each mode and increase the capacity of modal transfer. A new agenda and more funding is needed for the creation of a new infrastructure network adapted to modern needs in terms of efficiency, sustainability and cohesion. The relocation of transport streams and possibly expected modal shifts from road to rail or waterways should be used for reducing the transport burden of overloaded transport corridors.
  In the short-term, greater prominence of maritime transport in TENs and the stepping-up of funding to increase rail capacity needs to be considered. Substantial modal transfer to transit of goods by maritime transport is plausible because the basic infrastructure already exists (although it needs to be

improved) and adaptations can be carried out in relatively short periods of time. The upgrading of rail (HST and classic) services and capacity is a longer-term solution to the problem. The rail solution corresponds to the spatial structure of the existing networks. The maritime solution does not involve a major shift in current spatial trends either.

4.2.6 Polycentric development at national and regional level

Since the 1990s most European countries have 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 to improve territorial cohesion. The urban system does have an impact here, as it organises important parts of economic life. 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 mono-centric countries, this implies a focus on the second tiers of cities.

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.

- **Support regional growth poles by strengthening specialisation**

  The creation of strong urban growth poles in small and medium sized cities in peripheral, rural areas is needed particularly in strongly mono-centrically organised countries. As such, the Structural Funds should be spatially concentrated on a small number of major medium sized urban areas in the peripheral rural areas that can function as growth poles. In these areas a sound balance between economic diversification and specialisation needs to be found.

  For boosting second tier urban areas (e.g. provincial capitals) to counter-balance national first tier urban areas (often capital cities), special emphasis needs to be put on the functional specialisation within the national urban

systems.

In particular in the Accession Countries, policies should aim at restructuring/diversifying the economic structure in peripheral rural areas. Other, more general measures for supporting second tier urban areas can be the decentralisation of government services (employment), the creation of national institutions, the improvement of airport services/accessibility for secondary cities, and the raising of public awareness/promotion of these cities by major one-off-events with long-term development potentials. Special attention should also be paid to improving links between small and medium sized cities and major urban areas. Last but not least, the empowerment of regional actors is an important aspect for creating viable and specialised regions that can take a role in a polycentric network.

- **Encourage regional partnerships and the co-operation of neighbouring cities**

  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.

  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.

4.3 Territorial trends and impacts of EU policies

The Regional Classification (RCE) of Europe and the Territorial Impact Assessment (TIA) as tools for a spatial development

This chapter presents two different tools for spatial development. The SWOT/RCE and the TIA. SWOT/RCE helps to systematise results of TPGs and produce cross-sectoral analyses of regional strengths and weaknesses. For the detection of

territorial trends and impacts within Europe, project 3.1 intended to make use of the outcome of the instrument of the META – SWOT together with the also newly defined Regional Classification of European (RCE). Therefore in the long run, the SWOT/RCE procedure will be used to carry out a cross -sectorial – analysis. As a result of this analysis a picture of multi- dimensional spatial trends and impacts will be provided which than can be compared with the EU- territorially relevant policies. But this is of course the ideal future outcome of the work of project 3.1, which requires inputs from the TPGs on a concrete level. It is obvious, since the ESPON programme is only running one year now, that this is not the state of the art at the moment.
Nevertheless TPG 3.1 is able to provide some interim results within this TIR. This includes an overview of the status of all of the individual SWOTs, it also includes executive summaries of the major results, in fact strengths, weaknesses, opportunities, threats, driving forces and typologies are summarized and most important, first tentative and preliminary results show, how TPG 3.1 will use the SWOT/RCE- inputs of all the TPGs, to in order to carry out a cross sectoral analysis resp. how the instrument will be developed within the next stage.

The TIA is a tool to analyse the territorial impacts of (EU) policies.
A set of criteria was developed in order to analyse and illustrate in a comparable way how the different policy impact projects (ESPON priority 2 projects) are dealing with the territorial impact issue. A guidance concerning 'TIA minimum requirements' was submitted to the TPGs of the Policy impact projects in order to reveal in a comparable way how the different Community policy areas actually deal with the territorial impact issue (see SIR). Part of this investigation was to draw attention to the fact that any application of TIA at the programme/policy level suffers by a basic methodological dilemma - the influence of the selected Community policy intervention cannot or can only roughly be isolated from effects of other measures or influences.

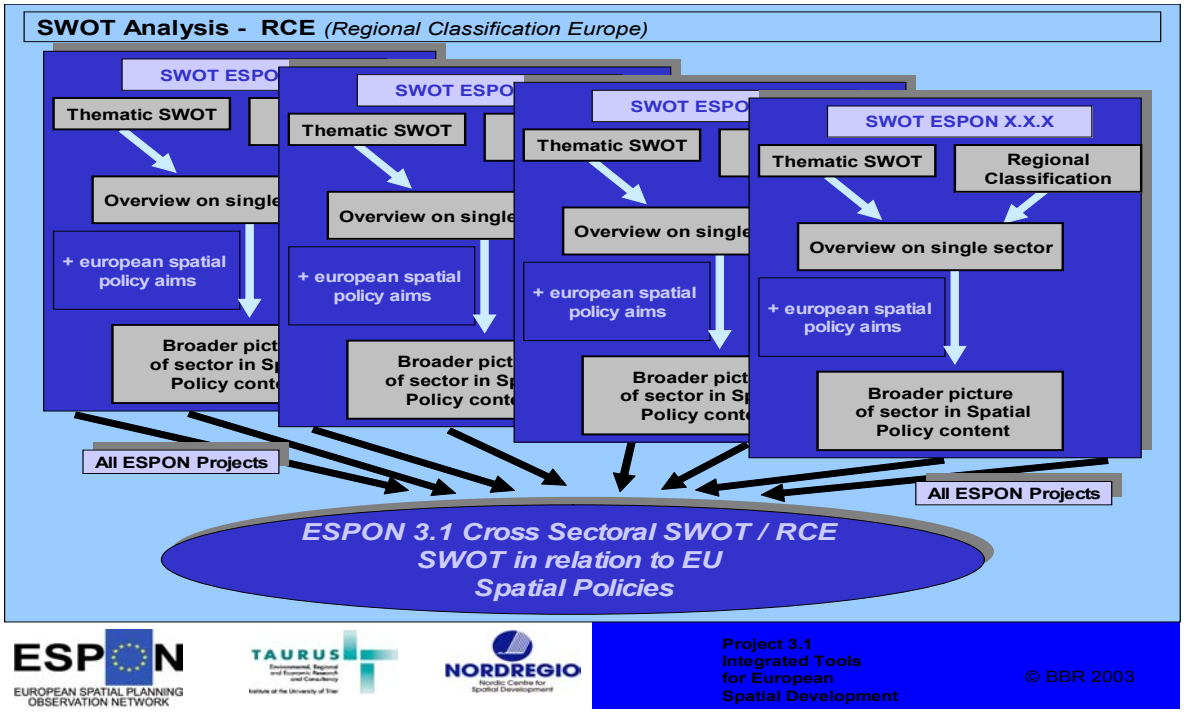
The analysis of the descriptions in the Interim reports (incl. the Third) of the projects under Measure 2 (following – only more or less - the Questionnaire submitted by 3.1 to the other TPGs) showed a considerable diversity of features which led to the conclusion that it seems hardly imaginable to cover the whole range of sectoral EU policy issues by one assessment methodology.

4.3.1 Introduction – SWOT and RCE

Although the instrument has been largely introduced within the SIR and at the ESPON Seminar on Crete, a short reminder of the purpose of the tool marks the introduction: The major aim of the ESPON- programme is to provide an overview of the actual spatial situation of Europe including the identification of the actual trends, constraints and of course to give political relevant guidance. It is obvious that such an ambitious aim is hard to achieve with a broad range of thematic projects each working with a strong focus on their field of research. Therefore the need for an instrument or procedure which fits the different parts of the thematic puzzle together in order to draw the all European spatial picture is apparent. This ambitious aim requires a special procedure developed by the ESPON project 3.1. An interactive approach was implemented in order to reach a synoptic perspective by carrying out a cross thematic analysis on the base of individual SWOT-Analyses by project[11].

The following picture shows the chosen method:

Figure no 6: The ESPON 3.1 scheme of cross sectoral analyse



Source: ESPON Project 3.1, own illustration

[11] The SWOT description mainly relies on European Commission (1999), Bergs (2000), Schmid (2000) and Karppi et al. (2001).

In practice the ESPON project 3.1 introduced a stepwise approach to create a comprehensive SWOT, taking into account the results of all the different ESPON TPGs. The SWOT procedure was introduced via a guideline disseminated in February 2003 and explained at the ESPON lead partner meeting in Bruxelles on the 25th of February, as well as in TPGs SIR and additionally at the ESPON Seminar on Crete.

4.3.1.1 Formal aspects of SWOT - RCE deliverables

In a first step the formal aspects were examined. For those projects which were tendered first and second, the delivery of a SWOT, parallel to the TIR was obligatory. For the third round projects the SWOT was voluntary. This iterative procedure takes into account, that projects need time to work within their field, analyse the special situation carefully, before they can carry out a first SWOT.

The projects can update or complete their SWOT inputs for each interim report, this was a useful and necessary arrangement, because it is quite clear, that the projects produce new aspects of their work continuously. So the next three tables show the availability of the SWOTs.

First Round Projects

All of the projects now provided a SWOT analysis, although the quality of the inputs is still very heterogeneous. Project 3.1 reminded the TPGs if not in the 3rd IR included to deliver completed SWOTs as soon as the necessary information are available. Deliverance of SWOTs 1st round projects

Table no 2: Status on the SWOTs of the first round of projects

Project no.	*Tender round*	*Reports available*	*New SWOT available*	*Source of SWOT*	*Questions answered*
1.1.1	1	FIR, SIR, TIR	X	Form filled, TIR	All, but with reference to chapters in TIR (6-8)
1.1.2	1	FIR, SIR, TIR	X	Form filled	All, but 6-11 with reference to TIR
1.2.1	1	FIR, SIR, TIR	O	e-mail after SIR	1-4
1.2.2	1	FIR, SIR, TIR	X	Form filled	All
2.1.1	1	FIR, SIR, TIR	O	Form filled, SIR	1-6, 10-11
2.1.2	1	FIR, SIR, TIR	X	Form filled, e-mail	All, but with reference to chapters in SIR and TIR
2.1.3	1	FIR, SIR, TIR	X	e-mail – Form filled	1-8
2.2.3	1	FIR, SIR, TIR	X	e-mail after TIR	1-10, but with reference to TIR

So far all projects started to carry out the SWOT. Most of the SWOTs are quite elaborated but in nearly all cases the driving forces and the typologies are not yet available. This means, that at the moment the RCE can not be carried out.

Second Round Projects

Except project 1.1.3 all second round projects delivered a SWOT, but since being at the beginning phase of their work, not all of them were able to answer more than the first 6 questions.

Table no 3: Status on the SWOTs of the second round of projects

Project no.	*Tender round*	*Reports available*	*SWOT available*	*Source of SWOT*	*Questions answered*
1.1.3	2	FIR, SIR	O		strength and opportunities will be analysed in SIR – no SWOT available
1.3.1	2	FIR, SIR	X	SIR, email	1-6 (No. 6 will be refined)
1.3.2	2	FIR, SIR	X	SIR, email	1-6, 9+11 (6-11: vague or missing)
2.2.1	2	FIR, SIR	X	SIR, email	1-6 (8 missing, rest vague or referred to SIR)

Third Round Projects

TPG 2.2.2 was the only group which was able to deliver nearly a complete SWOT.

Table no 4: Status on the SWOTs of the third round of projects

Project no.	*Tender round*	*Reports available*	*SWOT available*	*Source of SWOT*	*Questions answered*
2.2.2	3	FIR, SIR	X	e-mail after SIR	All, but with reference to the SIR (7-8)
1.1.4	3	FIR, SIR			
2.1.4	3	FIR, SIR			

4.3.1.2 Check for completeness and level of detail

The completeness and also the level of detail is varying. Most of the inputs are right now very good, very detailed and also as brief as possible. Some of the TPGs pay much attention to an introducing chapter in which they address the EU-policy aims in combination with their own field of research. Some even manage to draw first conclusions concerning their identified S, W, O and Ts. A limited number of quotes is used later on, to show how the SWOT and the EU-policies are related (For further information please see Chapter no. 8.1.1, Table no. 7: Check for completeness and level of detail 1st round projects and Table no 8 : Check for completeness and level of detail 2nd round projects).

4.3.1.3 Strengths, Weaknesses, Opportunities, Threats and the ESPON Key Concepts

A first cautious approach to analyse territorial trends can be made, by analysing the incoming SWOTs with regard to their relation with the key concepts. Accordingly the relation between the projects S,W,O and Ts and the territorial key concepts are investigated: polycentrism, accessibility and territorial cohesion. The in-depth analysis - which can not be provided at that stage as a lot of the RCE data are not available at present - will be based on a statistical analysis of the data and will be provided in the final report.

The delivered SWOTs by the TPGs are part and parcel for the following elaboration. The explicit and detailed list concerning strenght, weaknesses, opportunities and threats are available in the Chapter no. 8, Table no 8: Short Summaries S, W, O, T, Driving Forces, Typologies.

SWOT and Polycentrism

A closer look into the answers of the TPGs shows, that many refer explicitly to the territorial concept of polycentrism. One finding is the very important status of the concept, which is seen as an opportunity and described by one TPG as existing in many countries for small and medium size cities. Here it is highlighted that this for these countries is like the backbone of the urban system.

Nevertheless it is quite clear, that the concept can not be seen as “an easy to use-strategy” that fits for all EU- states. It is very clearly pointed out that the polycentricity concept has to be handled differently and specifically with regard to the territorial circumstances. And of course varying understandings of the concept can easily lead to definitions that are so vague, that it ends up as a mere “phrase” or an uncommunicative catch word. With regard to the SWOT analysis here the aspect of ‘threats’ would be addressed.

However, there is no doubt that the concept must be implemented very carefully, especially with regard to the role of small and medium-sized cities in the urban-rural concept.

In the case where the TPGs answered the concerning question it is obvious that polycentrism/ polycentric development is supported by the corresponding TPG aspect, like better traffic connection or better telecommunication infrastructure.

But the concept can also be seen somehow critical, one TPG identifies as a threat, that the concept/word polycentrism is uncommunicative and challenging to conceptualise, European polycentrism could lead to more monocentric national structures, specialisation does not support economic diversification strategies (role of cities in urban systems), and the weight of urban systems could favour Pentagon if weak MEGAs are not developing.

In total, polycentric development is seen mostly as a useful strategy for the EU spatial perspective, but it must be highlighted in front the due national context. Anyhow, overemphasizing of the concept on the all-over -European level can lead to the wrong, even diametrical opposed result. The promotion of the concept can be endorsed by the way the structural funds are shaped. Infrastructure and communication are emphasized most, when the question arises, how to find concrete ways of promoting polycentrism.

SWOT and Accessibility

Accessibility is addressed by some of the TPGs explicitly. These are stressing the importance of the transport and infrastructure systems for peripheral areas in the EU. This means not only to have the access technically available, but also by financial aspects. A weakness seen is for example that some peripheral countries have only minor population potential and low accessibility compared to central Europe as well as long distance between urban nodes within the country. This is interpreted as major challenge in terms of development of transport networks. A suggestion made is to pay more to specific geographic situations as regions with geographical barriers to access, especially islands and remote areas.

So accessibility problems predominately occur, concerning the statement of the TPGs, in those areas which are either sparsely populated or morphological or geographical disadvantaged. The dimensions of accessibility are multifaceted and can not be reduced to problems with infrastructures alone. On the other hand there are ways to reduce disadvantages of accessibility in different ways by reducing deficits in the field of access to innovation and knowledge and, by this means, support the settlement of companies in rural regions. An expected result is the creation of investment incentives in regions which normally have lower relative costs.

But it is not yet clear, if these improvements are likely to be realized, due to economic problems. As a main thread identified in the frame condition is that rural

areas lag persistently behind metropolitan and urban areas in the level, quality and cost of telecommunication services to which they have access. Last but not least, accessibility is not only a dimension of communication and transport also the accessibility and availability of natural areas is mentioned as an important factor for the attractiveness of an area for setteling.
So accessibility right now, is addressed by fewer TPGs and most of the argumentation concentrates on accessibility as a dimension of communication and communication technology rsp. infrastructure.

SWOT and territorial cohesion

Territorial cohesion is vitally discussed, the aim is clear, as it seems, cohesion as a concept of reaching something like a relative equity of living conditions for all EU citizens: But on the other hand the strategy is still lacking a common understanding. One TPG describes as a weakness, that the urban-rural relationship at present is not supporting the major aim of the strategy. This results from underdeveloped frame conditions for building urban-rural partnerships. Also the present mainstream policies under which the problems of urban areas are addressed, do not support the boarder regional perspective on territorial cohesion. They also think, that this is of course a problem of knowledge, the urban rural metabolism is described as far too complex. It is seen as a threat, if the urban rural is used as a buzzword only, not connecting to the urban rural diversity of Europe.
Therefore policy is addressed to define major conditions, smoothen the way towards cohesion. One TPG highlights that policy must ensure that all regions, even islands and peripheral regions have adequate access to infrastructure, in order to promote social and economic and, therefore, spatial cohesion in the Community.
And finally once again, the structural funds seem to be the first instrument to implement and support cohesion. One project brings a good problem referring to the level of the strategic objectives of the Structural Fund programmes. The TPG writes that on this level it is possible to identify explicit and implicit coherence between the objectives of the Structural funds and objectives of the territorial cohesion. The Structural Funds have a certain potential to contribute to polycentric development at the micro, meso and macro levels. Generally, trends in national regional policy indicate a partial convergence with trends in European regional

policies, providing scope for a greater coherence between policies at different scales in support of territorial cohesion.

Territorial cohesion is an important element for an integrated development perspective - that indeed is the impression the TPGs provide from their analysis. However as the concept is not clearly operationalised the statements are not fully compatible. The EU territory is far from providing equal conditions for all its citizens, it may not be even a wishful situation, as the division of labour and territorial specialisation are beneficial for the wealth and sustainability of the European territory as a whole. Therefore, the concept is as important as it is discussed.

4.3.1.4 Outlook: Towards a cross sectoral analysis of the ESPON regional classification

Following the discussion at the Crete seminar the 3.1. project is about to invent a quantitative approach to conduct a cross sectoral evaluation of the regional classification prepared in the SWOT analysis under the ESPON 2006 Programme. Right now the process can only be described in a first glance, because it is still discussed among the working group which carries out the analysis within TPG 3.1.

The idea

Starting point of the analysis are the typologies prepared for the regional classification and provided by the TPGs. These typologies, if correctly developed, reflect the strong and weak regions with reference to the sectoral aspects. Reference point for our analysis will be the territorial structure with particular focus on our core typologies for polycentrism (FUA classification), urban-rural relations and accessibility. The quantitative approach will focus on the following issues:

- How are the sectoral classifications related to the territorial structure? Is there any relation visible between the territorial classification and sectoral aspects?
- How are the sectoral aspects interrelated with each other? Is it possible to define and identify regional clusters?
- Are these regional clusters territorially related, i.e. do these clusters coincide with the territorial structure?
- Which kind of sub-grouping of regions could be useful for analytical and political purposes?

Furthermore the sectoral clusters of regions could be subject to further analysis which takes on board further characteristics of regions relevant for a spatial analysis such as addressing the territorial sustainability.

As a first step project 3.1 analysed the status quo of the typologies that have been provided so far. Because, before analysing, we must be sure about the comparability of these typologies in principle. Chapter 8.1.1, Table no. 9: shows this ESPON SWOT typology check.

Next steps

For the next phase, TPG 3.1 will carry out a cross-sectoral analysis on the base of the RCE. So far the exact procedure is still to be discussed, but a multivariate approach may be one possible way.

Expected results

As results a range of issues are expected: which features of regions are most dominantly related to the spatial structure and also interrelated with each other, which main territorial patterns can be identified, which conclusions can be drawn for policy recommendations.

4.3.2 Territorial Impact Assessment application of the tool TIA

Task development and interim results

The work on the topic TIA within this ESPON-project had to start by clarifying the meaning of it, taking into consideration that TIA has a rather long national tradition in some member countries where it is used for assessing the impact of proposed single spatial development projects/measures against the spatial policy concepts or goals for the area concerned. As well the European Spatial Development Perspective (ESDP) has recommended the tool TIA in a *project* orientated context although the first time at a transnational/European context.

The ESPON programme with its detailed description of the Thematic and Policy impact projects widened up the use of TIA asking for application to *programmes and policies* dealing with European spatial development issues. This needed at first a terminogical analysis, at the same time in order to define its differences to

other assessment instruments established (see FIR). One of the first outcome of that exercise has been the recommendation then to consider the acronym TIA standing for Territorial Impact *Analysis* (in order to avoid the mixing up with project related assessment procedures and in addition, to prevent the misunderstanding of pleading for the introduction of a new formal procedure).

A set of criteria was developed in order to analyse and illustrate in a comparable way how the different policy impact projects (ESPON priority 2 projects) are dealing with the territorial impact issue. A guidance concerning 'TIA minimum requirements' was submitted to the TPGs of the Policy impact projects in order to reveal in a comparable way how the different Community policy areas actually deal with the territorial impact issue (see SIR). Part of this investigation was to draw attention to the fact that any application of TIA at the programme/policy level suffers by a basic methodological dilemma - the influence of the selected Community policy intervention cannot or can only roughly be isolated from effects of other measures or influences.

The analysis of the descriptions in the Interim reports (incl. the Third) of the projects under Measure 2 (following – only more or less - the Questionnaire submitted by 3.1 to the other TPGs) showed a considerable diversity of features which led to the conclusion that it seems hardly imaginable to cover the whole range of sectoral EU policy issues by one assessment methodology. The conditions for such a "general model" are lacking at least due to two reasons:

- the very different character of the spatial dimension and implications of the policy areas concerned (in particular the different assignment to spatial goals) and
- the rather different theoretical state of the art in the different areas of applied research and planning

Therefore, the SIR recommends that for the time being efforts should go rather towards achieving more transparency of description of the individual approach along minimum standards of methodological information and using a common non-confusing terminology, in order to launch a more effective methodological communication between the different areas of policy analysis and assessment.

As point of departure for a general common and co-ordinated approach for assessment" should be regarded the following Minimum Requirements (see SIR).

- designation of (the impact causing) policy intervention(s)
- designation of hypothesis concerning cause-effect relations
- territorial incidence of results for NUTS 3 (at least for NUTS 2) regions
- reference to past and future periods
- quantitative appraisals (qualitative at least)
- designation of the topic of calculation
- designation of spatial concepts/goals referring to
- designation of the technique(s) of analysis
- designation of (applied) meaning of 'territorial'
- coverage of the whole territory relevant

Policy recommendations

On this basis the task of policy recommendations may be defined as follows. For applying the tool TIA in a more co-ordinated and effective way it should be made clear

(1) which policies/programmes have to be assessed, against which spatial/territorial goals

(2) the addressees of the recommendations have to be defined

(3) recommendations have to make clear first of all the basic requirements for any kind of application and finally the application to the very different subjects and ways of implementation of TIA

(ad 1) Policy areas for which TIA application at least is needed:

- transport, telecommunication, energy
- research and development
- common agriculture policy
- regional policy

In principle TIA application is to be considered including not only Community policies rather than also the corresponding policies at the ´lower levels´ implemented by the individual member states (see also later on, ad 2).

The spatial/territorial goals against which policies and programmes are to be assessed are at least the leading reference objectives for European spatial development:

- territorial cohesion
- polycentric development

The assessment should refer to the at the time topical elaboration of the concepts respectively goals derived from them (elaboration is currently ongoing by the ESPON-projects under Measure 1 and Measure 3).

(ad 2) In any case it is necessary to define the authorities/institutions which are addressed. Recommendations concerning European spatial development policies in principal have to deal with

- Community policy areas relevant for spatial development (the most important ones are mentioned above, ad 1)
- corresponding policy areas implemented by the member states at the national, regional and local level

Therefore, the major addressees are the concerned DGs of the EC and the national governments. However, the different requirements due to varying spatial scales and, in particular due to the considerable different systems of governance, require efforts that would go far beyond the framework of the given ESPON programme. Therefore, application for the time being should be restricted to Community policies. The ´lower levels´ should be subject of further research work.

(ad 3) The basic requirement for any kind of assessment is an appropriate information about the character of the policy intervention on the one hand and about relevant characteristics of the impacted territory on the other hand – in an adequate scale in terms of territorial units.
Applying this to areas relevant for European spatial development policies means the availability of a minimum set of relevant socio-economic and environmental indicators at least at the NUTS 3 level. Without that kind of information there is hardly a basis for any comprehensible assessment.

The specific methodological shape of the TIA has to vary along the different information bases and subjects. It is related to

- territorial data characteristics: relevance, reliability, quantitative/qualitative, time reference, status, changes, availability
- subject data characteristics: policy with or without endogenous territorial intentions (the latter applies to all EU policy areas without regional policy), certain programmes, single interventions/projects

The Third Interim Reports of projects under Measure 2 (policy impact projects) – only some of them referring to the Minimum Requirements (of the questionnaire sent out by TPG 3.1) – confirm the considerable difficulties caused by the information basis given so far, and underline the statement concerning the limitations for a common and co-ordinated TIA approach given in the 3.1 SIR (see above the introducing paras).

Preliminary specific recommendations

Nonetheless, on the basis of the responses of the ESPON-projects under measure 2 some preliminary specific recommendations may be given.

- Transport and TEN policy

Transport and TEN policy are key components of any strategic spatial development policy. European policy measures of TEN, especially transport, have direct spatial effects down to regional and local level and have big influences to economic performance of regions.

From a spatial development point of view – the aim is to guarantee parity of access to infrastructure and an efficient and sustainable use of infrastructure.

There exist very different kinds of measures – from general measures like road pricing to individual projects like Øresund-bridge. The different subjects and scales mean rather different demands on TIA.

In order to achieve a more common and more co-ordinated approach concerning territorial impacts efforts of applying TIA in the near future should be focussed on:

- providing information about the linkage between measured effects (changes of accessibility) and the causing interventions from the European level (guidelines, priority lists, budgets, grants, loans)

- providing information about the impacts at the level of concrete interventions not only for future scenarios but also for expenditures already put into effect (effects of previous policies)
- providing information about actual reference to the concept of polycentric spatial development

- Research and Development

In the policy field of research and development a direct spatial impact hardly can be recognised so far. On the other hand the spatial distribution of R&D activities give hints to the actual economic performance and territorial competitiveness within EU and to the corresponding potentials as well.

In the last years within the EU a polarisation of R&D activities can be observed. In future, networking and co-operation activities as well as specialisation will play a main role and are a big potential also for peripheral regions (nevertheless dependent on a basic infrastructure).

In order to achieve a more common and more co-ordinated approach concerning territorial impacts the efforts of applying TIA in the near future should be focussed on:

- providing information about the expenditures on the level of NUTS 3
- providing information about actual reference to the concept of polycentric spatial development

- CAP and Rural Development Policy

The spatial development effects of CAP were not really recognised so far although there have been revealed some connections to core-periphery relations (CAP seems to favour core areas) and obviously it is influencing directly landscape, land use and the environmental situation.

However, CAP is far from taking into account spatial development goals. It is still focussed on sectoral goals and favours the preservation of given structures. The spatial incidence of its expenditures is more or less determined yet by the general regulations in a direct top-down relation. In addition it strikes that the whole approach is a purely ex-post perspective so far. With the growing importance of

the ´pillar´ Rural policy chances for an enhancement of the linkage to spatial development policies may increase.

In order to achieve a more common and more co-ordinated approach concerning territorial impacts the efforts of applying TIA in the near future should be focussed on:

- providing information about territorial impacts of possible future scenarios of CAP & Rural Development Policies
- providing information about impacts on land use and environmental situation
- providing information about actual reference to the concept of polycentric spatial development

- Regional Policy

Regional policy is aiming to reduce spatial disparities within the EU. Along the discussions about the future of regional policy there can be recognised a shift from mainly supporting regions lagging behind to foster potentials of regions.

Regional policy can be regarded as the key policy for spatial development aiming to strengthening economic and social cohesion - nevertheless the main operative geographical dimension of Regional policy at present is restrained to the definition of objective areas and not so much on the level of certain interventions/projects. So far, GDP is the only indicator for the allocation of expenditures in the Cohesion Fund and in Objective 1 (also including extremely peripheral regions). Objective 2 has more differentiated indicators (dividing between rural and urban areas), but objective 3 has no territorial dimension at all.

The First Progress Report on Economic and Social Cohesion[12] tells that economic disparities between the present Member States have diminished substantially. A reduction is continuing also in regional (intra-national) disparities, although to a lesser extent than at national level. Indeed, they have grown within some Member States.

In this context it may be interesting that an earlier Report on Community policies and spatial development"[13] states that „neither the regional development plans,

[12] EC, 2002

nor the resulting Community Support Frameworks (CSFs), nor individual operational programmes to implement them normally contain spatial objectives for the region concerned. Spatial co-ordination of measures, whether with a view to ensure mutual reinforcement or to avoid incompatibility, is neither required nor forms part of the procedures of appraisal, approval and practical implementation."

Anyway, last year the Commission announced[14] that after 2006 outside of Objective 1 areas a development model could be established which gives the member states greater autonomy, will deal with geographical priorities, including:

- the least developed regions; the urban question
- the diversification of rural areas
- cross-border, transnational and interregional co-operation
- areas undergoing industrial restructuring and
- areas with severe geographical or natural handicaps

Thus, it is obvious that therefor adequate territorialisation of information is an urgent key issue. In order to achieve a more common and more co-ordinated approach concerning territorial impacts the efforts of applying TIA in the near future should be focussed on:

- providing information about the expenditures on the level of NUTS 3
- providing information about actual reference to the concept of polycentric spatial development
- providing information about the probable share of EU regional policy impacts on total economic performance changes

The further elaboration of specific recommendations needs

- determination of the subject to be treated (specific policy area, certain programme or guideline, project)
- determination of the responsible authority/actor to be addressed
- further elaboration of concepts and goals employed (still ongoing within ESPON)

While the latter is considered mainly a research issue the first two items are rather subject to political responsibility.

[13] EC, 2000 (Working document of the Commission services)
[14] EC, Inforegio No 95 and 97/98).

5 ESPON data base and GIS

According to the 3.1 task of establishing an ESPON data base, tools for spatial analysis and harmonised cartographic presentation and for the dissemination of ESPON results via web, fundamental progress has been made since the Second Interim Report from end of April.

During this period, especially the data base turned out to be a continuous undertaking related to updating and quality control, but even more related to the data and indicators included. The integration of ESPON exclusive regional indicators resulting from special processing of Labour Force data from Eurostat was one of the milestones for the ESPON data base in this period. The demand hereby was defined from the TPG's for the TPG's and supported and guided by 3.1. With progress in research of the TPG's and the result showing up in the August Interim Reports the thematic range of data and indicators grew. All TPG data, as far as they were made available, have been included as elements resp. data files in the ESPON data base founding the information system.

The ESPON mapping kit provided by 3.1 has been revised according to the TPG's suggestions related to corrections and improvement. In the actual use of the ESPON map standards considerable progress has been achieved, visible in the SIR and TIR end of August 2003, whereby results of the several TPG's necessarily might serve as examples for other TPG's.

In the course of the TPG Lead Partner Meeting in Brussels on 18th June 2003 the first results of the ESPON Web-GIS and the Hyper-Atlas have been introduced to the ESPON public showing the future possibilities of web-based map data selection and making and analytical representations. Since then the tools have been improved considering the interesting points of discussion at that meeting.

5.1 Spatial analysis tools

The translation of political spatial concepts into more concrete and measurable basis within the ESPON in on its way and statistical and territorial analysis. Regional classification and typologies indicate operationalised ways to access e.g. the fields of urban functionality and urban rural relationship (polycentrism in broader context), of accessibility and and problem related spatial and territorial

classifications. Doing this the TPG's lay ground with their spatial analysis and regional typologies.

The 3.1 project supported and focused this process during the discussions on core typologies to make the analyis of spatial and territorial development trends and the impact of policies manageable (see list of core typologies).

Furthermore the 3.1 project has to develop spatial analysis tools to define coherent "packages" of indexes and maps which could be easily computed and applied to a wide range of variables of the ESPON database. Those packages are an attempt to transform the rather fuzzy concepts which are involved in the ESDP into objective measure. In the present report, first steps are done to examine in more details the contribution of spatial analysis tools to the clarification of three major political concepts of ESDP.

POLITICAL CONCEPT	SPATIAL ANALYSIS TOOL
Subsidiarity & Legitimacy of Regional Policy: According to this principle[15], the regional policy of EU should not duplicate the action of member states and should avoid contradictions between levels of intervention.	***Multiscalar indicators of deviation***: The fact to compute the relative deviation of a region at European, National or local level help to measure the potential contradiction between levels of action.
Territorial Cohesion & Integration of Sectoral Policies: The originality of this new concept lies in taking into account the spatial dimension of the sectoral policies developed by EU.	***Map of discontinuities and spatial autocorrelation indexes***: Those tools are precisely dedicated to the analysis and the measure of spatial heterogeneity, which is not the case of classical econometric indexes.
Polycentrism & Accessibility: The connexion of a territory to the rest of Europe or to the rest of the World should be organised around selected nodes or networks which can be defined at different scales.	***Multiscalar indexes of polarisation***: It is possible to derive multivariate maps of potential economic and demographic flows induced by the unequal repartition of population and wealth.

[15] "In areas which do not fall within its exclusive competence, the Community shall take action, in accordance with the principle of subsidiarity, only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community".

Table no 5: ESPON – Core Typologies

	Typology according Crete Guidance Paper					
	Typology according end of August report					
Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Urban areas	1 Global level	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	2 International level					
	3 National/tansnational level					
	4 Regional level					
	5 Local level					
Functional urban areas (FUAs)	1 Metropoltain European Growth Areas (MEGAs)	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	2 transnational / national FUAs					
	3 Regional / local FUAs					
MEGAs	1 Global nodes	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	2 European Engines					
	3 Strong MEGAs					
	4 Potential MEGAs					
	5 Weak MEGAs					
6 Type NUTS 3 FUAs	1+ Monocentric NUTS 3 (FUA exceed NUTS 3 boundaries)	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	0+ NUTS 3 region neighbouring 1+ NUTS 3 region					
	1 monocentric NUTS 3 (only 1 FUA)					
	2 bipolar NUTS 3 (two FUAs)					
	3 polycentric NUTS 3 (three or more FUAs)					
	0 no FUA					
19 Type NUTS 3 FUAs	1+A MEGA FUA (exceeds NUTS3 boundaries)	1.1.1	EU27+2	NUTS 3		2000
	1+B Transnational/national FUA (exceeds NUTS3 boundaries)					
	1+C Regional/local FUA (exceeds NUTS3 boundaries)					
	1B transnational/national FUA					
	1B- transnational/national FUA, but FUA population smaller than non-FUA population					
	1C regional/local FUA					
	1C- regional/local FUA, but FUA population smaller than non-FUA population					
	2A at least one of FUAs is MEGA					
	2B at least one of FUAs is transnational/national FUA					
	2B- at least one of FUAs is transnational/national FUA, but FUA population smaller than non-					
	FUA population					
	2C two regional/local FUAs					
	2C- two regional/local FUAs, but urban population smaller than rural population					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
	3A at least one of FUAs is MEGA					
	3B at least one of FUAs is transnational/national FUA					
	3B- at least one of FUAs is transnational/national FUA, but FUA population smaller than non-					
	FUA population					
	3C only regional/local FUAs					
	3C- only regional/local FUAs, but FUA population smaller than non-FUA population					
	0+ neighbouring 1+ NUTS3 region					
	0 no FUA					
Rural - urban Relation	1 regions dominated by a large metropolis	1.1.2	EU27+2	NUTS 3		2000
	2 polycentric regions with high urban and rural densities					
	3 polycentric regions with high urban densities					
	4 rural areas under metropolitan influence					
	5 rural areas with small and medium sized towns					
	6 remote rural areas					
Typology of population density and Functional urrban areas	1 Densely populated with high urban integration	1.1.2	EU27+2	NUTS 3		2000
	2 Not densely populated but high urban intgration					
	3 Not densely populated and low urban integration					
Urban - rural typology	1 Urban denely populated and high urban integration	1.1.2	EU27+2	NUTS 3		2000
	2 Urban-rural, densely populated and high urban integration					
	3 Urban-rural, not densely populated but high urban integration					
	4 Urban-peripheral, not densely populated and low urban integration					
	5 Rural -urban, densely populated and high urban integration					
	6 Rural -urban, not densely populated but high urban integration					
	4 Rural-peripheral, not densely populated and low urban integration					
	8 Peripheral-urban, densely populated and high urban integration					
	9 Peripheral-rural, densely populated but high urban integration					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
	10 Peripheral, not densely populated and low urban integration					
Cross-border functionality and participation	Symmetric with small differences between neighbouring regions and suitable infrastructure for cross-border integration (1)	1.1.3	EU27+2	NUTS 3		
	Symmetric with small differences between neighbouring regions but important barriers for cross-border integration (3)					
	Asymmetric with large differences between neighbouring regions and suitable infrastructure for cross-border integration (2)					
	Asymmetric with large differences between neighbouring regions but suitable infrastructure for cross-border integration (4)					
Population change	Increase of population with in-migration and natural increase (1)	1.1.4	EU27+2	NUTS 3		1995-1999
	Increase of population with in-migration and natural decrease (2)					
	Increase of population with out-migration and natural increase (3)					
	Decrease of population with out-migration and natural decrease (4)					
	Decrease of population with in-migration and natural decrease (5)					
	Decrease of population with out-migration and natural increase (6)					
Population change in regions with high share of elderly people	Increase of population with in-migration and natural increase (1)	1.1.4	EU27+2	NUTS 3		1995-1999
	Increase of population with in-migration and natural decrease (2)					
	Increase of population with out-migration and natural increase (3)					
	Decrease of population with out-migration and natural decrease (4)					
	Decrease of population with in-migration and natural decrease (5)					
	Decrease of population with out-migration and natural increase (6)					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Typology of depolulation	Very strong depopulation (1)	1.1.4	EU27+2	NUTS 3		1995-1999
	Strong depolulation (2)					
	Depopulation (3)					
	Possible depopulation (4)					
	No depopulation (5)					
Accessibility and GDP	1 Successful regions with high accessibility	1.2.1	EU27+2	NUTS 3	NUTS 5	2000
	2 Successful peripheral regions					
	3 Lagging regions in the European core					
	4 Lagging peripheral regions					
Typology of infrastructure endowment	D Strongly mobitlity dependancy with need of process governement (Low level of infrastructrual density and poor use level)	1.2.1	EU27+2	NUTS 3	NUTS 5	2000
	C Risk of congestion and need for distribution of activity (High level of infrastructrual density and poor use level)					
	B Congestion regions with need of infrastructrual improvement (Low level of infrastructrual density and good use level)					
	A Unproblematic and use adequate poor infrastructure but (Low level of infrastructrual density and good use level)					
Broadband penetration	1 Low	1.2.2	EU27+2	NUTS 2		
	2 Medium					
	3 High					
Introduction of Competitive provision	1 Early	1.2.2	EU27+2	NUTS 2		
	2 Late					
Broadband penetration / Introduction of Competitive provision	1 High broadband - early competition	1.2.2	EU27+2	NUTS 2		
	2 High broadband - late competition					
	3 Medium broadband - early competition					
	4 Medium broadband - late competition					
	5 Low broadband - early competition					
	6 Low broadband - late competition					
Telekom supply and demand characteristics	1 Core Urban Rich	1.2.2	EU27+2	NUTS 2		
	2 Core Urban Poor					
	3 Core Rural Rich					
	4 Core Rural Poor					
	5 Periphery Urban Rich					
	6 Periphery Urban Poor					
	7 Periphery Rural Rich					
	8 Periphery Rural Poor					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Nodal structure of telecommunicatio n networks	to be specified	1.2.2				
Differentation related to advanced technologies	to be specified	1.2.2				
TN&S related spatial selectivity	to be specified	1.2.2				
Mountainous Regions	to be specified	1.3.1	EU27+2	NUTS 3	NUTS 5	2000
Extent and magnitude of natural and technological hazards	to be specified	1.3.1	EU27+2	NUTS 3		2000
Hazrad potential and vulnerability	Ordinal typology taking inti account degree of hazards and vulnerability	1.3.1	EU27+2	NUTS 3		2000
Costal Regions	to be specified	1.3.2	EU27+2	NUTS 3	NUTS 5	2000
Regions by type of impact of ICTs policies	Lagging regions reacting to cohesion ICTs policies	2.1.1	EU27+2	NUTS 3	NUTS 5	2000
	Lagging regions reacting to all ICTs policies					
	Non lagging regions with low needs of ICTs policies					
	Non lagging regions reacting particularly to efficiency policies					
Central-peripherical typology	1 Most accessible region	2.1.1	EU27+2	NUTS 3	NUTS 5	2000
	+ or - centrality and periperality					
	n peripheral regions					
EU Structural Funds Objective regions	Objective 1 regions	2.1.1 / 3.1	EU27+2	NUTS 3	NUTS 2	Structural fund period 2000-2006
	Objective 2 regions					
Pentagon	Regions within the Pentagon	2.1.1	EU27+2	NUTS 3	NUTS 2	
Lagging Regions	1 lagging regions	2.1.1	EU27+2	NUTS 3	NUTS 2	
	2 potentially lagging regions					
	3 non lagging regions					
R&D and innovation capacity	High R&D capacity and high innovation capacity	2.1.2	EU15 (EU27+2)			
	High R&D capacity but low or medium innovation capacity					
	Low or medium R&D capacity but high innovation capacity					
	Medium R&D capacity and medium innovation capacity					
	Low R&D capacity and low innovation capacity					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
R&D Regions	1 R&D Rich Regions	2.1.2	EU27+2			2000
	2 R&D Poor Regions					
R&D Market Regions	1 R&D Producing Regions	2.1.2	EU27+2			2000
	2 R&D Using Regions					
	3 R&D Poor Regions					
Rural Areas	1 predominantly leading rural areas	2.1.3	EU27+2			2000
	2 predominantly lagging rural areas					
	3 intermediate leading rural areas					
	4 intermediate lagging rural areas					
	5 leading urban areas					
	6 lagging urban areas					
Less favoured areas	1 permanent handicaps (altitude, poor soils, climate, steep slopes)	2.1.3	EU27+2			2000
	2 undergoing depopu-lation or having very low densities of settlement					
	3 experiencing poor drainage, having inade-quate infrastructures, or needing support for rural tourism, crafts and other supplementary activities.					
Predominant Farmtype	to be specified	2.1.3				
Agricultural holdings	Level 1: General farm types	2.1.3	EU27+2			2000
	Level 2: Principal farm types					
	Level 3: Particular farm types					
	Level 4: Subdivisions of level 3					
Regions towards Energy Ladders		2.1.4	EU27+2	NUTS 3		2000
Energy involvement and sensitivity	1 economically dynamic and energy efficient regions	2.1.4	EU27+2	NUTS 3		2000
	2 regions where energy is a bottleneck impeding development					
	3 regions with a strong potential for alternative energies					
	4 regions that are more influenced (either positively or negatively) by energy trends					
Dominant Structural funds spending	R Regional developement, productive infra-structure	2.2.1	EU15	NUTS 3		Structural fund period
	A Agricultural, fishery, rural development					
	S Social integration, human resources					
	C Basic infrastructure, European cohesion					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Structural Fund spending and regional performance	Low Spending - High Performance	2.2.1	EU15	NUTS 2		Structural fund period
	Low Spending - Medium Performance					
	Low Spending - Low Performance					
	Medium Spending - High Performance					
	Medium Spending - Medium Performance					
	Medium Spending - Low Performance					
	High Spending - High Performance					
	High Spending - Medium Performance					
	High Spending - Low Performance					
Structural Fund spending and change or regional performance ranking	Low Spending - Rise in Ranking	2.2.1	EU15	NUTS 2		Structural fund period
	Low Spending - Stable in Ranking					
	Low Spending - Fall in Ranking					
	Medium Spending - Rise in Ranking					
	Medium Spending - Stable in Ranking					
	Medium Spending - Fall in Ranking					
	High Spending - Rise in Ranking					
	High Spending - Stable in Ranking					
	High Spending - Fall in Ranking					
Sectoral Economic structure in the Candidate Countries	Regions with large agriculture and low to medium employment density	2.2.2	ACC12	NUTS 3		
	Regions with medium agriculture and low employment density					
	Regions with low agriculture, mostly strongly industrialised and low to mediu employment density					
Regional conditions based on potentials and bottlenecks	Capital cities/major urban agglomerations	2.2.2	ACC12	NUTS 3		
	Western border regions					
	Peripheral eastern and rural regions					
	Old industrial regions					
Typology of urban area	Absolute difficulty	2.2.3	EU27+2	NUTS3	NUTS 5	
	with 5 subtypes according absolute and relative difficulties					
	Relative difficulty					
	with 2 subtypes according absolute and relative difficulties					
	Not in difficulty					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Urban Structural changes	1 Declining urban industrial areas	2.2.3	EU27+2	NUTS 3		2000
	2 Strengthening urban industrial areas					
	3 Urban industrial areas in transformation to a service economy					
	4 Urban areas exhibiting strong socio-economic disparities					
	5 Urban areas exhibiting a balanced distribution of wealth and opportunity					
Underlying urban features	1 Economic capital	2.2.3	EU27+2	NUTS 3		2000
	2 Social capital					
	3 Network capital					
	4 Environmental capital					
Settlement structure	1 Central Areas in agglomerated regions	3.1	EU27+2	NUTS 3	NUTS 2	2000
	2 Highly densely areas in agglomerated regions					
	3 Densely areas in agglomerated regions					
	4 Rural areas in agglomerated regions					
	5 Central Areas in densely populated regions					
	6 Densely areas in in densely populated regions					
	7 Rural areas in in densely populated regions					
	8 Rural area more densely populated					
	9 Rural area less densely populated					
Border regions		3.1	EU27+2	NUTS 3	NUTS 5	2000
Interreg III A regions		3.1	EU27+2	NUTS 3	NUTS 5	2000
Interreg III B regions		3.1	EU27+2	NUTS 3	NUTS 5	2000

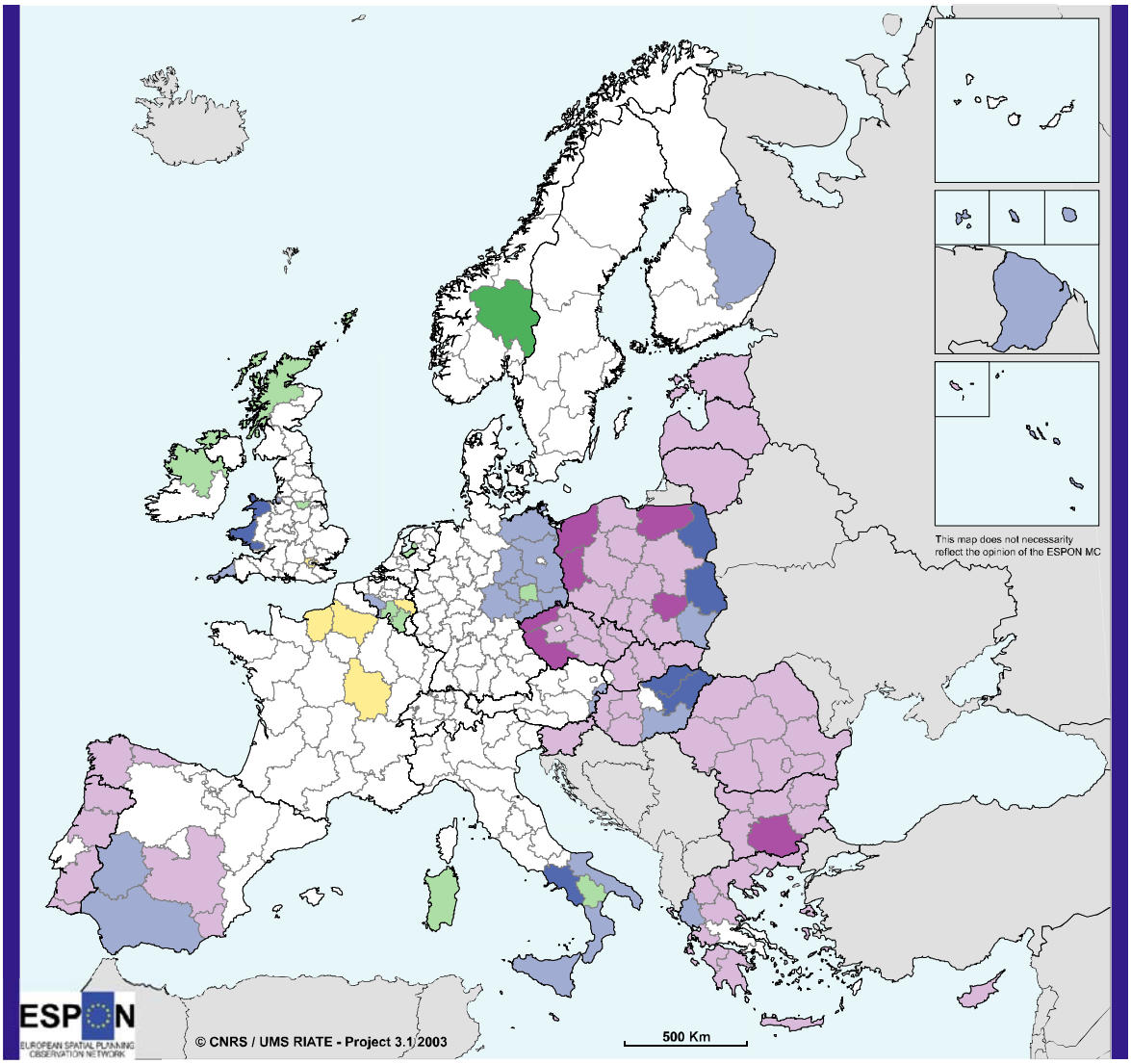
5.1.1 Multiscalar indicators of deviation

Subsidiarity is a question of great importance in the field of European Spatial planning and many authors underline the contradictions which can appear between European policies and national policies or between global dynamics of the European territory and local trends. The definition of “lagging” regions is very important for spatial planners and policymakers who try to develop social and territorial cohesion. In the present the defintion of lagging regions takes place with the fact to be under a given value for a single criteria, in this case the very emblematic value of 75% of the mean of GDP per capita of the EU.

The multiscalar approach evaluates the same index at various scales. In terms of territorial cohesion, it is indeed very important to evaluate the level of development of a region according to at least three levels: European, national and local. If we use the criteria of 75%, we will find only four regions which can be considered as “lagging” for all criteria: Eszak-Magyarorszag (HU) , Campania (IT), Lubelskie (PL) and Podlaskie (PL). Many other regions are “lagging” for only one or two criteria which implies specific actions at various levels. For example, the Austrian region of Burgenland can be considered as “lagging” at European and national level but is specifically “advantaged” at local level because of its common border with poorest regions of Hungary and Slovakia. This situation is very different from the region of NE Bulgaria which is “lagging” at European and local level (because of a common border with the richer regions of Greece) but can rely on specific advantages at national level (capital region with Sofia).

The typology presented in Map no. 1 and the associate graphic representations of “lagging profile” could be a powerful tool for the improvement of regional policies, if it was applied to better indicators than GDP/inh.

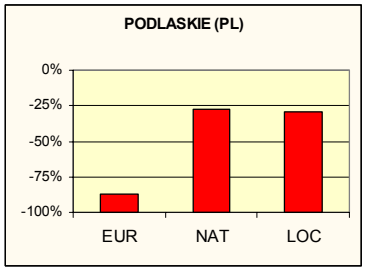
Map no 1: GDP per capita (pps), 1999 – Multiscalar typology of lagging regions

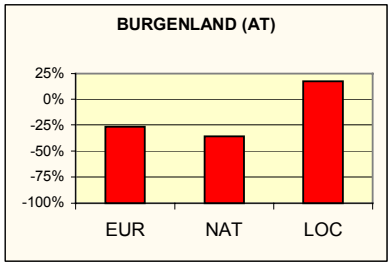


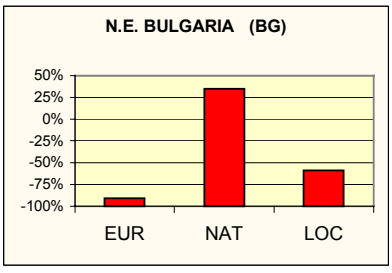
Under 75%

	European deviation	national deviation	local deviation
			X
		X	
		X	X
	X		
	X		X
	X	X	
	X	X	X

Geographical Database: Eurostat GISCO
Origin of data: EU15 and CC's, Eurostat Regio
Norway and Switzerland, National Statistical Offices
Source: Espon Database







5.1.2 Spatial autocorrelation, gradient and discontinuities

The weakness of many econometric approaches of territorial cohesion is to propose synthetic indexes of convergence which do not take into account the spatial autocorrelation[16]. In the report on "Multiscalar Territorial Analysis" (provided in Annex A of this report), we have delivered maps of discontinuities of GDP/inh between NUTS 2 regions which demonstrate clearly the interest of a spatialisation of economic disparities. At present time, some new economic approaches of regional convergence try to integrate this spatial dimension by means of new indexes taking into account the spillover effects (correlation between the growth of a region and the growth of the neighbouring regions) or the club effects (existence of group of regions following the same path of convergence). The TPG 3.1 has developed a partnership with the TPG. 1.1.3 in order to propose a detailed analysis of the dynamics of economic discontinuities based on GDP/inh[17].

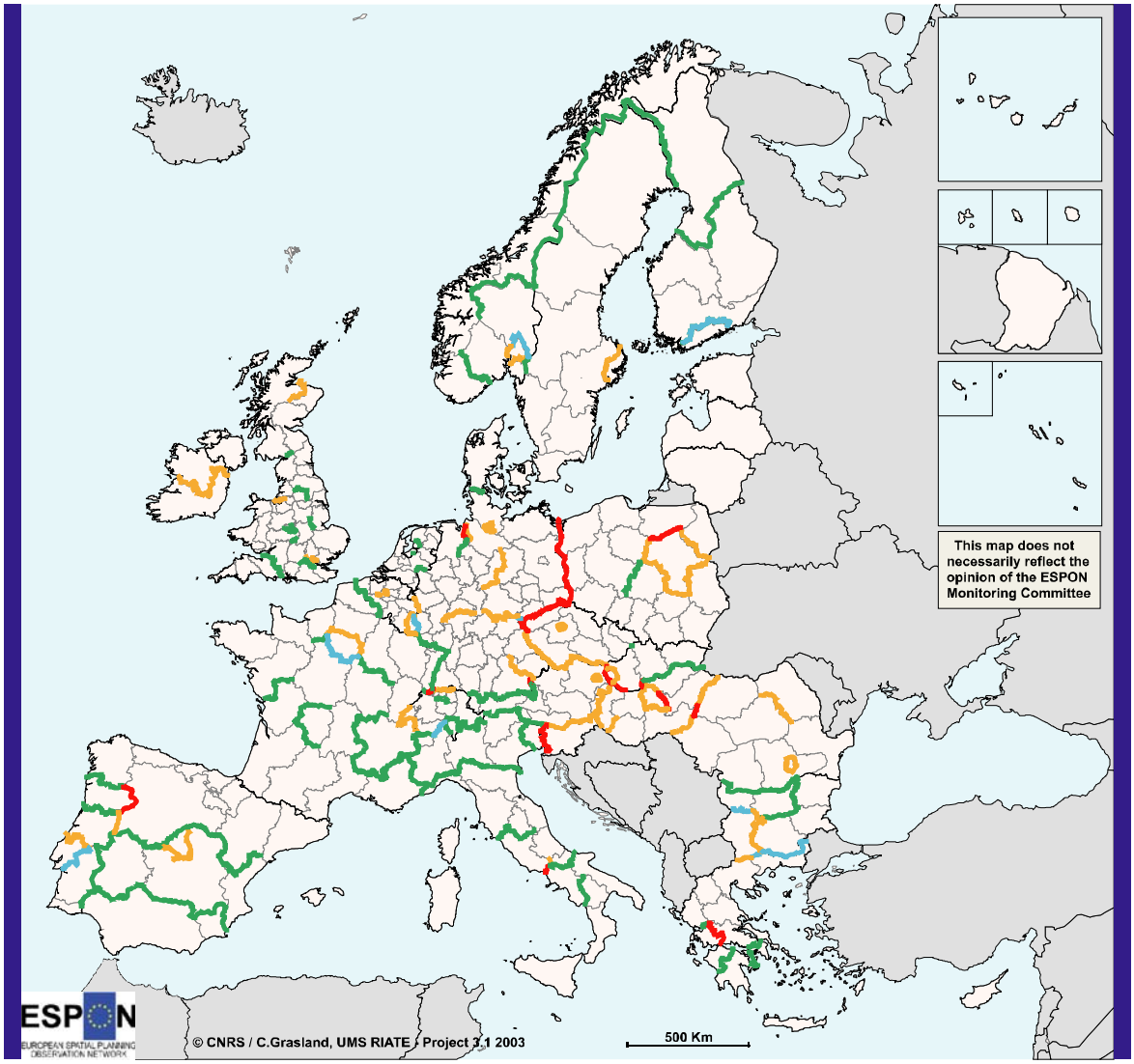
But a pure economic approach is not sufficient and it is not correct to base the definition of territorial discontinuities on a single parameter. The evaluation of the potential flows between neighbouring regions depends also from the amount of population located on each side, from the presence of a common language, from the demographic complementarities, etc. As an example, the next figure proposes a cross-combination of major economic gradient (relative difference of GDP/inh. > 50%) and demographic complementarities (difference of mean age of population > 2 years) which help to precise different situations where the demographic and economic gradients can produce cumulative or contradictory effects.

In partnership with TPG 1.1.3, a multivariate analysis of regional discontinuities will be developed, taking into account many criteria (economy, demography, language, accessibility …). This global analysis should be completed by some case-studies on the area where those discontinuities produce the most important social and economic effects.

[16] Spatial autocorrelation can be defined as a relation between the value of a variable X in a given unit and the value of this variable in neighbouring units. The spatial autocorrelation can be positive (the dissimilarity of units is increasing with distance), negative (the dissimilarity is decreasing with distance) or null (no relation between level of dissimilarity and distance). The spatial autocorrelation can be measured and tested.

[17] See the Interim Report of TPG 1.1.3 which presents the results of this common research.

Map no 2: A cross-analysis of the distribution of economic and demographic discontinuities in 1999-2000



GDP + Age + / GDP - Age -	*Cumulative effects of economic & demographic gradients*	Origin of data: EU15 and CC's, Eurostat Regio Norway and Switzerland, National Statistical Offices
GDP + / GDP -	*Economic gradient only*	**Source: Espon Database**
Age + / Age -	*Demographic gradient only*	
GDP + Age - / GDP - Age +	*Contradictory effects of economic and demographic gradients*	

5.1.3 Polycentrism and simulation of potential flows of economic convergence

The unequal repartition of population and wealth can produce various consequences. In a neoclassical framework, the regional economic disparities are supposed to be reduced by the mobility of people (from poor regions to rich regions) or by the mobility of capital (from rich regions to poor regions). This neoclassical framework has been criticised by many authors, especially in the case of conditional convergence with apparition of "clubs", but it remains an interesting basis for the simulation of potential consequences of economic disparities in Europe.

In recent research papers[18], the members of the Hypercarte Project have proposed various modelling of potential flows induced by the unequal repartition of population and wealth at world scale. A preliminary application of this model to the GDP/inh. of European regions in 1999 has been realised and the results are interesting, even if it is necessary to check it very carefully and discuss on possible improvements with other TPGs of the ESPON Programme[19].

- The potential economic polarisation at local scale (50-250 km) presented on the next map indicates the existence of a very polycentric pattern, related to the distribution of a regular pattern of metropolitan areas richer than their neighbourhood.
- The potential economic polarisation at medium scale (100-500 km) presented on the following map presents an upper level of polarisation with a dramatic reduction of the economic polarisation around selected macro-regions.

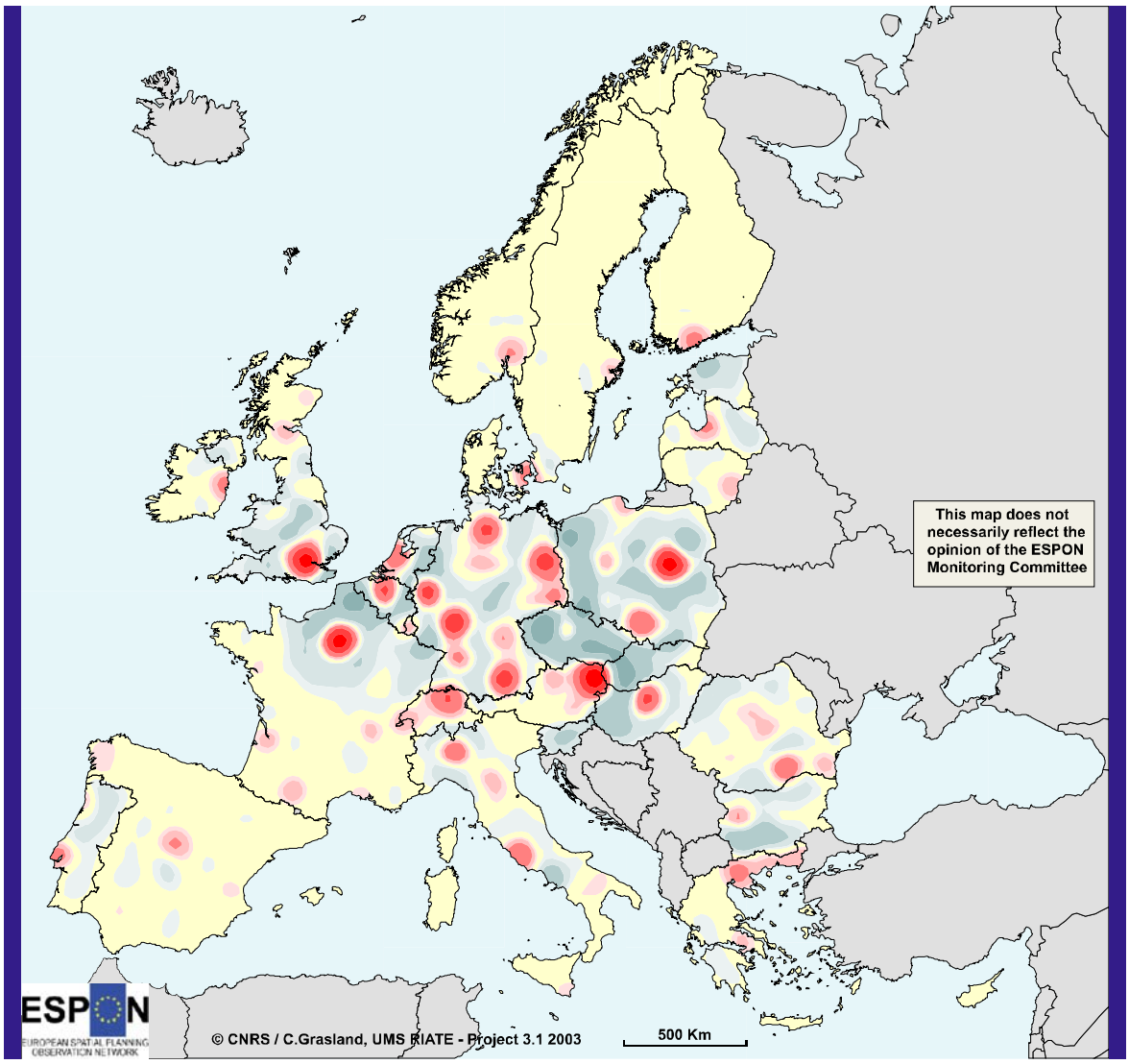
[18] Grasland C., Mathian H., Vincent J.M., 2000,"Multiscalar Analysis and map generalisation of discrete social phenomena: Statistical problems and political consequences", Statistical Journal of the United Nations ECE, 17, IOSPress, 1-32.

Grasland C., Madelin M. , 2001 ,"The unequal distribution of population and wealth in the world", Populations et Sociétés, n° 368, 4 p.

Grasland C., 2003, « Richesse et population dans le monde : une représentation multiscalaire des inégalités », Mappemonde, 69, 2003-1, pp. 20-26

[19] In this preliminary experiment, the potentials of population and wealth have been computed on the basis of Euclidean distance which induces unrealistic approximation in some cases. A more accurate map will be realised when we will have received a time-distance matrix at NUTS3 from TPG 1.2.1

Map no 3: Potential economic polarisation at local scale in 1999 (50-250 km)



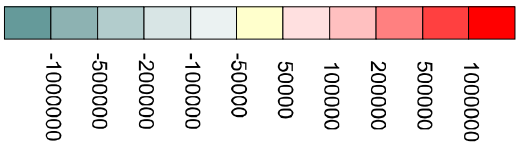
Local concentration of population

Potential flows of population →

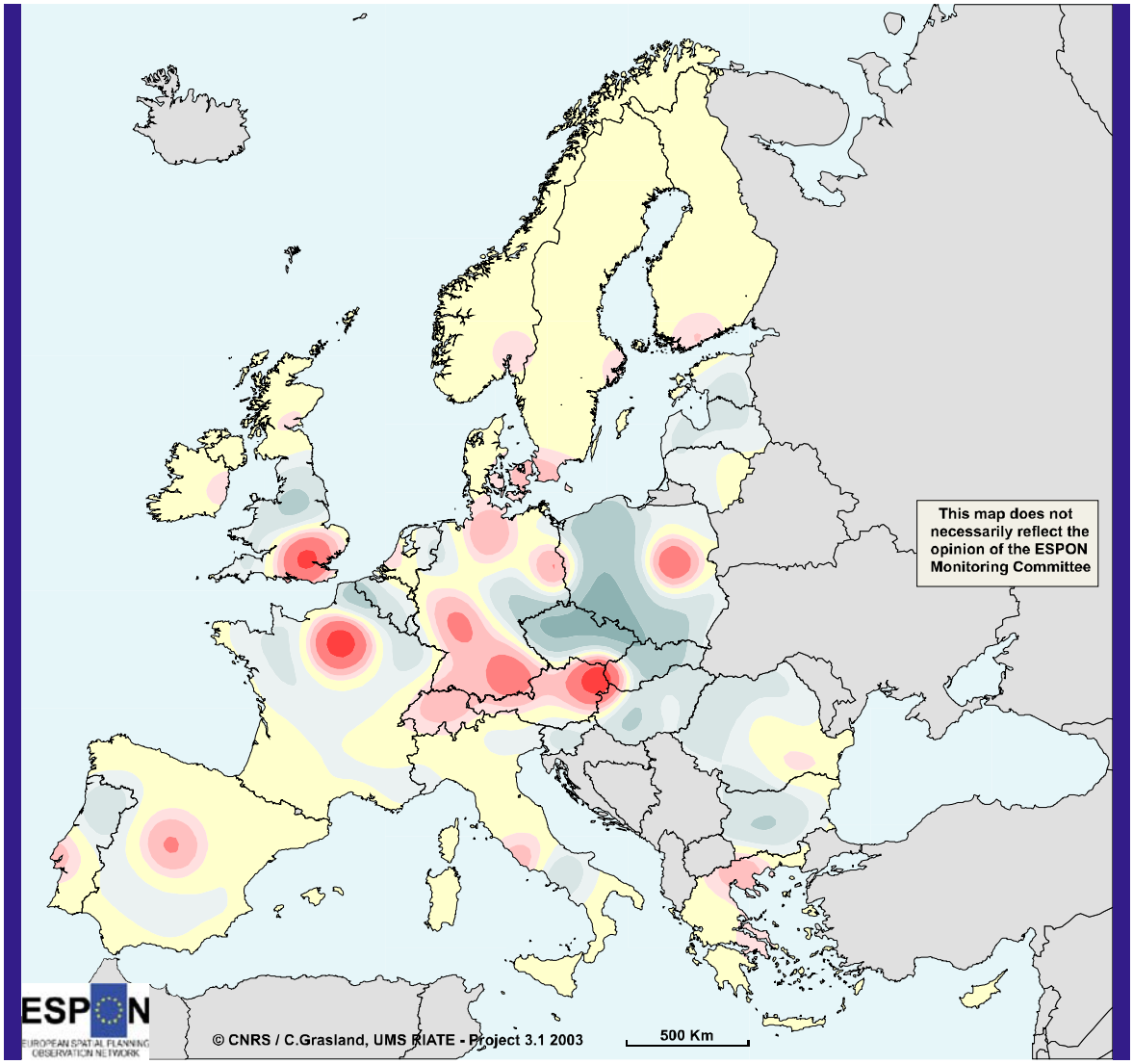
← *Potential flows of GDP*

Local concentration of GDP

Origin of data: EU15 and CC's, Eurostat Regio
Norway and Switzerland, National Statistical Offices
Source: Espon Database



Map no 4: Potential economic polarisation at medium scale in 1999 (100-500 km)

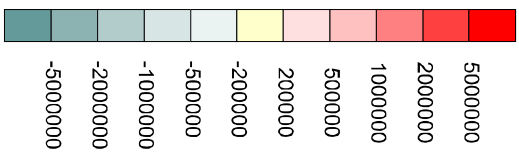


Local concentration of population

Potential flows of population →

← *Potential flows of GDP*

Local concentration of GDP



Origin of data: EU15 and CC's, Eurostat Regio
Norway and Switzerland, National Statistical Offices
Source: Espon Database

5.2 The ESPON-Hyperatlas

The research group Hypercarte is a research project on interactive web cartography of social facts. Hypercarte develops generic software like the package Multiscalar Territorial Analysis and the ESPON Hyperatlas is a specific implementation on a particular dataset.

In the framework of the TPG 3.1, the objective is to propose an operational version of an interactive spatial analysis tool which should be able to compute and to map easily the indicators of multiscalar deviation and the discontinuities between contiguous regions (see Chapter 5.1.2).

The other spatial analysis tools presented in the previous sections (like smoothing method) will not be implemented on the Hyperatlas in the framework of the contract ESPON 3.1, because they are much more complex from theoretical and computational point of view. And it seems reasonable to evaluate the interest of a tool like the Hyperatlas on a first coherent package of tools before going further.

Within TPG 3.1 alternave ways have to be proved to enable a suitable smoothed cartographic presentation with a then no longer regional than spatial view on territorial trends and phenomena. It has to be examined how to integrate the connection to the ESPON data base and if a direct use of ESPON map kit files will be possible.

5.2.1 Timetable

The timetable for the achievement of the current project is presented in Figure no. 7: Timetable of the ESPON Hyperatlas. Up to now we have realised a prototype version which includes actually the module of analysis of hierarchy (indexes of deviation to European, national or local levels) but not the module of contiguity analysis (maps of discontinuities) neither the module of typology analysis (combination of criteria). Those modules should indeed be validated from a spatial analysis point of view before being included in the software.

Figure no 7: Timetable of the ESPON Hyperatlas

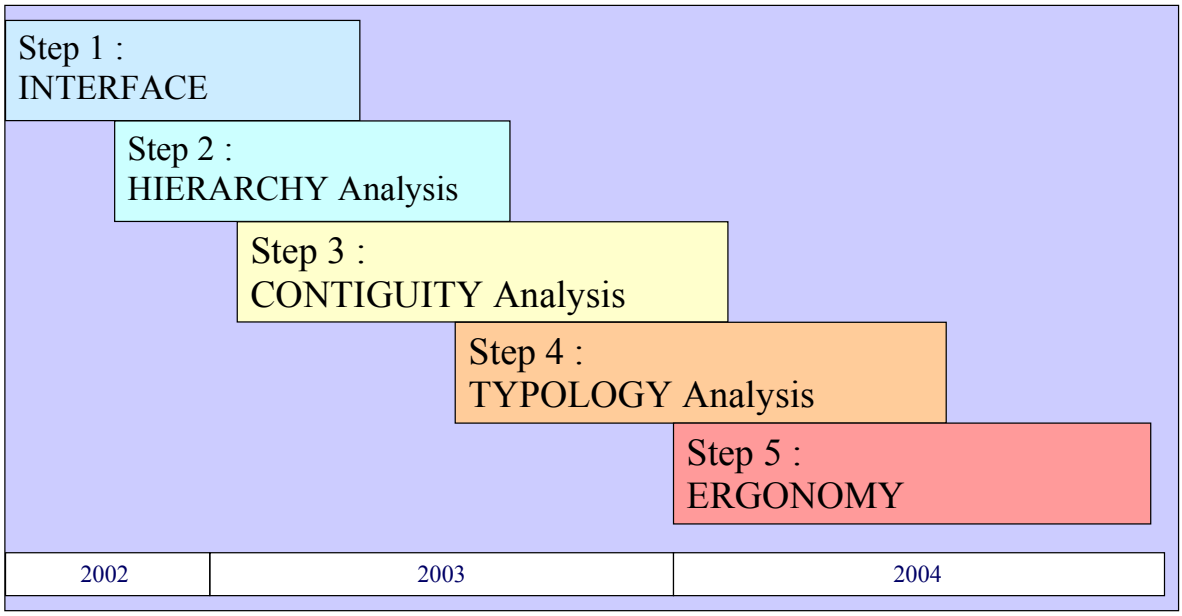
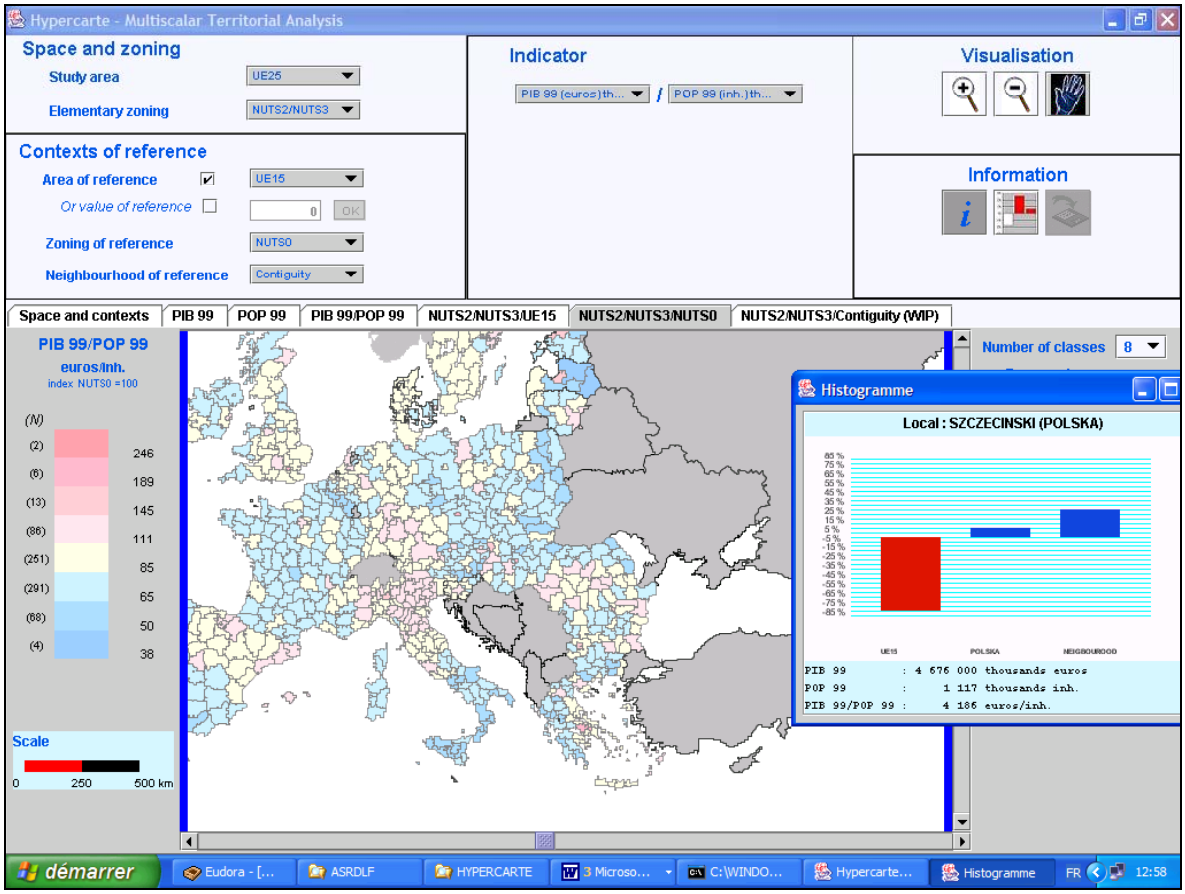


Figure no 8: Interface of the ESPON Hyperatlas



5.2.2 Diffusion of the prototype version in ESPON network

In the next step it will be necessary to examine very precisely how the ESPON Hyperatlas could be efficiently connected with the new version of ESPON database and how it can be used by the members of the ESPON network (TPG, Contact Points, …).

- **Website / CD-Rom**: In the initial formulation of the project of Hyperatlas, we considered that this software should be implemented on a website where a cluster of parallel computer will insure the computation of maps and indexes in real time. We are always in favour of this solution, because the speed computation of maps is an essential dimension of the interactivity. The problem is that such a solution implies not only initial costs of investments (installation of the website + cluster of computer) but also permanent fees for the maintenance of the website. Another solution is to deliver the software on a CD-Rom with less possibilities of interactivity, power of computation, etc… but with lower costs.

- **Copyrights on statistical and cartographical databases**: The data and map contours which are used in the ESPON Hyperatlas are theoretically the property of European and national institutes like Eurostat and Eurogeographics. It is necessary to examine how the existing contract between ESPON and those institutions allow the diffusion of the thousands of (virtual) maps which can be delivered by the ESPON Hyperatlas. Indeed, the kernel principle of the Hyperatlas is the fact that the maps are not stored but produced interactively by the users who can change so many parameters that it is impossible to define a list of possible maps… This problem of copyrights is not very crucial if the Hyperatlas remains an internal tool of the ESPON network. It could be important if the Hyperatlas is used for the promotion of ESPON results toward the outer world.

- **Heterogeneity of users**: Even if the access to the ESPON Hyperatlas remains limited to the ESPON network, we will have to face the difficult question of the heterogeneity of users (policymakers, scientists, administration) which do not have the same expectations or the same familiarity with map-making tools and

spatial analysis concepts. It is therefore necessary to develop a very efficient system of help, taking into account the feed-back of the first users.

5.2.3 Future developments of the ESPON Hyperatlas

Even if it is not possible to realise it in the framework of ESPON 3.1, it would be interesting to have a global view of what should be the future steps in the development of the ESPON Hyperatlas. If we follow the idea that it should be organised around coherent package of spatial analysis tools, we can propose the following steps :

- **Regional Analysis System**: the aim of this package which is actually partly realised in ESPON 3.1 is to propose standard indexes and maps of spatial integration for databases available at Nuts2/Nuts3 levels. Classical maps of deviations to European or national levels will be completed by specific indexes of local heterogeneity (difference between one region and the neighbouring ones, map of discontinuities, …). In the future, automatic clustering methods with contiguity constraints should also be implemented in order to propose specific regionalisation of EU and to compare their limits to official trans-national areas (Interreg III B).

- **Multiscalar Analysis System**: the aim of this package is to develop an integrated database and cartographic system for the combination of environmental and socio-economic databases at the local level. As suggested by the expert from Eurostat and the European Environment Agency the data should be transposed or desaggregated in a first step on a regular grid in order to insure their full compatibility. In a second step, various procedures of smoothing or aggregation could be applied in order to produce multiscalar analysis of spatial distributions of the phenomena of interest. This package should be developed in strong connexion with the INSPIRE project where the ESPON project is actually associated.

- **Dynamic Analysis System**: the aim of this package is to produce coherent time series of basic indicators in order to evaluate the main trends of European territory in a long term perspective (1960-2020). It is indeed impossible to produce good evaluations of future trends without taking into account the past

evolution of European territories. The technical specifications of this package should be completely different from the methods used actually for the construction of the ESPON database (fixed rows and columns to be filled …). A dynamic database associated with dynamic maps implies a complete reconstruction of the data structure which should be organised states by states with automatic methods of aggregation / disagregation and smoothing able to insure the compatibility of data and maps whatever the changes in territorial units. The basic problem is to select methods which insure the maximum time-compatibility with the minimum lose of information. Furthermore, it is important to establish a database which insures compatibility with the past and the future through a set of basic prospective function (especially for relatively "predictable" phenomena like demographic evolution or urban sprawl).

Out of those three modules of general interest for all researches developed in the ESPON network, it should also be very important for ESPON to develop specialised cartographic and spatial analysis tools on specific subjects like the analysis of urban networks, the modelling of transportation networks and accessibility, the environmental questions, etc.

5.3 Web-based GIS

According the different groups of users and the different demands the web based GIS has been developed with two approaches The first approach is the "lightweight" version for a more easy access and information presentation. Through it a display of static maps with a pre-defined classification is possible. In the second more detailed approach through the use of a Java viewer the presentation of dynamic maps via the Internet is enabled. By the latter we mean that the user has the ability to dynamically add data to the map, view a graphical representation of data and execute queries based on them at his will.

5.3.1 Technical outline

The platform that has been so far used for map representation in the Internet is ArcIMS version 4.0.1 running on windows platform. Since security issues has risen as far as the security that windows platform can provide to applications dedicated for use through the Internet we managed to run ArcIMS on Linux platform (Ret Hat

7.0) with Apache version 1.3.20 and Tomcat version 3.2.3 that beyond the security effectiveness also provides high quality performance in low cost.

In addition we set up an MS-SQL server machine in which we imported from tables that are included in the ESPON Access Data Base Version 2.2 the tables that have been checked out and verified. We have to mention that because many of the fields of the tables were nulls we inserted the value (-1) in order to manage to make a classification. That means that in all cases were the value (-1) appears the user has to bear in mind that this value corresponds to null.

In the same machine we installed ArcSDE. ArcSDE is a gateway that facilitates to manage spatial data in a database management system. ArcSDE makes feasible to manage geographic information in a relational database which in our case is MS-SQL.

5.3.2 Site configuration

We developed an initial page that can guide and help the user to navigate through the application and acquire the desired information. This home page can be found under the url http://www.uehr.panteion.gr/espon/. Through this site the user has the following abilities:

Login in html viewer (through the selection of one of the choices under simple analysis) which is appropriate for a variety of browsers with less client side processing capabilities. These are standard html sites without the ability of classifying the layer's fields and they represent standard predefined views. View, query and buffering are the main available functions in html viewer.

Login in advanced analysis map in which the user can dynamically import any table that resides in the database in the form of sde layer and he can classify and view any field of the given layer once the user grant access to the SQL server.

View the metadata of the tables. This is a very crucial aspect, since the most fields of the tables have descriptive names that must be abbreviated in order to be valid. This results in the fact that many field names can be confusing.

View a statistical analysis of the data. The user can select from all the variety of the data and view a chart representation of them.

The user can also download from the home page the java plug-in (if not installed in his machine) in order to be able to use the advanced map analysis.

Finally the user can view a short description for the use of this initial page by using the option *instructions.*

We have to mention that after the user makes a choice he will be prompted to enter a valid name and password or else he won't be able to gain access to the aforementioned capabilities. The authentication mechanism is based on the authentication provided by the apache server. (see Figure 11).

5.3.3 Using the application

Simple Analysis Maps

Once the user has selected to use simple analysis and has selected a particular site he has to authenticate himself by giving his user name and password. In this case the user can view pre-defined sites and classifications. He has not the ability to add dynamic data into the map but he can select which layers to view by clicking the *visible* check box button and pressing the *refresh map* button. He can also view the data that relates to the map by activating the desired layer using the *activate* check box and the *identify* button. Further more in order for the user to view the pre-defined classification he must select and activate a layer as described above and toggle between the legend representation and the layers representation. In addition the user through this environment can make use of the classical tools such as zooming in and out of the map, panning the map, buffering and printing the map by using the appropriate buttons in the left side of the map.

As we have already mentioned, the use of abbreviated names for the fields of the table makes them hard to understand. So, it is essential for the user to be able to view the metadata of each table in order to find the description of each field. This is achieved through the use of the *metadata* button that allows the metadata tables to be displayed in a different explorer so that the user can easily view the map and also search the table for the metadata that he wants to find (see Figure 9).

Finally the user can return to the main page through the use of the return button that resides at the bottom of the page.

Advanced Analysis Map

Advanced functionality with extensive user interaction and analysis is now available through the use of the *advanced analysis map* choice. This environment requires from the user to install once in his/her machine the JRE (Java Runtime Environment). As soon as he gains access to the initial map he/she can then establish a connection with SQL server by giving an information such as the ip address of the server and a valid user name and password.

Since the user has access to the database he can then access any tables (layers) that reside in it. He/she can import any table in the default image and he/she can classify the information given by that table according to the field of his choice. He can also repeat the above steps and to classify any additional fields. The user can also configure the layout of the classification that is the colors and the number of range for the classified field.

Further more the user can use the query builder which is an integrated application that allows user to build from scratch queries, view the results and represent them onto the map. (see Figure 11).

The user can repeat these steps and bring as many layers as he wishes and he can always return to the initial page by using the refresh button. The user for security reasons will be prompted to type his user name and password again for using the advanced analysis map. In this level the user besides the ability for dynamic adding and classifying data has the ability of querying the data and again has the previous classical abilities of zooming, panning.

Statistical Analysis

The statistical analysis option provides the user with a monovariate analysis. The user can select a data table and he can view not only certain statistics (e.g. mean, coefficient of variation) of the selected variables (indicators) but also graphical representation of them in the form of charts.

Metadata

In order for the user to view the metadata we have implement separate html pages that are initiated from the site and represent the metadata tables in the same way as they have been given on the ESPON Access Data Base. This page can be activated by the metadata button and the user can search for the given data by using the built in capabilities of the internet explorer for searching.

Currently we have not as yet completed the data storage in our database and the metadata representation in html pages. We are in the process of validating the data and stored as many tables as we can in our database giving priority to data tables that have a lot of information and can be meaningful to the researcher.

5.3.4 Future plans

During the development of the application we dealt with some problems varying from the customization of the application so that to fulfill our special needs to the friendliness of it. In order to outrun these problems we are currently developing a webgis application of our own based on java map objects and java scripts. Our goal for this application is to present all the aforementioned capabilities of the current application under one unified environment. So the user will be able to query the database, view the resulting map, the statistical data, the metadata and the results of the statistical analysis with graphs, in the same window.

Figure no 9: Initial site of ESPON web page

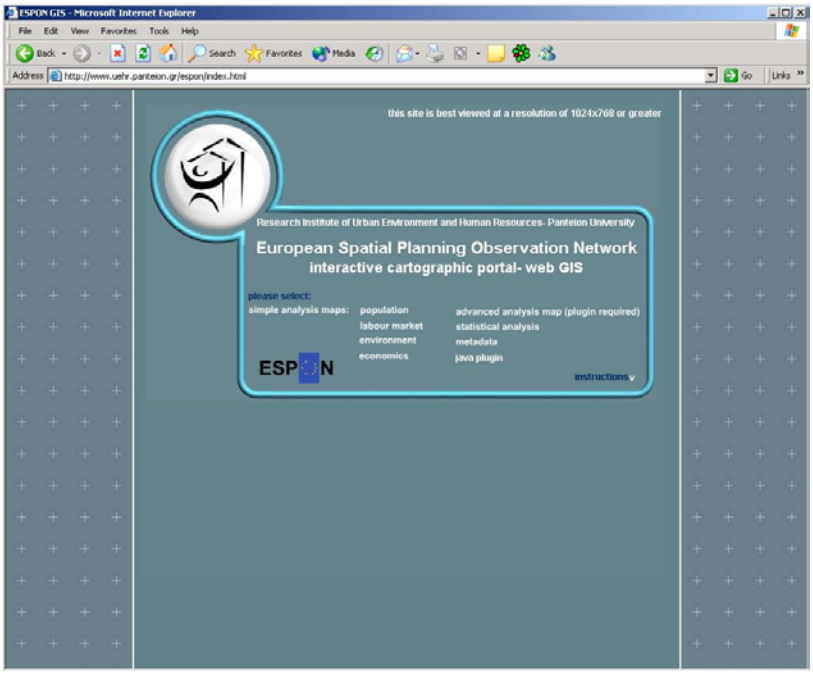


Figure no 10: HTML viewer and MetaData explorer

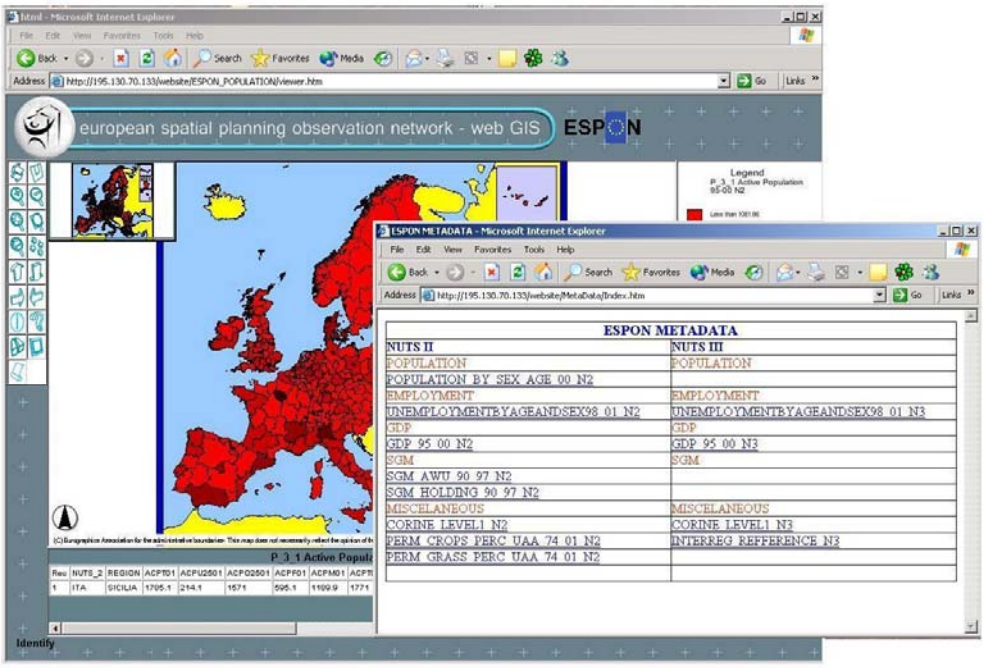
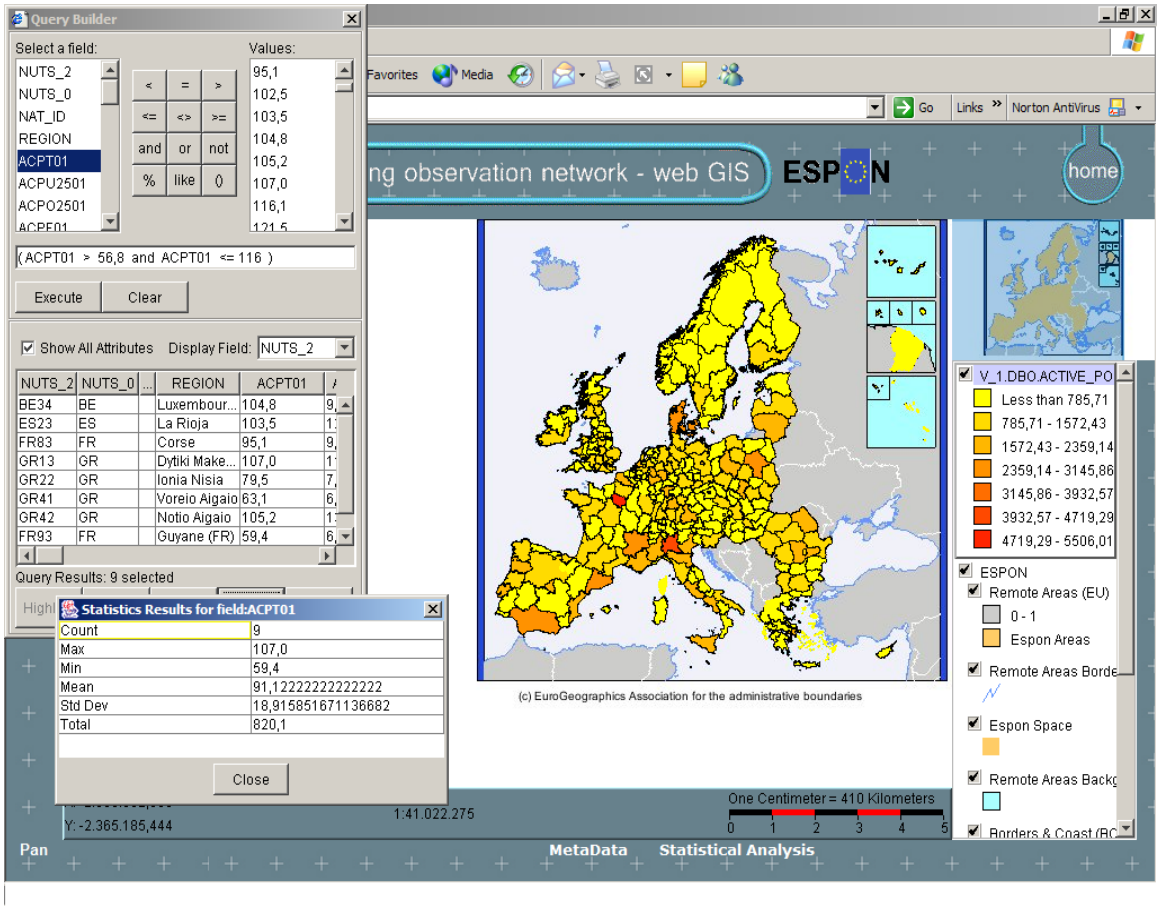


Figure no 11: Java Viewer (Query Builder-Statistics-Classification)



5.4 ESPON data base

5.4.1 Content and future organisation

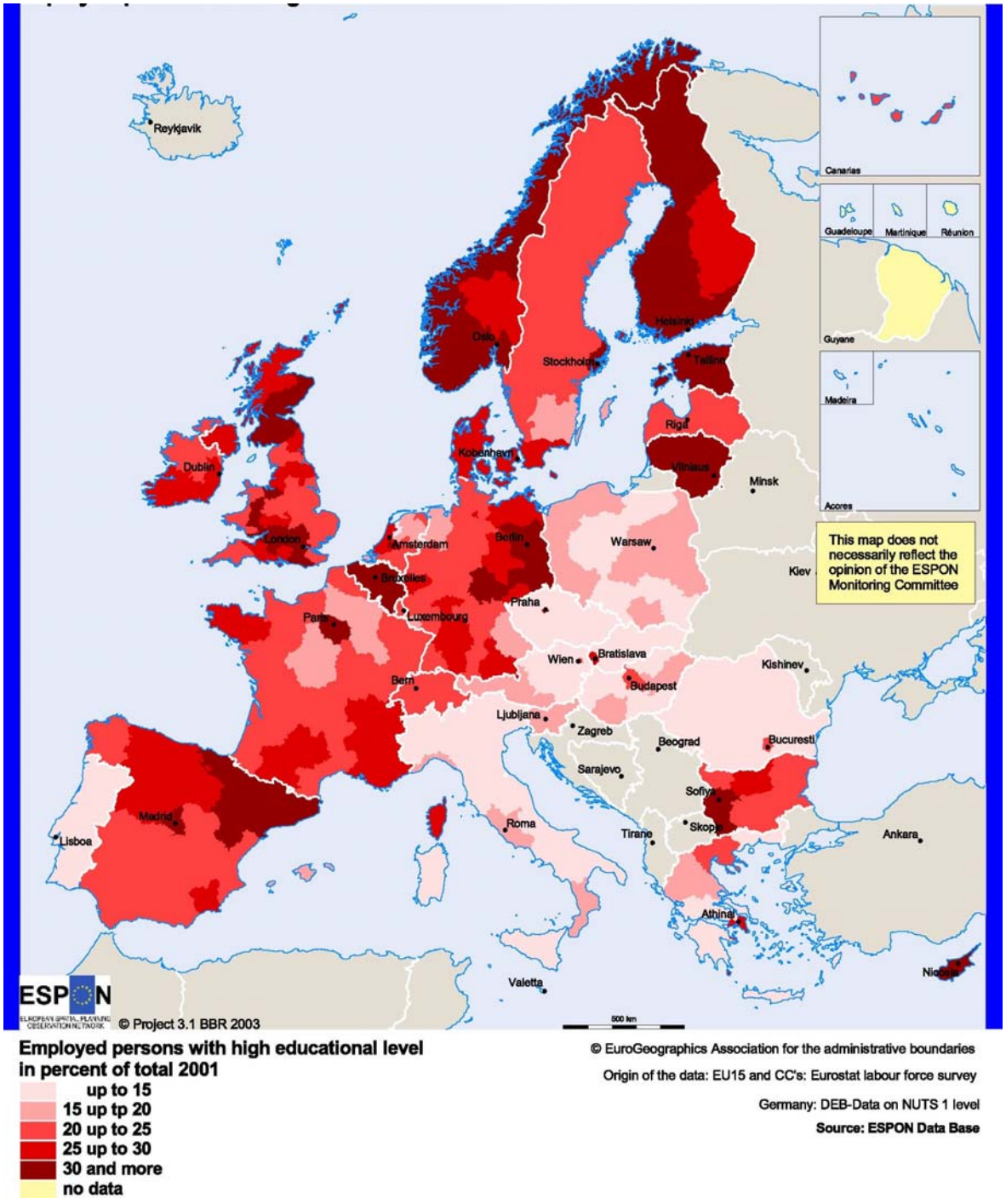
With the data and indicator connected results made available by the TPG's so far the ESPON data takes shape and includes by now around 120 tables with data, indicators and derived spatial classifications and regional typologies (not taking into account the meta data files).

Not yet completely covering the whole ESPON territory on all regional levels within all tables great efforts have been done by all the TPG's to overcome the sometimes difficult regional data base of Eurostat. In some themes of the data base further work has to be done to proof availibilty and harmonisation of comparable national data. As it turned out there will be e.g. problems having regional Labour Force comparable data for Switzerland before the year 2002, because the comparable Swiss Labour Force Survey include regional data only since this year. Estimations of according figures out of national statistics must be checked in case.

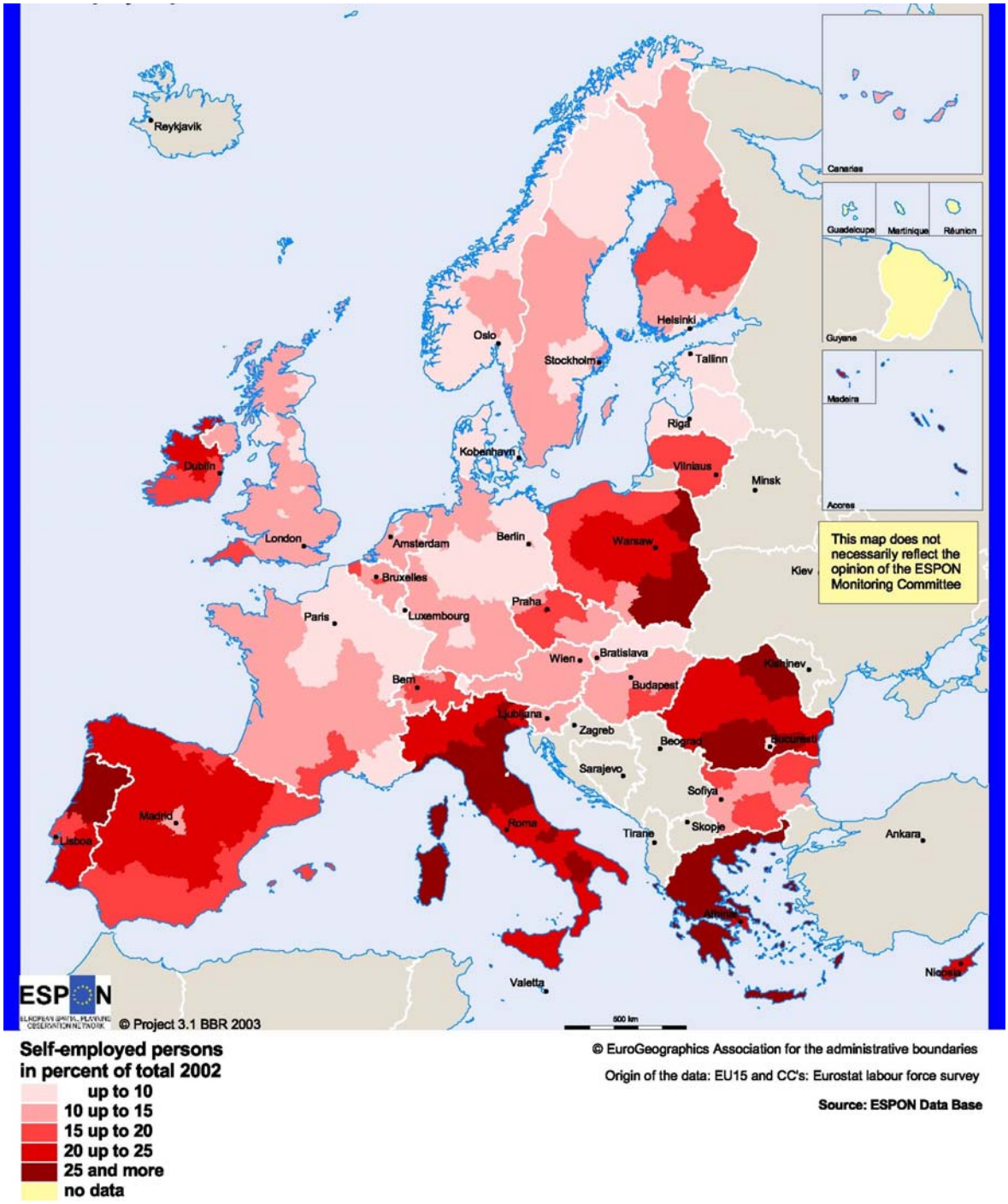
In the process of data collection according specific demands of the TPG's the ESPON2006 programme started a successful attempt deepening the regional statistical base by exclusively for ESPON generated regional data from the Labour Force Survey. Data worth thinking of being transferred into general statistical coverage of Eurostat in future. The data cover the following themes:

- Composition of private households
- Employment by age group and nationality
- Population, aged 25 to 59, by age group and educational attainment level
- Employment by age group and educational attainment level
- Employment by hours usual worked
- Unemployment by age group and educational attainment level
- Employment by professional status
- Employment by economic activity
- Employment by occupation

Map no 5: Employed persons with high education

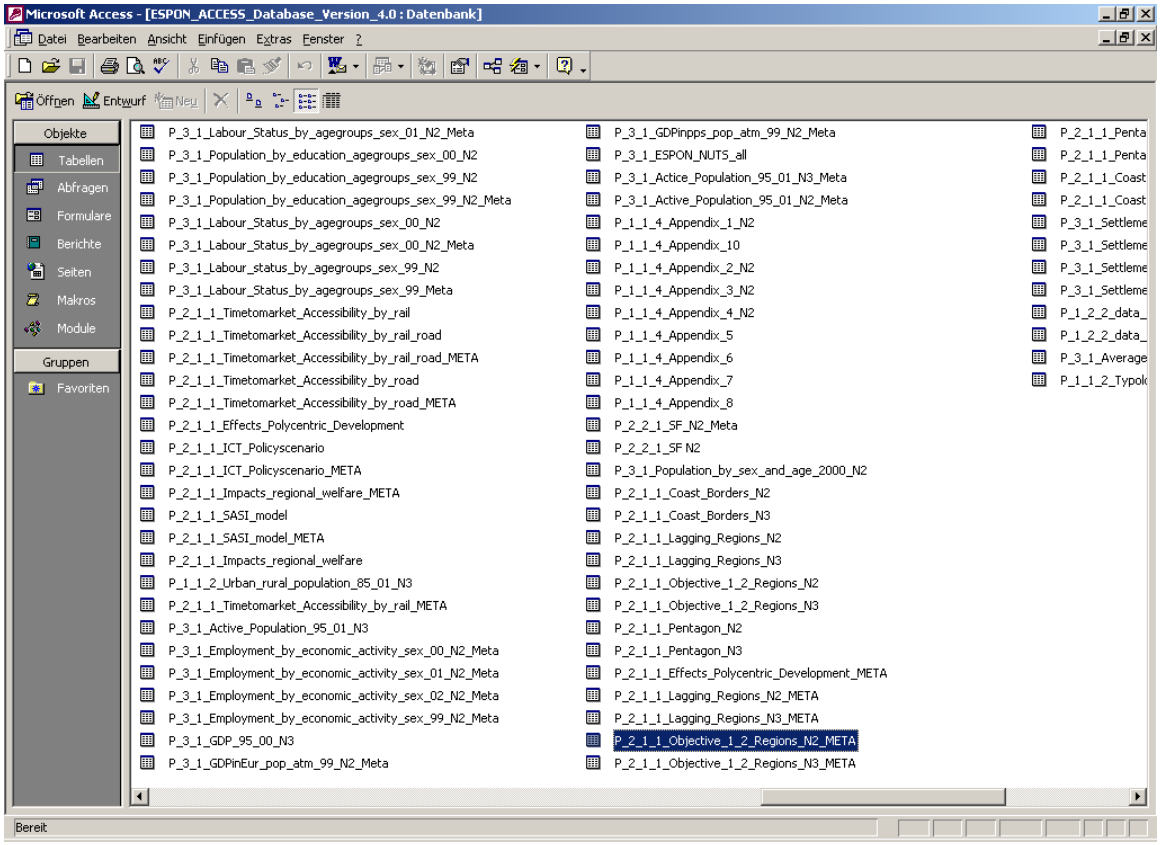


Map no 6: Self-employed persons



The organisation of the data base is up to now and until all data have made available TPG - related, which means that the files are included and listed according the TPG's responsible.

Figure no 12: Table window of Access data base



It is quite obvious that this cannot be the final structure of the data base. Within the Project 3.1 the discussion results in a thematically structured data base according to the Data Navigator categories which are again broadly orientated on the main chapters of the ESDP.

Additionally separate tables will indicate the core indicators and typologies for fast and easy access to the main characteristics of the regional structures and developments and selected analytical and reporting tables resulting from queries within the Access data base.

5.4.2 Integrated ESPON information system

The regional information systems in ESPON consists at the very moment of different components not yet connected:

- the ESPON Access Data Base
- the ESPON Map Kit
- the tools for spatial Analysis
- the Hyperatlas
- the WEB based GIS

An integrated system must guarantee connections and nodes between the single parts. Furthermore a component for the generation of tables (just to mention the need producing tables in special format like those of the DG Regio table formats) or even reports (including text, tables, graphics, maps) is missing.

As it turned out the Access data base can suit as central data port into the system. With the help of a data base connection a direct link to the ESPON Map Kit (more easily with the use of the ArcView 3.x follow up ArcGIS 8.3) and a direct combination in a Geo Database is possible.

Using report and query facilities and connection e.g. to calculation software like EXCEL in combination with in here defined standard tables (like the DG Regio ones) a fast on demand production of results and automatic updates according to the data base data will be possible.

To ensure in system migration the use of Access should be guaranteed in WEB-GIS as well as in the other components for spatial analysis and Hyperatlas. Input and output conformity must be proved, e.g. the export of Hyperatlas results in GIS conform file structures.

6 Outlook

Chapter 6 reports on four activities of ESPON 3.1 which have in common that they all are related to future work that will have to be tackled within the ESPON programme during the next years. Sub-chapter 6.1 gives some recommendations on the future project ESPON 3.2 ("policy scenarios"). These recommendations have already been part of the discussion about structuring ESPON 3.2 and setting up the terms of reference. Sub-chapter 6.2 gives some first ideas and results about the topic "Europe in the world". A more detailed report on this topic is added as Annex B. Sub-chapter 6.3 reflects the question of how to co-operate with Interreg III B and III C and exploit mutual benefits between ESPON and Interreg. Sub-chapter 6.4 introduces some ideas of integrating and consolidating ESPON results, data and tools in a Policy Support System.

6.1 Recommendation on political scenarios towards ESPON 3.2

One task of 3.1 was to deliver some ideas which could provide useful guidelines for the elaboration of political scenarios and should help the Coordination Unit and the Managing Authority of the ESPON Programme to propose sound and efficient guidelines in the terms of reference to the tender of ESPON 3.2. We suggested that the elaboration of policy scenarios should be organised along 4 strands:

- Trend analyses *(Strand 1)*
- Analyses of forces shaping the European territory *(Strand 2)*
- Elaboration of scenarios *(Strand 3)*
- Validation of policy scenarios *(Strand 4)*

6.1.1 Strand 1 : Synthesis on main trends shaping the European territory

The first step of the analysis is the realisation of a synthesis of main trends shaping the European territory at various scales of time and space. Various sources of information can be used: the results obtained by the various ESPON TPG's under Priority 1 and previous results like the Study Programme on European Spatial Planning; various studies carried out under Interreg IIC. The ESPON database elaborated by the TPG ESPON 3.1 would also be a valuable input if it is sufficiently harmonised and coupled with spatial analysis and cartographic tools like the ESPON Hyperatlas or the Web-Gis. Nevertheless we can suspect that those inputs will not be sufficient because most activities actually

elaborated in the framework of the ESPON programme are based on databases with very narrow spatial and time focus.

- **The time focus of ESPON** research is actually limited in most cases to the very brief period 1995-2000 because it is difficult to build databases on accession countries before 1996 and because of recent changes in the Nuts division. Generally speaking, the Terms of Reference of most ESPON TPG's requested the scientists to produce a picture (photography) of the European Territory in 1999-2000 rather than an evaluation of trends (film). In fact, it is possible to obtain long-term trends for basic variables like population, accessibility or economic activity but it implies the development of a specific methodological work package using efficient statistical methods and spatial analysis tools for the reconstruction of coherent time series and harmonised maps.
- **The spatial focus of ESPON** actually limited to EU27 + 2 in all ESPON TPG's is sufficient for the realisation of a picture of European Territory but is clearly not adapted to a long term approach of the trends shaping the European Territory. The construction of a database on the world situation is absolutely necessary for scenario writing because Europe is not an isolated system. A specific work package on "Europe in the World" should be included in order to provide evidence on the global dynamics at world scale and at Pan-European scale (relation with Eastern Europe, Northern Africa, Middle East…).

6.1.2 Strand 2: Identification of main forces presently shaping and likely to shape in the long range the European territory

Scenario writing in spatial development makes the identification of major forces shaping the European territory necessary. Not only the forces underlying the trends identified are of importance, but also the factors of change which might induce new dynamics and even trend reversal in the medium and long range. Various types of forces have to be taken into account:

- Economic forces, including those related to integration and globalisation;
- Social and cultural forces including factors of equity, identity, life styles, demographic evolution, migrations etc.;
- The impact of policies at various levels and in various sectors.

As far as the last point is concerned, the present and potential impacts of Community policies are of primary importance. The work realised by ESPON TPG's under Priority 2 is a major input. It can provide a precise idea of the efficiency and/or lacks of actual sectoral policies. The elaboration of common methodologies like the *Territorial Impact Assessment* can certainly be a key for the construction of a systemic approach of policy scenarios where unexpected negative or positive results can appear when two policy proposals are combined on a same territory. But it is obvious that ESPON results will not be sufficient for the purpose of scenario building and it will be necessary to take into account numerous other inputs provided by various expert groups (CPMR, …) or political bodies (Committee of the Regions, SUD, ….).

Besides, some interesting inputs can be inferred from the **trans-national level**. In the Interreg IIC zones a new way of thinking the spatial development is emerging. It is based on the common points and interests within the trans-national area. In some cases, this new practice has materialized in spatial visions. These visions can be considered as test cases of European planning at this scale. They can be of great help in writing scenarios in European spatial development.

In addition, the **national planning visions** are also significant and need to be considered. Spatial planning in Europe remains mainly within the national scope; moreover the *national planning cultures* highly differ. Before designing European scenarios, research needs to be carried out on this topic, in order to highlight the different ways in which European policies are implemented. This point is fundamental as it is a condition for making the European scenarios pragmatic and understandable in the whole European Union.
In this topic, some inputs will come from the TPG 2.3.1 ("The application and effects of the ESDP in Member States, 2004-2006") and from the ECP network, to the extent that each ECP represents national planning administrative and research world from his country.

6.1.3 Strand 3: Elaboration of scenarios with a cross thematic and territorial expertise

Several types of scenarios could be elaborated:

- Trend scenarios (one or more), which will show the territorial impacts of present trends and already identified factors of change on a long period of time in a context of weak policy intervention;
- Contrasted scenarios. These could comprise:
  - Negative scenarios, showing the territorial image of what is not desirable and the factors underlying such an evolution. These scenarios may not necessarily be in relation with trends, but should constitute persuasive images arguing for more intense and coordinated policy approaches (the concept of negative scenarios comes from the philosopher Jean-Pierre Dupuy, cf. *Pour un catastrophisme éclairé: quand l'impossible est certain*, 2002, ISBN 2020538970);
  - Policy scenarios, showing the territorial impacts of improved and coordinated policies in various fields affecting the spatial development.

According to the terms of reference of the future TPG ESPON 3.2, methods of building scenarios and results should be presented in a way that contributes to mutual understanding by administrators, politicians and the wider public. Simultaneously, the scenarios should consider the views of all member-states and candidate countries, in particular as far as working hypotheses are concerned. The method applied should integrate these views.

Starting from the previous inputs (*Strand 1 and Strand 2*) it will be necessary to elaborate the scenarios in a very efficient way, which means in practical terms that a very small group of experts should be in charge of the elaboration of scenarios. Our proposal would be to introduce a division of work between two groups of experts with different status:

- **Thematic Experts** (TE1 … TE5). They would be in charge of a specific field of evolution (economic changes; social and cultural dynamics; external impacts on Europe etc.) and/or of a policy issue or objective as defined by the ESDP : polycentric structure, parity access to infrastructure, demographic trends, economic competitiveness, social cohesion, etc. These thematic experts

should be a very small group with very high level of competence in their respective fields. They should give the global orientation for the work of the "Regional Experts".

- **Regional Experts** (RE1 … RE10). They are specialists from a particular national or trans-national area. They would be responsible from the transmission of specific information on trends and of policy proposals or elements of scenarios to thematic experts and will offer a specific view on possible contradictions between sectoral policies at their specific level. It is important to precise that some of these "Regional Experts" could be specialists from external areas like OECD or neighbouring countries of Europe.

6.1.4 Strand 4 : Validation, valorisation and use of scenarios

There are many possibilities for the construction of scenarios and for their use in policy applications and, more generally, in the political debate. Some indications are proposed here on potential interesting approaches which could be developed in ESPON 3.2 or after.

- **The Delphi Method** proposed by Linstone & Turoff (1975) is a specific method which can be used for **the search of consensus between experts.** Starting from a set of inputs concerning spatial trends (STEP 1) and possible policy actions (STEP 2), the experts are asked to give their opinion on future trends according to various situations of (i) non intervention , (ii) pursuit of previous policy actions, (iii) new political actions to be defined. The answer of experts to the first "round" are then compiled and summarised in a report which is transmitted to all experts. They are then supposed to propose new answers in the next rounds, taking into account the opinion of the other experts. After some rounds (generally 3 to 5) it is possible to examine if the answers are converging or diverging and to consider various subjects which may help to clarify the debate and can orient further research.
- **The Open Coordination Method** has some common points with the Delphi Method but is not necessarily based on the search of consensus but rather on the confrontation and combination of political approaches, in order to create coherence.

6.1.5 Conclusion: It seems not reasonable to concentrate all those tasks on a single TPG

Each of the 4 strands presented above is an important dimension in the elaboration of policy scenarios. The question remains however open in how far it is realistic to merge all these strands in the same TPG. A pragmatic possibility could be to isolate some work packages in the context of individual TPGs, for instance:

TPG 3.X (new): ESPON Database, cartography and spatial analysis tools.
This TPG derived from TPG ESPON 3.1 would be in charge of the elaboration of a harmonised ESPON database through space and time. It would also propose spatial analysis tools and models which can help in the elaboration of policy scenarios. This TPG should elaborate a dictionary of ESPON models and tools, as it was proposed and agreed in Crete.

TPG 3.Y (new): Europe in the world
This TPG would develop specific databases, tools and concepts for the analysis of the position of Europe in the world, definition of influence area (trade, migration, …), accessibility, etc. More details on the possible organisation of this topic are provided in the next section.

6.2 Europe in the world

A first set of results has been produced during summer 2003 on Europe in the world, which are available in a separate report called “Twelve Maps … toward an ESPON vision of Europe in the world” (see Annex B). This report emphasises two very important points for the ESPON programme:

- **The elaboration of an efficient statistical and cartographic framework for future ESPON research on Europe in the world** is a very important question because the choice of a geographical projection, the choice of an aggregation level of states have a very deep influence on the perception of spatial dynamics and interactions which links Europe to the world. The report demonstrates that the ESPON programme should not use classical map projections which give a false impression of European “centrality”. Moreover, the ESPON programme should not use the classical divisions of the world in

Continent and should adapt the aggregation of regions proposed by the United Nations to the specific needs of European policy (see Map no. 7).

- **The delimitation of Europe's influence area according to various matrixes of flows is of crucial importance for the elaboration of long term strategies**. Actually, the research developed in ESPON 3.1 are limited to air traffic and trade flows but it should be necessary to combine it with other criteria like tourism, migration, cultural expenditures, etc. Those measures of European influence (like % of flows directed toward Europe) can be combined with other indicators of development (urbanisation, GDP/inh, Age structure, etc.) in order to define what are the human and economic resources of peripheral regions connected to Europe and which kind of partnership should be elaborated according to the specificity of each area. As a very preliminary example, the Figure no. 12 proposes a factorial analysis of the 16 ESPON world regions which shows the combination between their level of development (Axe 1) and their degree of connexion to western Europe (Axe 2).

Map no 7: Proposal of a World division in region for ESPON research

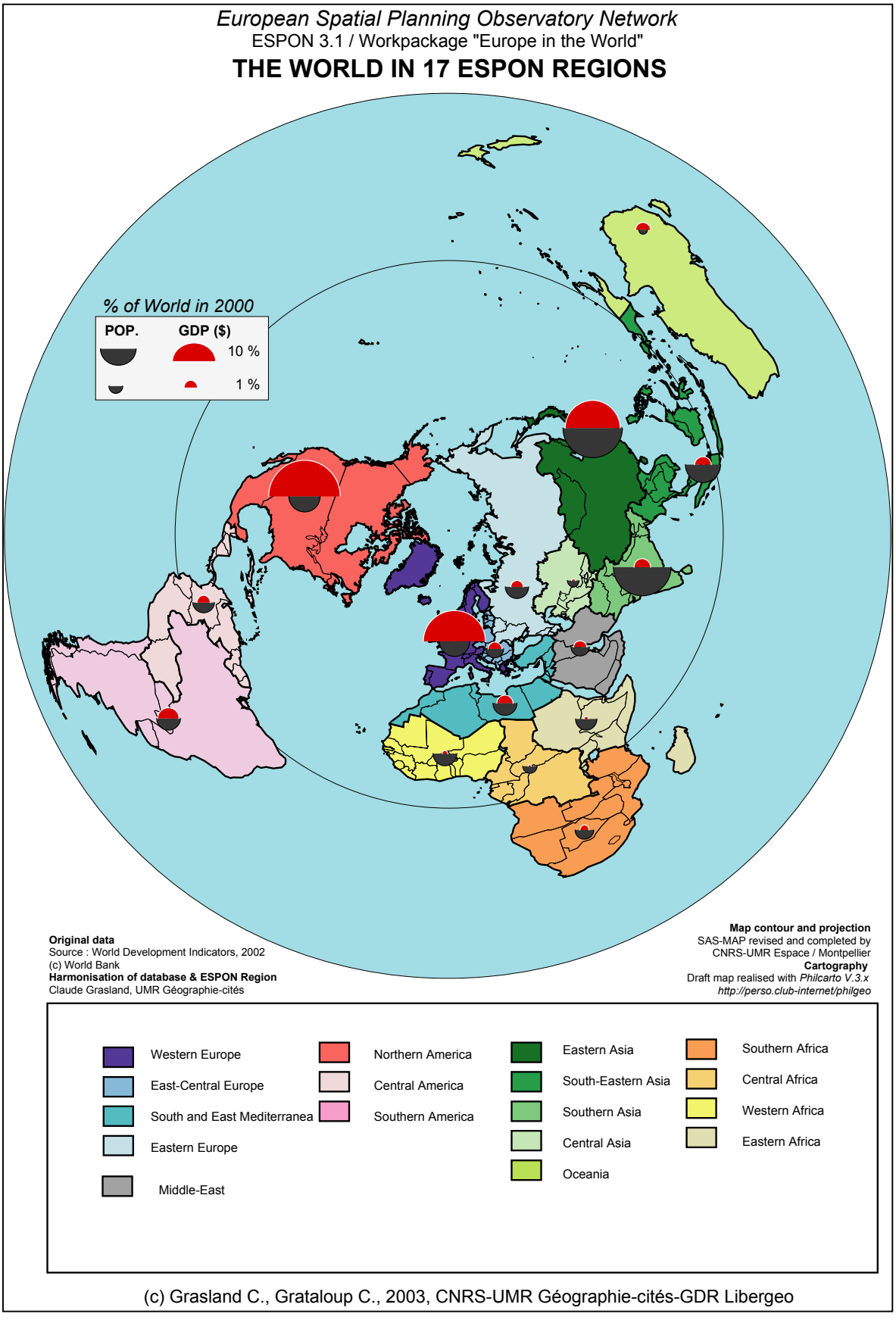


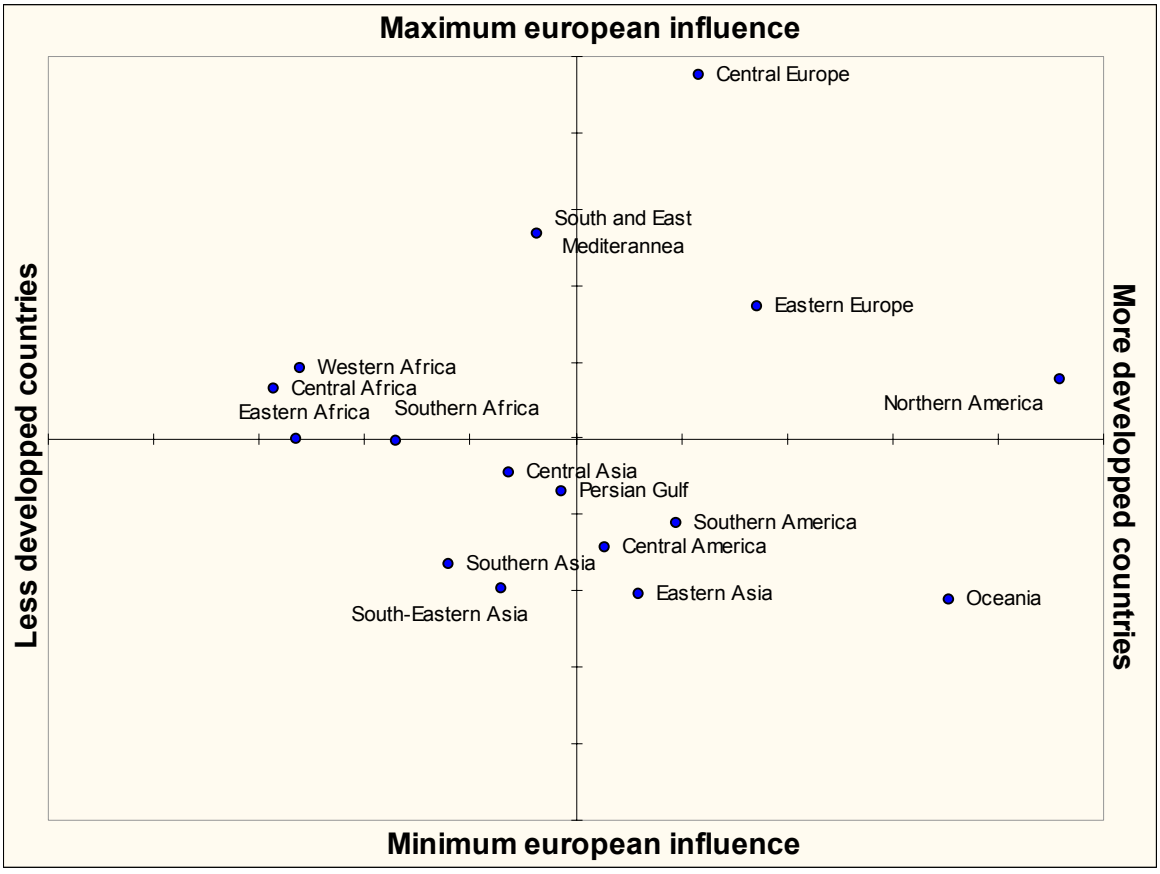
Figure no 13: Preliminary synthesis on "Europe in the world"

(a) Correlation of variables with factors

VARIABLES (in 2000)	Factor 1 (46.8%)		Factor 2 (30.4%)	
	Coord	Contrib.	Coord	Contrib.
(A) Interaction with Europe				
Mean aerian distance to Western Europe	0.177	0.672	-0.834	22.923
Air flows toward W. Europe (% of flows)*	-0.312	2.082	0.913	27.446
Air flows toward W. Europe (per inhabitant)	0.616	8.115	0.500	8.224
Trade flows toward W. Europe (% of flows)*	-0.341	2.485	0.812	21.698
Trade flows toward W. Europe (per $ of GDP)	-0.495	5.233	0.669	14.738
(B) Structural situation				
% of 0-14 in population	-0.874	16.309	-0.118	0.460
% of 65 and more in Population	0.838	15.019	0.196	1.260
% of urban population	0.824	14.526	0.218	1.572
GDP/inh in pps	0.958	19.598	0.134	0.592
CO2 emission per inhabitant	0.864	15.962	0.182	1.089

* the percentage of flows is calculated after exclusion of internal flows of the world regions.

(b) Position of world regions



6.3 Approaching Interreg and its contribution to territorial cohesion and polycentric development

In the Second Interim Report, we have outlined possible activities regarding the cooperation between ESPON and Interreg. Mainly two fields of activities have been identified:

- networking and integration of Interreg activities and results, and
- assessing of Interreg co-operation regarding their contribution to implementing the ESDP, in particular the creation of new trans-national regions.

In co-operation with the ESPON Co-ordination Unit, it has been decided to wait for the clarification of the role Interact can take regarding the networking and integration of ESPON and Interreg IIIB and IIIC projects.

In the meanwhile first steps have been undertaken to develop an approach for assessing the contribution of Interreg co-operation to the creation of transnational European co-operation. For this, a case study approach has been developed, focussing especially on the North-West Europe trans-national region. Furthermore, contact with other ESPON projects (ESPON 1.1.1, 2.2.1) doing research on spatial effects of Interreg has been established.

For the steps ahead, the main part of the work is linked to the analysis of Interreg projects.

Through a thorough studying of the projects' files, we especially identify:

- the project's theme (e.g. economy, environment, accessibility),
- the project's spatial scope (does the project apply only to some cities, to a part of the trans-national area or to its whole?),
- the partners' types (regional or local authorities, firms, NGOs, etc.), and
- the effectiveness of trans-national regionalism.

The three first categories are inferred from the ESPON 1.1.1 methodology. The last one is specific to our study. It means a distinction between the projects focusing on co-operation and the challenges of joint and common action. Working on joint tasks focuses mainly on trans-national challenges and solutions.

The results will be presented in the final report of ESPON 3.1. The further implementation of this work package within 3.1 depends on the developments and decisions regarding the co-operation of ESPON and INTERACT and the role Interreg will play in the coming ESPON 3.2 project.

6.4 Integrating ESPON information and knowledge tools into an ESPON Policy Support System.

ESPON is a highly decentralised process, with many different networks of universities, research institutions, consultancies and independent experts working to provide sound scientific support to European policy makers at a critical moment in the construction of the European Union.

One of the basic goals of ESPON 3.1 was to propose and divulge basic common data sets and keys for harmonisation and standardisation within the ESPON Community and to deliver the harmonised material, maps and indicators to the Commission for consideration in the Third Cohesion Report.

The next phase of ESPON 3.1 after September 2003 is to move towards consolidating all existing material and facilitating means for this information to be accessible to the whole ESPON Community and the Commission services. The consolidation of information and knowledge generated by ESPON in such a service-oriented approach is what is known as a Policy Support System.

6.4.1 What is a Policy Support System?

The need for a Policy Support System comes from two contradictory demands by policy makers: *more advanced* and yet *more user-friendly and just-in-time* decision-making support from experts and scientists.

On the one hand, as problems increase in complexity, policy questions have more difficult answers. Policy-makers require sound advise from scientists and experts: reliable and objective information and convincing evidence that can be submitted to citizens, interest groups and other institutions. Scientists then have to assemble precise databases, use state-of-the-art theories and models, and take advantage of computers with faster calculation and larger memory capabilities to build up

ever more information systems, forecast and impact models and evaluation methods. Even if scientists and experts cannot always reach conclusive answers, the use of advanced analysis certainly improves decision-making processes significantly.

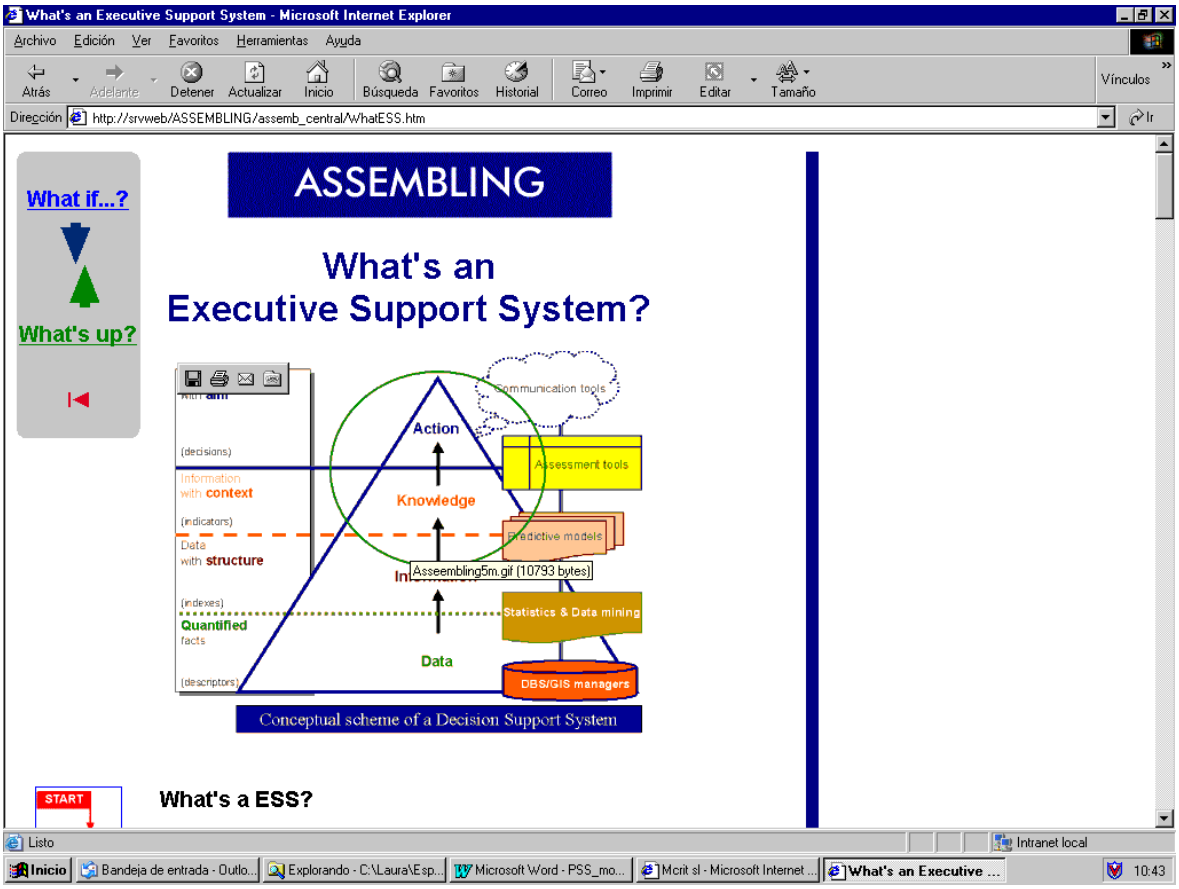
On the other hand, as a result of the mass dissemination of friendly ICT, decision-makers and citizens are beginning to feel less intimidated by computers and sophisticated software that can run large databases or generate forecasts. Many decision-makers are already beginning to ask full disclosure of computer models and even friendly access to run the models themselves. Computer tools could then become learning tools in the hands of policy-makers, who could then simulate interactively the impact of alternative policies.

One possible strategy for resolving the conflict between *more advanced* and *more friendly* and *just-in-time* support is developing *corporate intelligence* inside governmental institutions by introducing efficient management of information and knowledge. The first strategy to move in this direction is to continuously consolidate and formalise disperse information and knowledge generated internally. This can be done by creating virtual libraries with synthesis of studies, storing databases in compatible formats, creating intelligent search-engines, etc., and linking it all together into open systems, driven by user-friendly and customised interfaces and accessible to any interested policy-advisor or policy-maker from his/her computer desk. The open system should integrate interactive explanatory tools of use for communication and educational purposes, but should also provide access to multiple remote advanced information and knowledge systems developed and maintained by universities, research institutions and consulting firms that can answer a number of legitimate policy-questions.

However, clever computer systems that interface end-users and improving computer tools is not sufficient. The key to close the gap between policy makers and state-of-the-art scientific models is creating an environment where scientists, experts and policy makers interact personally and can understand each other.

The SPESP is a success story in which information and knowledge generated along the process was actually gathered, harmonised and distributed. Today, the

project virtual library including databases of policy-indicators, reports, interactive mapping facilities etc. is still publicly available.



Example of a Policy Support System diagram (prototype from ASSEMBLING Research in www.mcrit.com/assembling/assemb_central/WhatESS.htm)

6.4.2 Technical description of a Policy-Support System

A Policy-Support System may consist of the following modules:

User interface: Web-browser technology with links to open multi-software systems on LAN/WAN and advanced transport-specialised Internet GIS/Mapping visualisation utilities, highly customised. The user-interface or communication module of the system has to be understood as an “Executive Information System” for top policy assessment and project appraisal.

Information base: Assembling existing information into a core harmonised database. A number of policy meaningful indicators (generated by forecasts or evaluation models) will be defined and included in the information system. The information base has to answer “What’s up” questions and, together with the model base, “What if” questions (impacts of alternative policies into the policy indicators). Standard data formats are needed to integrate disperse databases.

Forecast base: Forecast models are computer programmes organised as a set of algorithms based on scientific theories able to predict the behaviour of the system under different exogenous scenarios and alternative policy decisions. Models can be developed sector by sector in a reductionist approach, but eventually need to be integrated to allow for interactions between different sectors and scales. Models must be transparent and interactive to serve as actual knowledge-tools and make users understand their system behaviour. Defining dontologic rules and quality control procedures will allow forecast tools to be in line with the system.

Evaluation base: Evaluation and backcasting models have to be integrated into the knowledge-base, and heuristics, rules of thumb, comparative case-studies, in-depth studies and other sources of knowledge need to be integrated into the final decision. Within a knowledge-base a directory of "hot policy issues" (e.g. derived from surveys, mass-media analysis and other monitoring exercises) can be included as a way to formalise the policy questions the systems must respond to.

The major risk of failure of any Policy-Support System would be to work from an abstract, top-down, idealistic or "scientifically-closed" approach, removed from real institutional, behavioural and organisational aspects. In the ESPON case this is not likely to happen since the PSS will mostly be based in a process of integration and communication of information and knowledge produced by multiple sources.

6.4.3 First questions for the development and implementation of a European Spatial Development Support System

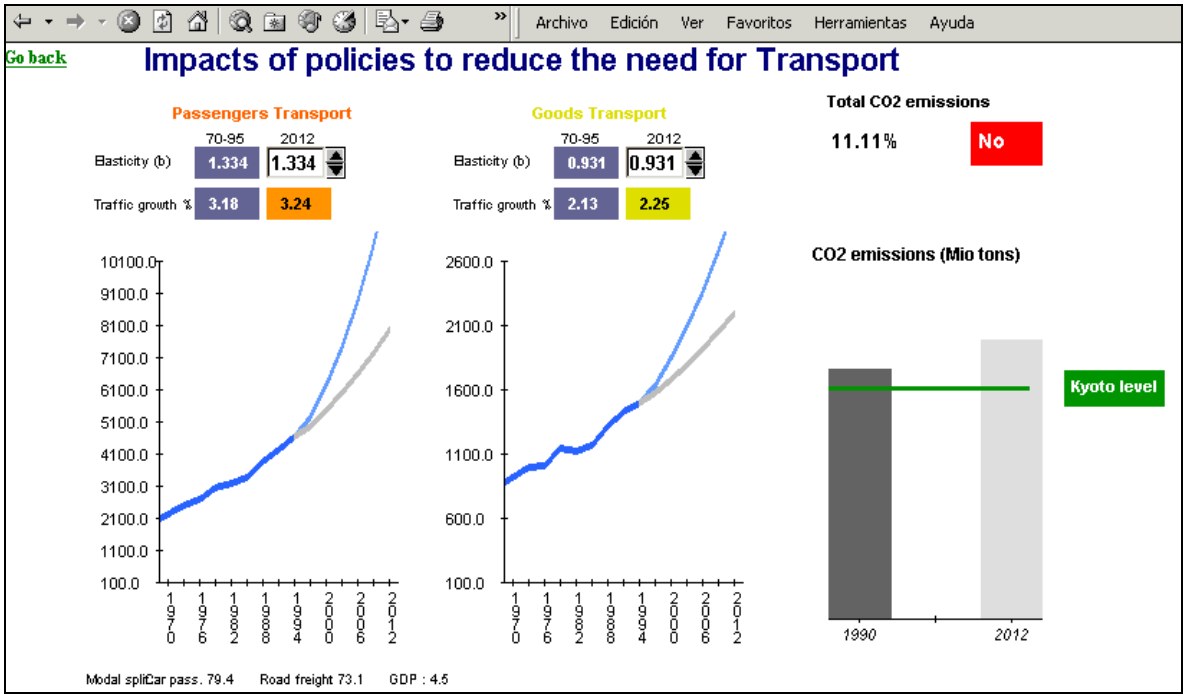
ESPON 3.1 has already taken important steps to integrate the disperse information and knowledge generated by the ESPON process into a system: data gathering; documenting and making datasets available to all TPGs; programming new web mapping facilities and updating the SPESP virtual library; defining a standard database format to be used for data exchange between TPGs; endorsing and adjusting the SPQR[20] as a mandatory metadata description for models and algorithms used to compute indicators; organising cross-discussion among TPGs and integrating existing information and knowledge into synthetic reports.

[20] Outcome of the spotlightsTN research, 5th European Framework Programme

But this is not ambitious enough. The ESPON project needs to set up a PSS that includes: a single repository with validated databases, a number of models to compute important indicators, mapping facilities, virtual libraries with studies, case-studies, reference documents, directories of experts and institutions, and a friendly web interface to allow remote users to take advantage of non confidential material.

The need and feasibility of a number of initiatives are worth considering:

- A portal website with links to other TPG webs with their own project material.
- In addition to policy indicators, TPG raw databases to be integrated into the system or become somehow available.
- Data storage and retrieval through the Internet and Internet mapping services.
- Availability after ESPON of computer models used by TPGs, and if so, for what type of analysis, and under what commercial conditions. Creation of a directory of models and modellers with the specific services they can provide.
- Interactive simulators available on the Internet focusing on key policy questions and scenarios, using the knowledge gathered.



Sample of interactive simulator on the Internet (www.mcrit.com/model_kyoto) :
Are we going to comply with the Kyoto agreement on reduction of CO2 emissions?

6.4.4 Proposal for an ESPON Policy Support System

TPG reports and other deliverables can currently be found in the www.espon.lu website maintained by the ESPON Co-ordinating Unit. Ideally, the ESPON-PSS should become accessible from there and include links to other project websites, where they exist, as well as to integrated material such as consolidated datasets for downloading, interactive tools for visualisation, geographic and spatial analysis, and other references such as standard data formats and map layouts, templates for reports and website developments, etc.

In future ESPON projects, the development of a public website - restricted to the ESPON Community, according to a template to be defined by ESPON 3.1 - will be suggested to bidders. The project website will contain all relevant outputs from the project not included in the reports, as well as articles, studies and other reference material, to be developed further on the basis of the needs of each project.

The central part of the ESPON-PSS website will be composed of six modules:

1. Data Navigator: directory of data sources in Europe (under development)
2. Data sets to be downloaded
3. Gallery of maps to be downloaded
4. Tools for interactive desktop mapping (under development)
5. Tools for GIS (under development)
6. Tools for Spatial Analysis (under development)

The SPESP website serves as reference for the modules 1,2,3. Modules 4,5,6 are all currently under development in ESPON 3.1, targeting three sets of potential users. Desktop mapping (4) targets novice users aiming to visualise data graphically before downloading data sets or produce images for presentations. GIS (5) includes all conventional GIS facilities and provides maps according to the ESPON layout design standards, ready to be included into ESPON official reports. Finally, Spatial Analytic tools go beyond regular GIS facilities by providing advanced tools to explore complex issues such as spatial discontinuities, grids and others. These three modules, together, will provide for comprehensive state-of-the-art tools for a variety of users and purposes.

In addition to these core elements, future ESPON projects should develop policy-simulators to help users simulate potential impacts of European policies, and forecast tools based on statistical or explanatory models. ESPON 3.1 will provide a sample and standards and recommendations for these knowledge-based tools.

7 Further activities of the TPG 3.1

This chapter gives an outlook to the further activities of the TPG 3.1 in general and specifically with regard to the different topics. In twelve month, October 2004, the TPG 3.1 has to submit its final report. Until that time the TPG has to fulfil different tasks and to make progress in its work.

General outlook for the TPG 3.1 – the next 12 month

For the next twelve months the timetable shows different activities and tasks. It may seem that most of the work is done already, because of the very advanced results at this time. But its not the time to twiddle the thumbs.

Field of work	***Title/ Content***	***Period of time***
General	Preparation/ support and assistance ESPON Seminar 4 and 5	May 2004 and October 2004
General	Preparation/ support and assistance TPG Lead Partner Meeting	February 2004 (estimated)
General	Supporting the co-ordination activities of the ESPON CU	Continuous process
General	Co-ordination Meetings with the ESPON CU and the DG Regio	Regularly
General	Analysis of the different Interim Reports	March / April 2004
General	Analysis of the final reports of the ‚1st round TPGs'	August/ September 2004
General	Analysis of the different Interim Reports of the TPGs from the 2nd, 3rd ... rounds	August/ September 2004
General	Delivery of the own final 3.1 report	October 2004
Policy Recommendations	- analysis of further reports - different workshops towards soundly based policy recommendations (incl. TPG Leadpartner, MC-Members...)	1st and 2nd half of 2004 August 2004
Policy Recommendations	SWOT/ RCE - further development - final results	
Policy Recommendations	TIA - description of methodological approach - instruction manual - final results	October 2004
Database/ GIS	Completition of the ESPON GIS - ready for operation and handover	September 2004
Database/ GIS	Completition of the Hyperatlas ready for operation and handover	September 2004
Database / GIS	Completition of the ESPON Database	July 2004
Design and development	Policy Support System - first beta version - up-gradeable final version	 1st half of 2004 October 2004
Design and development	"Europe in the world"	October 2004
Design and development	Specific outlook on "Approaching Interreg and its contribution to territorial cohesion and polycentric development"	October 2004

Preparation of special meeting	Meeting with east European experts (Seminar, work shop...)	mid-2004
Preparation of special meeting	Work shop on ESPON results with political, scientific and practice experts	end of 2004
ESPON 3.2	Co-ordination meetings - support (with regard to administrative tasks) - assistance (with regard to administrative tasks) - interchange	various / until October 2004

Specific outlook on policy recommendations

For this reporting time no final report was required from the TPGs. Therefore the given first tentative policy recommendations were the base for the work of the corresponding chapter of this report. For the final report it is envisaged to provide precise policy recommendations. On the one hand the reports of the different TPGs should be part of the base for this work. On the other hand expert discussion and work shops are planed. Experts are the members of the ESPON MC, the DG Regio, other personal expert staff from the EC and different ESPON project partners. Final ESPON policy recommendations should have a maximum sound base.

Specific outlook on SWOT/RCE and TIA

As mentioned in the corresponding chapter, the work on the SWOT/RGE is not finished. The SWOTs by the TPGs are presently not all fully filled in and completed. The level of detail is varying. Until the mid of 2004 it is expected to receive all SWOTs completed. Only with the full filled in SWOTs and qualitatively high information the ideal can be reached. The chosen approach is highly ambitious. The RCE is an instrument which produces at the end interesting outcomes. The final result should be integrated into the work on policy recommendations.

The task on TIA is nearly fulfilled. The final result will include a description of the methodology as well as an instruction manual for further ESPON projects.

Specific outlook on the ESPON data base

Transfer of the data base from the TPG - orientated structure of the tables to a thematic structure according to the Data Navigator categories after all data have made available by all TPG's . The reconstruction of the data base will be

accompanied by final quality control and improving the data availability (missing values) through the TPG's responsible.

Extraction of additional separate tables which indicate the core indicators and typologies for fast and easy access to the main characteristics of the regional structures and developments and selected analytical and reporting tables resulting from queries within the Access data base.

Establishment of an integrated system that guarantee connections and nodes between data, GIS, Web-GIS, stools for spatial analysis and Hyperatlas.

Elaboration of a component for the generation of tables (just to mention the need producing tables in special format like those of the DG Regio table formats) and reports (including text, tables, graphics, maps).

Specific outlook on "Europe in the world"

This topic will presumably not be part of the final report, because it should be part the project 3.2, as it was planned since the start of the 3.1 project.

Specific outlook on "Approaching Interreg and its contribution to territorial cohesion and polycentric development"

As soon as the situation concerning the participation of the ESPON CU in Interact is clarified, an exact work plan for 3.1 can be decided. At present it is intended to include a case study on the Interreg North West Metropolitan Area in the final report.

Specific outlook on the ESPON Policy Support System (EPSS)

If the ESPON management agrees to the suggested approach and procedure, the TPG 3.1 would provide a first beta version of the EPSS in July/ August 2004. The mentioned version should be discussed by all concerned parties. An improved up-gradeable version could be a product for the final report.

Part C

Bibliography and Annex

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8.1 SWOT tables

Table no 6: Short summaries S, W, O + T, driving forces, typologies

Project	Strengths
1.1.1	• Polycentrism has strong and broad support. • There is still a relatively balanced network of small and medium-sized cities with polycentric development interpreted as a lifeline to them. • The strong nodes beyond the Pentagon are likely to be identified as pillars for European polycentrism for strengthening several larger zones of global economic integration. • The Pentagon itself is not monocentric but genuinely polycentric.
1.1.2	• A relatively strong urban-rural integration can be found in most of Europe. The extent of peripheral areas with low urban integration is thus quite limited. • The sphere of influence from the major cities covers also large areas outside the Pentagon.
1.2.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
1.2.2	• Competition dynamics accelerate the deployment of broadband technologies. • Digital mobile telephony networks became widely-spread all over Europe in a relatively short period of time even peripheral regions are adequately supplied. • The increasing importance of the Internet and its widespread availability improves the communications capabilities and the access to information at a regional level. • Polycentricity is supported by the development of the Internet infrastructure networks. • The information society is established at the regional level.
1.3.1	• Most hazards are well known. • Dangerous hazards are generally located in certain safety distances from larger settlements. • The safety driven rural location of some hazards lead to increased employment.
1.3.2	• A first attempt for a mapped ecological network does already exist (mapped) for Central Europe (Pan European Ecological Network). (page 52) • Accessibility and availability of natural areas is an important factor for the attractiveness of an area for settling. (page 52)
2.1.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
2.1.2	• Pockets of strong R&D performance in most EU member states and some new accession states. • Many peripheral regions feature as knowledge producing regions. • Increasing proportion of partners in Framework Programmes located in non-core areas. • Increasing importance being attached to R&D actions in Cohesion policies
2.1.3	• Increased agricultural output and productivity. • Encouraged farm and regional specialisation (and hence efficiency/competitiveness). • Stabilized markets and reduced risks to farmers and consumers. • Multifunctionality (European model of agriculture) if the CAP & RDP are specified accordingly. • Maintained farming in Less Favoured Areas.
2.2.1	• "The Structural Funds have a certain potential to contribute to polycentric development at the micro, meso and macro levels." (page 18) • „Generally, trends in national regional policy indicate a partial convergence with trends in European regional policies, providing scope for a greater coherence between policies at different scales in support of territorial cohesion." (page 18)

2.2.3	Results are based upon the first round SWOT evaluation! The second round SWOT evaluation is missing despite the delivery of second round SWOT analysis. • Structural Funds programmes are promoting the development of competitive cities, supporting the strengthening and diversification of the economic base, improving the accessibility of urban areas and promoting social integration and welfare actions. Structural Fund programmes are also supporting environmental improvements, including efforts to strengthen urban eco-systems, and promoting and protecting cultural heritage accessibility of urban areas and promoting social integration and welfare actions. • Structural Fund programmes are also supporting environmental improvements, including efforts to strengthen urban eco-systems, and promoting and protecting cultural heritage

Project	Weaknesses
1.1.1	• Overwhelming power and concentration of activities of few major urban regions in Europe. Development gap between urban regions in the central and peripheral regions of Europe e.g. the Pentagon vs. rest of Europe and/or EU15 vs. the candidate countries. • Transnational and cross border co-operation is often characterized by a one-way relationship (development gaps between European urban regions). • No universal European definition of Functional urban areas. • The weaknesses refer to the spatial dimension on a rather general level by mentioning the Pentagon, EU15, candidate countries, peripheral and central regions.
1.1.2	• In areas of low urban-rural integration the socio-economic performance of the regions is far lower than in the areas of high integration. However, national and regional variations are huge. • The frame conditions (present mainstream sectoral and spatial policy) for building urban-rural partnerships are far from being ideal and do not support the broader regional perspective.
1.2.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
1.2.2	• Significant territorial dimension to the deployment of new fixed wire technologies: rural areas more poorly served than metropolitan areas, especially with broadband services (DSL, cable modems). And still cities are preferred by investors. • General weakness of market-driven telecommunications networks from a territorial perspective: discrimination between metropolitan and rural areas in investment priorities because of critical masses, sophisticated consumers (in both business and domestic markets). • Rural and peripheral areas handicapped by being more expensive to serve, particularly for wire based networks. • Deployment of new telecommunications technologies is underdeveloped in the acceding countries. • 'Head start' position of firms to the north and west of the Alps over firms to the south and east, caused by increasing importance of e–commerce. • No linkage between telecommunications, transport or spatial planning.
1.3.1	• some hazards are known but not located • some regions pose a certain threat because of both high density of technology hazards and population • security legislations are sometimes not followed • concrete emergency plans are missing • data availability and comparability. • The context of identified weaknesses is hazards in general
1.3.2	Natural heritage seems to be of minor importance compared to other (economically relevant) land uses, such as urban development and infrastructure in planning decisions" (page 52)
2.1.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*

2.1.2	• R&D expenditure weakest in the southern and eastern periphery, innovation capacity weakest in peripheral regions • Private sector R&D highly concentrated in a small number of regions, increasing the dependence on public-sector activity in many countries, even in some of the strongest R&D performing regions. • R&D infrastructure concentrated in a limited number of countries and a limited number of areas within these countries • Framework programme participation still heavily weighted towards the most favoured regions.
2.1.3	• Export subsidies undercutting and destabilising domestic production in developing countries. • Failure to support farm incomes (aim of ensuring a fair standard of living for farmers). • Concentrated support on larger farms and encourages farm amalgamation. • Discouragement for mixed farming. • Encouragement of intensification and associated damage to environment and landscape, but perhaps this would have happened as a result of technological change even in the absence of the CAP.
2.2.1	• „The Structural Funds alone cannot deliver territorial cohesion, even if this becomes one of their explicit objectives.“ (page 18)
2.2.3	• Results are based upon the first round SWOT evaluation! The second round SWOT evaluation is missing despite the delivery of second round SWOT analysis. • Continuing decline of urban areas dependent upon vulnerable economic sectors, owing to the continuing globalisation of trade. • Reduction in a skilled and available labour force owing to an ageing population profile and migration to more prosperous economies. • Changing patterns of business location decisions may reduce levels of inward investment to environmentally weak areas, whilst low levels of business start- ups will fail to invigorate the local economic base. • Potential cumulative gains made by stronger economic areas. • Economic growth may lead to urban sprawl unless it is controlled. • Economic growth may lead to increasing social and economic disparities if the benefits of this growth are not equally distributed. • The introduction of the Euro and the accession of new member states may weaken the position of already vulnerable urban economies as less competitive economic sectors are adversely affected by the reduction in barriers to trade.

Project	**Opportunities**
1.1.1	• To foster centers of competitiveness and development throughout the European area (Solidarity and European integration). • To invite public services to play a key role in boosting a number of major centers of development in Europe (European Competitiveness). • To ensure more coherent and efficient public service action (Cooperation). • No uniformity but differentiation in territorial circumstances and policy goals • co-operation by bringing together economic or functional territories and institutional territories • emphasis on the Trans-European Network, especially high-speed trains
1.1.2	• The rural areas with low urban integration having preserved natural and cultural heritage could provide for new sources and forms of economic diversification. • Already now, innovative examples of urban-rural partnerships exist in various parts of Europe.
1.2.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
1.2.2	• The progress at regional level supports the development of peripheral regions. • The service-supply gap in rural areas can be reduced by the deployment of wireless based technologies.

1.3.1	• increased safety by streamlining of safety procedures and monitoring, • by removing hazardous goods from areas with natural hazards and/or dense population. • The context is treatment of hazardous goods and technologies. • The spatial dimension referred to is the national level, the EU and EU 27+2
1.3.2	• „As a step towards a stronger position of natural heritage the pan European ecological network could be developed, serving as a guideline for planning decisions on the smaller scales and supporting territorial coherence. (...) Natural heritage should be more pronounced as an important factor for human well-being as well as for offering excellent conditions for settling new, non polluting economic activities.“ (page 53)
2.1.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
2.1.2	• Increasing focus on innovation and R&D promotion in policy debates. • Increasing importance attached to Regional Innovation Strategies. • Modern telecommunication technologies enabling the flow of knowledge throughout the European territory. • Increasing mobility of the workforce. • Increasing proportion of research institutions with commercial linkages. • Increased proportion of business activities based upon knowledge-based activities, with lower transport costs and reduced reliance on access to primary materials. • Increasing demand for higher skills and qualifications by business.
2.1.3	• The proposed shift from sectoral to territorial policies (ie. from Pillar 1 to Pillar 2 of the CAP) holds out the hope of eventually pursuing a more balanced and sustainable territorial development. Such a 'territorial' approach offers potential for more balanced, more cohesive, more integrated and multi-sectoral development.“ (page 50) • Further promotion of opportunities for farm households to earn off-farm incomes (pluriactivity) is likely to be a more effective and sustainable way of increasing the incomes of lower income farm households than continuing high levels of market price support or direct payments. • Modification of the details of implementation of the CAP could support economic and social cohesion by targeting support more effectively on lower-income farm households. • Prudent management of Europe's natural and cultural heritage requires agriculture to play an important role, both in maintaining valued landscapes and habitats through a mixture of agri-environmental schemes and cross-compliance regulations, as already recognized in Agenda 2000 and the MTR proposals, and through maintaining regional and local farming cultures in ways which have thus far received little attention.
2.2.1	• „(...)there are a number of measures where indirect Structural Funds contributions to the policy aims of polycentric development and territorial cohesion are possible, e.g. intensified policy discourse, supporting new thinking, leverage of national practice and promotion of trans-national links.“ (page 18)
2.2.3	Results are based upon the first round SWOT evaluation! The second round SWOT evaluation is missing despite the delivery of second round SWOT analysis. • Increasing importance of the knowledge economy, focusing on products which have low transport costs reduce the effects of weak accessibility. This offers important opportunities for some urban areas, at the same time other urban areas can benefit from changing production patterns that reinforce the attractiveness of locations where production costs are relatively low. • Changing leisure patterns are increasing the number and value of tourism visits (importance of cultural heritage). • The introduction of the Euro and the accession of new member states are both anticipated to provide a fillip to economic growth. Those economies that have a strong export orientation may prove the strongest beneficiaries. Environmental concerns have increased in profile over time. The policy environment is supportive of desires to promote compact cities and limit urban sprawl.

Project	Threats
1.1.1	• Polycentrism will remain an uncommunicative catchword. • If only capital regions are considered as "gateway cities" (e.g. in the accession countries) national structures will become increasingly monocentric. • When specialization (the explicit functional role of cities) is emphasized it certainly does not support an economic diversification strategy. • The weight of the urban system of the EU 15 is outweighing those of accession countries
1.1.2	• The increase of urban-rural integration causes high land use pressure and rising land prices in accessible areas. The absence of spatial planning schemes may then work against the principle of sustainability. • Although agricultural policy is changing into rural development policy, the economic system of rural areas is still hardly targeted. • Cities are often viewed in isolation from their regional context. • If the urban-rural is used as a buzzword only, not connecting to the urban-rural diversity of Europe, it is unlikely to gain wider acceptance.
1.2.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
1.2.2	• The rural areas may not be able to persist in the uncertain telecommunications markets. • The failure of broadband on an appreciable scale, and its deployment in peripheral regions only, would complicate communication activities.
1.3.1	• location of hazardous goods in areas with dens population and/or natural hazards • mismanagement of hazardous goods leading to contamination. • The context of identified threats is management of hazardous goods and technologies
1.3.2	• „There is the risk that (...) natural heritage will remain an issue of minor priority in planning practice." (page 53) • "The gradual disappearance of extensively used agricultural areas, which provide a potential for enlarging natural habitats and for corridors between natural areas should be avoided." (page 53)
2.1.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
2.1.2	• Continuing pressures for agglomeration and co-location of businesses (developing clusters). • Globalisation and competitive processes. • Development of isolated R&D capacity and infrastructure with no regional commercial linkages. • Centralisation tendencies owing to increasing costs of R&D. • Widening gaps in the accessibility of knowledge infrastructure due to EU-enlargement. • New technologies improving communications and supporting concentration of effort in a limited number of institutions. • Strong regions developing a reinforcing growth momentum.

2.1.3	• There is just one single reference to the spatial dimension in this SWOT- Analysis. The pan- European level is mentioned: „A number of challenges at the pan-European level also arise from EU enlargement which will greatly increase the numbers of farmers in the EU, leading to new surpluses and budgetary crises unless the CAP is reformed quickly.“ (page 51) There is also a SWOT- Analysis of territories in the following chapter. (see page 51 – 56) • There is a connection to the thematic background of the ESDP. “This may support competitiveness but run counter to the ESDP aims of balanced territorial development and economic and social cohesion, perhaps also involving loss of natural heritage in the intensively farmed areas, and will require careful scrutiny.“ (page 50 – 51) • „One scenario for change is a radical liberalisation of agricultural policy, encompassing the elimination of price support, quotas and other supply measures, and the decoupling and phasing out of direct payments except where justified to underpin public goods such as the environment.“ (page 51) • ...pluriactivity – perhaps redirecting direct payments towards certain types of family farms, and emphasising rural development actions – itself runs the risk of unbalanced territorial development unless policies are successfully deployed to address variations in the labour market opportunities between rural areas. (page 51) • partial renationalisation of the CAP
2.2.1	• Incomplete answer. • Growing disparities between regions within EU Member States
2.2.3	Results are based upon the first round SWOT evaluation! The second round SWOT evaluation is missing despite the delivery of second round SWOT analysis. • Continuing decline of urban areas dependent upon vulnerable economic sectors, owing to the continuing globalisation of trade. • Reduction in a skilled and available labour force owing to an ageing population profile and migration to more prosperous economies. • Changing patterns of business location decisions may reduce levels of inward investment to environmentally weak areas, whilst low levels of business start- ups will fail to invigorate the local economic base. • Potential cumulative gains made by stronger economic areas. • Economic growth may lead to urban sprawl unless it is controlled. • Economic growth may lead to increasing social and economic disparities if the benefits of this growth are not equally distributed. • The introduction of the Euro and the accession of new member states may weaken the position of already vulnerable urban economies as less competitive economic sectors are adversely affected by the reduction in barriers to trade.

Project	Driving forces
1.1.1	1. "New regional development logic" including: interplay between various levels and recognition of role of cities in regional development. 2. Increasing specialisation and functional urban networking; interplay between competition and co-operation. 3. Development of transport networks. 4. Development of knowledge intensive functions and services. Measured by the following indicators: 1) Strength and diversity of urban regions: population, gross regional (domestic) product, GDP per capita PPS, gross value added in industry, number of beds in hotels and similar (tourism), 2) Functional specialisation: gross value added in primary, secondary and tertiary productions, productivity 3) Accessibility indicators (multi-modal), passengers (airports), container traffic (airport) 4) Location of universities, number of students, locations of headquarters of TOP 500 companies, R&D employment, educational level of population

1.1.2	1. Changes in land use patterns and exploitation systems, degree of urbanity and rurality 2. Effects of the different functions on land use and vice versa **3.** Migration and counter-urbanisation
1.2.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
1.2.2	1. Liberalisation, competition. 2. Deployment of new technologies. 3. National regulatory and support policies.
1.3.1	These results are presented under reserve because of several possible interpretations of the delivered answers. The driving forces refer to the thematic dimension in the form of decision-making of location of hazards goods, diversification of industrial landscape and policies. The spatial dimension is less clear and as there is only reference to densely and less populated areas, and industrial landscape. 1. economical and political decision making on location of hazardous goods 2. diversification of industrial landscape 3. optimizing of transport 4. structural funds and/or taxation-oriented policy.
1.3.2	"Natural heritage is not a force in itself. Driving forces are the acknowledgement of the value of natural heritage, which can be divided into the following factors: • acknowledged value of high biodiversity, • acknowledged value of an area as for urban green recreation, • acknowledged value for rare species • emotional value of an area known for a certain reason by the public" (page 53)
2.1.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
2.1.2	Forces increasing participation rates in the Framework Programmes, influencing the proportion of Structural Funds directed towards R&D actions within regions and the type of activities promoted: • R&D capacity ie the propensity to undertake R&D • Innovation capacity ie the propensity to engage in innovation activities • Encouraging a wider take-up of Framework Programme activities • Improving the quality and quantity of inputs into R&D and innovation activities within regions • Improving the linkages between R&D actions and firms within a region

2.1.3	The driving forces dominating this thematic sector are: 1. National interests of Member States technological advances 2. Consumer concerns (not only environment, but also food safety, animal welfare); (possible indicators – environmental payments; specific regulations and designations.) 3. WTO talks; (possible indicator – producer subsidy equivalents (PSEs) as a measure of trade distortion.) 4. Budgetary costs (as well as the high prices paid by consumers); (indicators – CAP expenditure; and total transfers (CSEs) .) and technological change (possible indicator – value added.). The regional consequences of these driving forces will therefore be modified by: • Varying farm size and enterprise mix; • Regional location in relation to labour market opportunities and urban markets; • Regulation, and especially differentiated disbursement of CAP subsidies; • Agronomic opportunities and soil, climatic and topographic constraints; • Local cultures and traditions.
2.2.1	„Economic disparities are the main driving force“ (page 19)
2.2.3	Results are based upon the first round SWOT evaluation! The second round SWOT evaluation is missing despite the delivery of second round SWOT analysis. Very detailed explanation (several pages) divided into categories: 1. Economic drivers (Globalisation of trade, structural economic change, growth of the 'knowledge economy', inward investment trends, business location decisions). 2. Leisure and tourism drivers (increased leisure time, tourism). 3. Education and skills drivers. 4. Science and technology drivers (Information and Technology Communication Technologies, greater application of scienece and technology).Demographic drivers (ageing, workforce, migration, sectoral trends, accession states and other border areas).

Concerning typologies it seems, that although most projects answered, not all of them have elaborated an own and specific typology so far, more or less the usage of existing typologies seems to dominate the field.

Project	Typologies
1.1.1	Reference to Chapter 4 in TIR
1.1.2	Simple typology: 1. Share of artificial surface and share of agricultural land, GDP per inhabitant 2. values high = urban-rural integration high 3. Elaborate urban-rural typology: see report.
1.2.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*

1.2.2	The three driving forces – see above – can each be dichotomized according to whether they are above or below the European (EU27) average. Combining these driving forces into a 2 x 2 x 2 matrix gives 8 possible classes, into which Europe's regions can then be classified: 1. High competition, high broadband availability, high universal service commitment 2. High competition, high broadband, low universal service 3. High competition, low broadband, high universal service 4. High competition, low broadband, low universal service 5. Low competition, high broadband, high universal service 6. Low competition, high broadband, low universal service 7. Low competition, low broadband, high universal service 8. Low competition, low broadband, low universal service
1.3.1	• The SWOT table does only have a general description saying that the typology is based on the hazard types and the vulnerability. There is then also reference to other chapters in the report for details. The typology is presented in the chapter is based on NUTS3 level. • The typology does not (will later) refer clearly to the identified driving forces but is though able to give a spatial pattern of the European territory (by presenting on maps). • The development of the typology as it is now is described in the referred chapter.

1.3.2	Neither the development of the typology nor the statistical processes the typology based on were described.
	Classification on which to base planning decision rules:
	• based on landscape/geomorphologic types (river basins, mountains, coastal zones)
	• high/low development pressure classification
	• economic potential classification
	• important/not important natural heritage classification (based on biodiversity, landscape value)
	• important/not important as urban recreational area (measure by minimum required green area compared to population)
	• important for other reasons
	  • More driving forces than mentioned in answer 5 are applied (page 54).
	  • Meso- and Macro-level

2.1.1	*Has been delivered in the first round of SWOT, but it was missing in the second round.*
2.1.2	Typology will be developed at the NUTS 2 (NUTS 3 rarely available). Case study analysis work whether the NUTS 2 is appropriate. The foreseen typologies are based upon the first two driving forces: 1. Type 1: High R&D capacity and high innovation capacity 2. Type 2: High R&D capacity but low or medium innovation capacity 3. Type 3: Low or medium R&D capacity but high innovation capacity 4. Type 4: Medium R&D capacity and medium innovation capacity 5. Type 5: Low R&D capacity and low innovation capacity Reference to the TIR is made.
2.1.3	At this stage, four territorial typologies are being considered by the project team: 1. Rural area typology. 2. Less-favoured areas (LFA) vs. non-LFAs. 3. Territorial typology based on predominant farm type in the region. 4. Territorial typology based on average size of holdings in a region. Please see description in TIR.

2.2.1	• "Structural Fund assistance per capita at the regional level provides us with one typology on where the funding goes in territorial terms. Relating this information to the change of GDP forms the basis for a second typology (...)." (page 19) • The answer is obviously based NUTS 3. See maps on pages 83, 93, 95. See also explanation on pages 94 and 96. • See maps on pages 83, 93, 95
2.2.3	Results are based upon the first round SWOT evaluation! The second round SWOT evaluation is missing despite the delivery of second round SWOT analysis. 1. Declining urban industrial areas. 2. Strengthening urban industrial areas. 3. Urban industrial areas in transformation to a service economy. 4. Urban areas exhibiting strong socio-economic disparities. 5. Urban areas exhibiting a balanced distribution of wealth and opportunity.

8.1.1 Check for completeness and level of detail

The completeness and also the level of detail is varying. Most of the inputs are right now very good, very detailed and also as brief as possible. Some of the TPGs pay much attention to an introducing chapter in which they address the EU- policy aims in combination with their own field of research. Some even manage to draw first conclusions concerning their identified S, W, O and Ts. A limited number of quotes is used later on, to show how the SWOT and the EU-policies are related.

Table no 7: Check for completeness and level of detail 1st round projects

ESPON SWOT – Check for completeness and level of detail : First Round Projects									
		1.1.1	**1.1.2**	**1.2.1**	**1.2.2**	**2.1.1 (to be actualised!)**	**2.1.2**	**2.1.3**	**2.2.3 (to be actualised)**
	overall remarks	ESDP policy	ESDP policy, clear improvement to first round.		comprehensive reproduction of ESPs policy aims with respect to telecommunication services and net-works; The overall structure of the questionnaire is still recognizable	all ESDPs policy aims listed in SIR, remarks in SWOT questionnaire only include list of relevant aims	short reproduction of ESPs policy aims with relevance for R&D and innovation	General remarks on CAP and RDP aims. Their SWOT does not cover more than two pages. The suggested questionnaire has not been applied.	The structure of the whole SIR refers to SWOT
1	**strengths**	answered (detailed)	answered		answered detailed argumentation	answered no further explanations	answered with short explanations	answered (briefly) no further explanations	short reproduction of ESP´s policy aims with urban relevance
2	**weaknesses**	answered (detailed), connection to ESDP-aims should be more obvious	answered		answered detailed argumentation	answered no further explanations	answered with short explanations	answered no further explanations	answered with short explanation
3	**opportunities**	answered (detailed), connection to ESDP-aims should be more obvious	answered		answered brief argumentation	answered no further explanations	answered with short explanations	Answered detailed argumentation	answered no further explanations
4	**threats**	answered (detailed)	answered		answered brief argumentation	answered no further explanations	answered with very short explanations	Answered detailed argumentation	answered with a few explanations
5	**driving forces**	Answered, force 1+2 in detail, 3+4 not explained	Answered, but no complete operationalisation.		answered forces identified and explained	answered forces identified and explained	Answered Forces identified and explained	Not answered in SWOT, additional information sent by email. No reference to 1-4.	answered no further explanations

6	**typology**	Answered, but with reference to Chapter 4 in TIR, will be completed in September.	Answered, but with reference to TIR. Relation to 1-4 is not obviously given.		answered development of a typology relying on the identified driving forces and leading to a 2x2x2 matrix with 8 classes, the development of the typology is described step by step and the statistical processes the typology is based on is mentioned	answered 3 main classes identified, each subdivided into absolute and relative change, based on comparisons between projections and business-as-usual scenarios	answered 5 typologies identified, based upon the strengths and weaknesses . further information in 3.IR	Not answered in SWOT, additional information sent by email.4 territorial typologies considered and explained in detail	answered very detailed explanation (several pages)
7	**mapping**	Only reference to Chapter 4 in TIR.	Only reference to TIR. There, maps are complete.		Answered	to be developed	answered	Not answered in SWOT, additional information sent by email and available in TIR. Several maps available (e.g. OECD rural are typology)	could be very extensive, therefore limited to 5 principle issues)
8	**data set**	Only reference to Chapter 4 in TIR.	Only reference to TIR. Data set is not completely matching to requirements.		Answered	to be developed	answered	Not answered in SWOT, additional information sent by email. No further explanation.	not answered, no indication on future delivery
9	**reference to concepts**	Answered, only referring to concept of regional competitivenes and sustainable development.	Answered.		Answered	to be developed	worked out on a 1/3 page, very cautious statements	Not answered (former response: worked out on 1.5 pages)	general indicators listed with the assumption of exisitng datasets (only NACE explicitly mentioned)
10	**indicators**	Only list of indicators. No further explanation.	Answered (brief)		Answered	to be developed	answered	Not answered (former response:6 indicators listed but not explained)	table ("brief initial assessment")
11	**reference to sustainability**	Brief answer. No further explanation.	Answered		Answered	Answered	answered with some explanatory statements	Not answered (former response: answered)	4 indicators listed but not explained

Table no 8: Check for completeness and level of detail 2nd round projects

ESPON SWOT – Check for completeness and level of detail: Second Round Projects				
		1.3.1.	1.3.2.	2.2.1.
	overall remarks	Answers 1 to 4 do not refer explicitly to the ESDP, but some points have links to the themes ESDP deals with. The logical structure of questions 1 to 9 is still recognisable, but questions 6-9 have not been answered as required.	The current work status is in an advanced level, but not all demands are fulfilled. Answers 1-6 refer to ESDP and develop logically.	The answers for questions 1 to 4 cover just one page. The overall structure of the questionnaire is still recognizable. The answers 1 to 4 refer to the ESDP.
1	**strengths**	Answered; status quo perspective	Answered; spatial dimension is missing.	Answered.
2	**weaknesses**	Answered; status quo perspective	Answered; The weaknesses are explained, but the context is insufficient.	Answered briefly.
3	**opportunities**	Answered; status quo perspective	Answered; The spatial dimension is not mentioned in this answer.	Answered briefly.
4	**threats**	Answered	Brief answer. The spatial dimension is not mentioned	Incomplete Answer (no relation to ESDP)
5	**driving forces**	Answered (brief); no operationalisation.	Answered: 3 driving forces, not explained; The reference to SWOT is not visible.	Answered. References to SWOT are not visible. The spatial and thematic dimensions remain rather vague. No operationalisation.
6	**typology**	Answered, but with reference to the actual and the next report. Only general description.	Answer declared as provisional first attempt. Only meso- and macro-level. Neither the development of the typology nor the statistical processes the typology based on were described.	Answered? Obviously referring to IR. NUTS III.
7	**mapping**	Not answered. Possible maps available in report Chapter 1.4.	Not answered.	Answered? Obviously referring to IR. NUTS III
8	**data set**	Not answered.	Not answered (very incomplete answer)	Not answered. To be prepared.
9	**reference to concepts**	Not answered.	Answer combined with No. 11.: too short, no spatial dimension	Detailed answer.
10	**indicators**	Not answered. Reference to FIR and SIR (1.2)	Not answered.	5 indicators listed, but not explained. Data availability is not mentioned.
11	**reference to sustainability**	Not answered. Available in the next IR.	Answer combined with No. 9: too short, no chart.	Chart is available but not explained.

Table no 9: ESPON SWOT **Typology check**

TPGs' typologies for regional classification

ESPON SWOT Typologies – Check for completeness and compatibility						
No.	"Nickname"	Typology	Typology refers to SWOT 1-5	NUTS level	Matrix – 8 levels or others	Data base available
1.1.1	**Polycentrism**	Polycentricity (Chapter 4 of TIR) -six types-	No – typology refers to content of TIR	NUTS 3	Six types: From monocentric via bipolar to polycentric (s. TIR, Chapter 4, p. 152)	…in ESPON data base
		Polycentricity (Chapter 4 of TIR) -19 types-	No – typology refers to content of TIR	NUTS 3	19 types: more detailed (s. TIR, Chapter 4, p. 152)	…in ESPON data base
		FUA – Functional urban areas (Chapter 4 of TIR)	No – typology refers to content of TIR	FUA	Criteria: - Population - Transport - Tourism - Industry - Knowledge - Decision making - Administration Types: - Metropolitan European Growth Areas (MEGAs) - Transnational/ national FUAs - Regional/ local FUAs	No
1.1.2	**Urban-rural**	(Simple) urban-rural typology	Not clearly referred to the driving forces – typology refers more to content of TIR	NUTS 3	8 types: - population density high or low - agricultural land high or low - GDP per capita high or low	…in ESPON data base
		(Final) urban-rural typology	No – typology refers to content of TIR	NUTS 3	10 types: - urban – peripheral - densely – not densely populated - high – low urban integration	…in ESPON data base
1.1.3	**Enlargement**	Not available	-	-	-	-
1.1.4	**Demography Trends**	Not yet available	-	-	-	-
1.2.1	**Transport Trends**	Not available	-	-	-	-
1.2.2	**Telecom Trends**	Telecommuni-cation typology -8 types-	Yes – typology clearly refers to the identified driving forces	NUTS 2	8 types: - competition high or low - broadband high or low - universal service high or low	Attached at SWOT
		Telecommuni-cation typology -6 types-	Yes – typology clearly refers to the identified driving forces	NUTS 2	6 types: - competition early or late - broadband penetration high or low	Attached at SWOT

1.3.1	**Natural Hazards**	Typology of natural hazards and risks	Not clearly referred to the driving forces – typology refers more to content of TIR	NUTS 3	Criteria: - hazard types - vulnerability (depending on population density and GDP)	No
1.3.2	**Natural Heritage**	First draft typology of natural heritage	Not clearly referred to the driving forces – typology refers more to content of TIR	-	4 types: - spatial scale (meso, macro) - nature value, development pressure	No
2.1.1	**Transport Impacts**	Not yet available	-	-	-	-
2.1.2	**R&D Impacts**	Typology of R&D capacities or innovation capacity	Not completely referred to the driving forces – typology refers more to content of TIR	NUTS 2	5 types: - high R&D capacity and high innovation capacity - high R&D capacity but low or medium innovation capacity - low or medium R&D capacity but high innovation capacity - medium R&D capacity and medium innovation capacity - low R&D capacity and low innovation capacity	No
		More typologies in the TIR: - regions of knowledge - knowledge-using or knowledge-producing regions	-	-	-	-
2.1.3	**CAP Impacts**	Rural area typology	No – typology refers to content of TIR	NUTS 3	3 types: - predominantly rural areas - significantly rural areas - predominantly urbanised areas	…in ESPON data base
		Less favoured areas typology	No – typology refers to content of TIR	NUTS 3	3 types: - permanent handicaps - undergoing depopulation or… - experiencing poor drainage or…	…in ESPON data base
		Territorial typology based on predominant farm type in the region	No – typology refers to content of TIR	NUTS 3	3 basic elements: - standard gross margin - type of farming - economic size classification of farms	…in ESPON data base
		Territorial typology based on average size of holdings in a region	No – typology refers to content of TIR	NUTS 3		…in ESPON data base
2.1.4	**Energy**	Not yet available	-	-	-	-
2.2.1	**Structural Funds Impacts**	"Economic disparities"	Not clearly referred to the driving forces – typology refers more to content of TIR	NUTS 3, partly NUTS 2?	Criteria: - Structural Fund assistance per capita - change of GDP	Not yet

2.2.2	**Enlargement Aid Impact**	Typology of regional policy priorities	Yes – typology clearly refers to the identified driving forces	-	Not available Impossible to develop this typology due to the large number of fields of action within the various programmes-	-
		Typology of regional potentials	Yes – typology clearly refers to the identified driving forces	NUTS 3, partly NUTS 2?	In progress: - classification according to the most important regional potential addressed - regional aggregation of projects aiming at improving the same potential - structure of policy priorities (regional allocation for specific potentials addressed as % of total regional allocation)	No
2.2.3	**Structural Funds Urban Impacts**	Typology of urban areas -8 types-	Not clearly referred to the driving forces – typology refers more to content of TIR. More than 4 driving forces have been named.	NUTS 3	8 types: - 5 types for absolute difficulty (e.g. areas which are in absolute difficulty on 3 indicators) - 2 types for relative difficulty (e.g. areas which are in absolute difficulty of 0 indicator but have 3 in relative difficulty) - not in difficulty	No
		Typology of urban conditions -5 types-	Not clearly referred to the driving forces – typology refers more to content of TIR. More than 4 driving forces have been named.	NUTS 3	5 types: - declining urban industrial areas - strengthening urban industrial areas - urban industrial areas in transformation to a service economy - urban areas exhibiting strong socio-economic disparities - urban areas exhibiting a balanced distribution of wealth and opportunity	No

Annex (see separate documents)

A **Multiscalar terrritorial analysis (3rd version)**

B **Twelve maps … toward an ESPON vision of Europe in the world (preliminary version)**

C **ESPON map overview**

Seite: 9
[Po1]Volker
Seite: 9
[Po2]Volker
Seite: 9
[Po3]Volker

ESPON
EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

ums RIATE 2414
CNRS - DATAR - UNIVERSITE PARIS 7

Bundesamt
für Bauwesen und
Raumordnung

3rd

Interim Report

ESPON Project 3.1

Integrated Tools for European Spatial Development

Annex A
Multiscalar Territorial Analysis
(4th version)

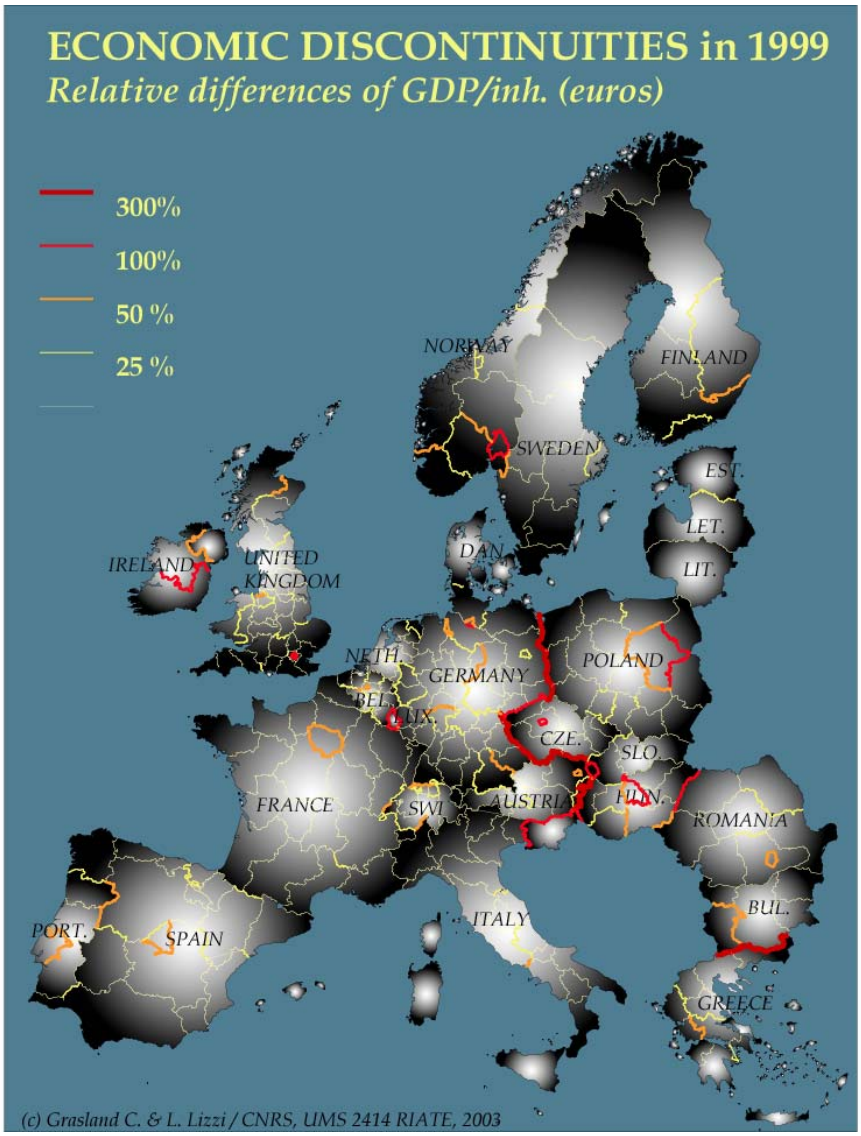
Friday, 15 October 2004

ESPON 3.1

Work Package n°9 & n°11

MULTISCALAR TERRITORIAL ANALYSIS

4th Version, 15 October 2004



Claude GRASLAND & Liliane LIZZI

CNRS – UMS RIATE –UMR GEOGRAPHIE-CITES

Paper elaborated in the framework of

THE HYPERCARTE PROJECT

UMS 2414 RIATE (CNRS- DATAR-Université Paris 7) - UMR 8504 Géographie-cités (CNRS) - UMR 5526 Laboratoire Logiciels, Systèmes et Réseaux (CNRS) - UMR 5132 Informatique et distribution - projet Apache (CNRS-INRIA)

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PREFACE OF THE 4th VERSION

This 3rd version of the report ***Multiscalar Territorial Analysis*** *proposes some substantial additions, as compared to the 2nd version which was delivered at the Crete ESPON Meeting in April 2003.*

- ***The inclusion of the regions of Norway and Switzerland*** *is a major improvement of the previous version. Thanks to the statistical offices and the Espon Contact Points of Switzerland and Norway, it was possible to obtain estimations of GDP 1999 in euros and pps which could insure comparison with the rest of the ESPON area. Thanks also to Erik Gloersen (Nordregio) and Volker Schmidt-Seiwert (BBR) who take the responsibility of the harmonisation of the figures for the inclusion in the ESPON database.*

- ***The proposal of a methodology for the realisation of multiscalar typologies of "lagging" and "advanced" regions*** *is the second major improvement of this report. The second report has yet proposed a statistical and cartographical system for the combination of two criteria of deviations (European/National or European/Local) but we had not solved the problem on how to combine the three criteria (European, National, Local) in an efficient way, useful for political decisions. This 3rd version proposes a solution which is based on a variable parameter of "lagging" or "advanced" which can be modified by the user in order to examine easily several scenarios of political decisions or action.*

Nevertheless, we would like to insist one more time on the fact that this report is a set of methodological proposals which are expected to be useful for political decision. But it is not the intention of the author to define precise political proposal. We consider indeed the GDP per capita as a very poor indicator for spatial planning, whatever the mode of calculation (euro and pps) and we would like to insist on the fact that good analysis tools will not produce sound political results if they are applied on bad criteria. This report is in fact ***the user's guide of the ESPON Hyper-atlas*** *that will be presented (prototype version) at the next ESPON meeting in Italy (October 2003). With the ESPON Hyper-atlas, all methods presented in this report will be easily available with other variables, other territorial divisions …*

Claude GRASLAND
Paris, the 17th July 2003

PRESENTATION

Multiscalar *Territorial Analysis* is based on the assumption that it is not possible to evaluate the situation of a given territorial unit without taking into account values for neighbouring units, for the various regional entities it belongs to. Indeed, both from a policy point of view and in a social science perspective, contrasts and gradients are of much more interest than absolute values. Furthermore, aggregating and disaggregating territorial units makes it possible to see how local values add up to form territorial contexts and regional positions.

Whatever the indexes used for political decisions, they have to be evaluated in relative terms. This may be done according to various territorial contexts, whether they are continental, national or local.

1) Analysis of deviations

The *deviation of a region to the European reference area* is classically used in the report of the European Commission where the value of the indices are transformed into a global index 100 = EU15 or EU27.
The *deviation of a region to its national reference area* is very important to combine with the previous one. Indeed, many contradictions can appear between the two levels, with important political consequences.
The *deviation of a region to the local reference area* is based on the local differential between one region and the neighbouring ones according to various criteria of proximity (contiguity, time-distance). According to recent research in the field of spatial economy and regional science, those local advantages/handicaps appear to be of crucial importance for the regional cohesion because they are strongly connected with the action of economic or social actors.

2) Combination of deviations

In order to produce well-informed and efficient policy options, the various multiscalar deviations described above (European, National, Local) must be examined in combination. Separate analyses, as they are frequently presented in current European policy documents, lead to a partial and incomplete territorial vision. An important challenge of the ESPON Programme is to remedy this situation and to propose efficient synthesis of these different relative positions. There are numerous available solutions in this regard; selecting the most efficient one from a political and scientific point of view is a major challenge.

3) Analysis of discontinuities

Maps of discontinuities describe the contrasts between contiguous territorial entities. They can be defined in absolute and relative terms, according to the assumptions of the observer or the problem to be analysed. The analysis of discontinuities is more than a complement to the multiscalar evaluation of regional situations. Indices which describe the *limits between regions* would provide a valuable scientific input to the politically crucial issue of border effects, especially in the framework of the INTERREG Programme. Indeed, substantial differences between contiguous regions create distortions which are generally considered detrimental from the cohesion point of view ("territorial gaps"). But those discontinuities can also reveal opportunities of cooperation and exchange in a framework of local partnership for development. Differentiating these different types of local contrasts, with both detrimental and favourable effects, would provide a major criterion for the SWOT analysis developed in ESPON 3.1 of cross-regional dynamics in an enlarged Europe as analysed by ESPON TPG 1.1.3.

4) Multiscalar typologies of regions for political decisions

When the policymakers want to build political scenarios or to evaluate propositions of structural funds, they need to have a synthetic view on the situations of regions according to the various territorial contexts which can modify the situation of a given region. The question of *perequation* (transfer from "advanced" to "lagging" region) is very sensible and it is important to propose a complete view of the scales where those *perequation* processes can take place, according to the principle of subsidiarity. As an example, we analyse how the picture of "lagging" regions is modified when the previous criterion of Objective 1 (less than 75% of the mean value of GDP) is applied simultaneously at three scales (European, national, local). Simultaneously, it is possible to propose a typology of "advanced regions" based on the symmetric criteria of more than 133% of the mean value of GDP at those three scales. According to this methodology, it is possible to demonstrate that very few regions are "lagging at all scales" and "advanced at all scales". Many are in more complex situations like certain regions of Switzerland or Norway which are "advanced" at European scale but "lagging" at their national or local scales. Reversely, the metropolitan regions of candidate countries are very often "lagging at European scale" but "advanced at national and local scales".

SITUATION ACCORDING TO EUROPEAN LEVEL

Indicator

Deviation of a region to European reference area

Political meaning

Situation of a region at European level

Examination of the consequences of enlargement

Topic of the maps

GDP per capita in euro then in pps

MAP 1 : GDP PER CAPITA (euro), 1999
DEVIATION TO EUROPEAN LEVEL

This map is very classical but it is interesting to observe how the choice of the statistical divisions and the patterns can modify the perception of the results. Usually, the maps use the index 100 as limit of classes, displaying an opposition between regions located above/under the European mean. Here, we have decided to introduce a medium class 90-110 in order to identify (in light yellow) the regions which are around the European mean. We decided also to introduce a limit of class at the index 10 in order to underline the relative differences between the candidate countries of the 1st round (Slovenia, Poland, Hungary, Czech republic, ..) and the ones of the 2nd round (Bulgaria, Romania).

The most favoured regions of European Union for this criterion are metropolitan areas from Western Europe (London, Brussels, Hamburg, Paris…) and Luxembourg. The lowest indexes are related to the very specific situation of Bulgarian and Romanian regions.

Thanks to the statistical office and Espon Contact Points of Norway and Switzerland , it is possible for the first time to include the regions of those state on the map. As expected, the regions of Switzerland and Norway are generally above the mean value of EU15. In the "top 10" of the richest region of the Espon area, we find indeed three regions of Switzerland (*Zürich, Suisse du Nord-Est, Region Lémanique*) and the metropolitan region of Norway (*Oslo og Akershus)*. All regions of Switzerland are above the index 130. It is not the case for Norway (the region of *Hedmark og Oppland* is below the mean of EU-15 with an index of 99) but this result is induced by the fact that a part of the GDP related to the oil of North Sea has not been distributed at regional level by the statistical office of Norway.

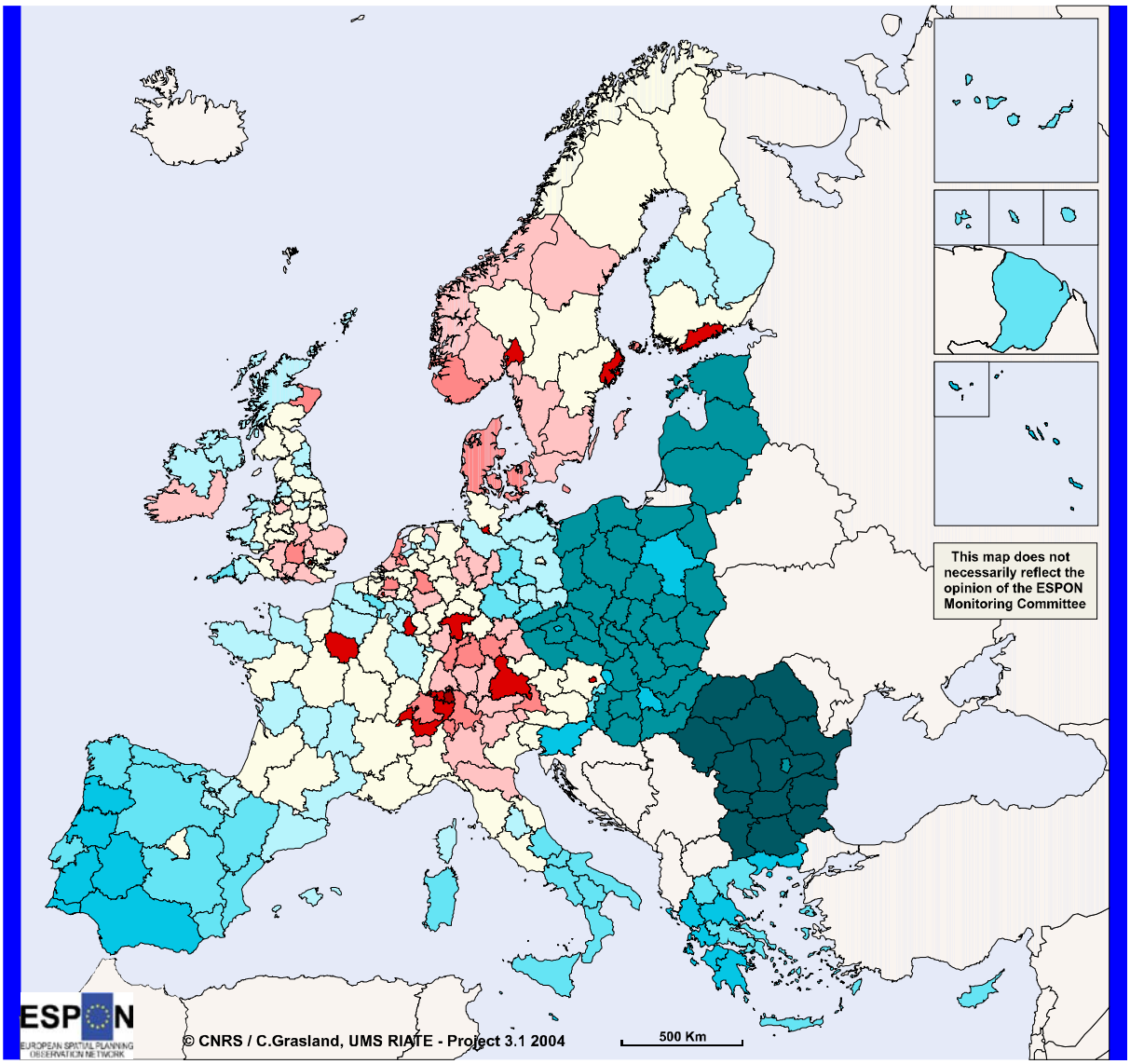
The ten lower

Code	Region	GDP/inh	Index
RO01	**Nord-Est**	1134.7	**5.3**
BG05	**Yuzhen Tsentralen**	1243.2	**5.8**
BG02	**Severen Tsentralen**	1257.8	**5.9**
BG01	**Severoiztochen**	1269.0	**6.0**
BG03	**Severozapaden**	1288.4	**6.1**
RO03	**Sud**	1334.1	**6.3**
RO06	**Nord-Vest**	1369.8	**6.4**
RO04	**Sud-Vest**	1398.3	**6.6**
RO02	**Sud-Est**	1497.0	**7.0**
BG06	**Yugozapaden**	1536.4	**7.2**

The ten higher

Code	Region	GDP/inh	Index
UKI1	**Inner London**	55307.2	**260.1**
BE1	**Brussel**	47025.2	**221.1**
CH04	**Zuerich**	43144.1	**202.9**
LU	**Luxembourg**	42514.2	**199.9**
NO01	**Oslo Og Akershus**	41727.2	**196.2**
DE6	**Hamburg**	41084.3	**193.2**
CH03	**Suisse Du Nord-Est**	37693.4	**177.2**
FR1	**Ile De France**	34852.9	**163.9**
DE21	**Oberbayern**	34517.7	**162.3**
CH01	**Region Lemanique**	34389.3	**161.7**

Map 1 : GDP per capita (euro) 1999
Deviation to European level



Index EU-15=100

- 0 - 10
- 10 - 25
- 25 - 50
- 50 - 75
- 75 - 90
- 90 - 110
- 110 - 125
- 125 - 150
- 150 - 200
- >200

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MAP 2 : GDP PER CAPITA (pps), 1999
DEVIATION TO EUROPEAN LEVEL

Introducing Purchase Power Standard (pps) instead of merely referring to an international currency (euro) and to exchange rates produces a global reduction of the heterogeneity of the regional levels of GDP/inh. The minimum level (*region of NE Romania*) is increased from 1134 to 3857 euros/inh and the maximum level (*region of Inner London*) is reduced from 55307 to 51405 euros/inh.

When comparing maps 1 and 2, we notice important differences. For example Italian regions appear in a much more favourable position when their richness is expressed in pps. The reverse is true for Germany or Sweden where the cost of living is higher. Some changes in the "top 10" of richest and poorest regions can also be observed (see below).

Concerning Norway and Switzerland, the transformation of GDP in pps produce an important reduction of differences with the rest of Europe, because of the very high cost of life in those states. In Switzerland, the regions of *Ticino* and *Mittelland* are only very near from the mean of EU15 for this criterion of pps. In Norway, four of the seven NUTS2 regions appear below the mean of EU15 for the criterion of pps - if we follow the proposal of the Statistical Office of Norway concerning the non regional allocation of GDP related to oil.

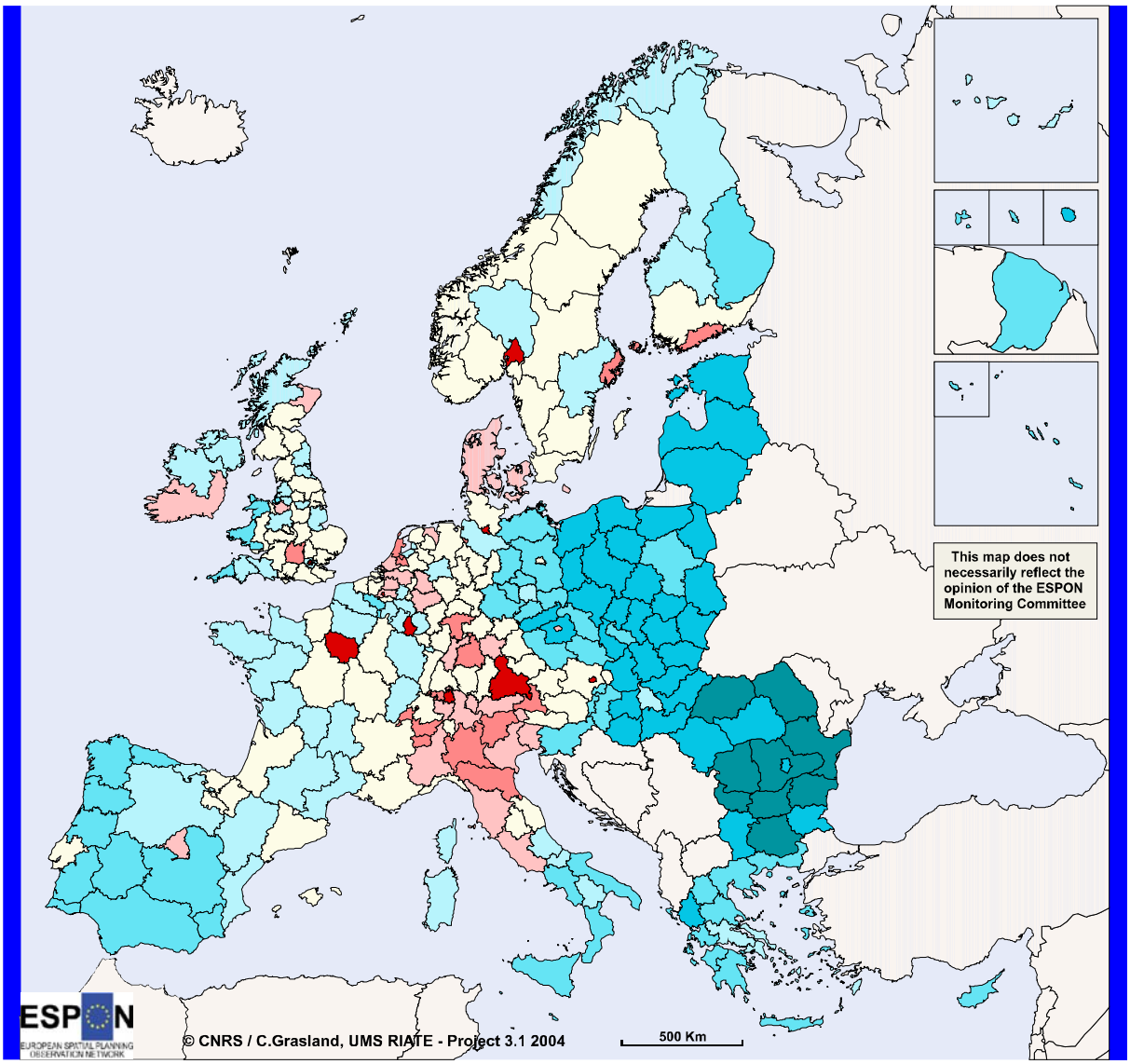
The ten lower

Code	Region	GDP/inh	Index
RO01	**Nord-Est**	3857.3	**18.1**
RO03	**Sud**	4535.2	**21.3**
RO06	**Nord-Vest**	4656.6	**21.9**
RO04	**Sud-Vest**	4753.7	**22.4**
BG05	**Yuzhen Tsentralen**	5039.8	**23.7**
RO02	**Sud-Est**	5089.2	**23.9**
BG02	**Severen Tsentrale**	5098.9	**24.0**
BG01	**Severoiztochen**	5144.4	**24.2**
BG03	**Severozapaden**	5222.9	**24.6**
RO07	**Centru**	5697.7	**26.8**

The ten higher

Code	Region	GDP/inh	Index
UKI1	**Inner London**	51405.6	**241.7**
BE1	**Brussel**	46213.5	**217.3**
LU	**Luxembourg**	39686.5	**186.6**
DE6	**Hamburg**	38573.6	**181.4**
NO01	**Oslo Og Akershus**	34428.7	**161.9**
CH04	**Zuerich**	33533.3	**157.7**
FR1	**Ile De France**	32878.3	**154.6**
DE21	**Oberbayern**	32408.3	**152.4**
AT13	**Wien**	31949.4	**150.2**
DE71	**Darmstadt**	31751.0	**149.3**

Map 2 : GDP per capita (pps), 1999
Deviation to European level



Index EU-15=100

- 0 - 10
- 10 - 25
- 25 - 50
- 50 - 75
- 75 - 90
- 90 - 110
- 110 - 125
- 125 - 150
- 150 - 200
- >200

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

SITUATION ACCORDING TO NATIONAL LEVEL

Indicator

Deviation of a region to national reference area

Political meaning

Situation of a region at national level

Evaluation of the effect of national planning policies

Advantage of metropolitan regions

Topic of the map

GDP per capita in euro (the same in pps)

MAP 3 : GDP PER CAPITA (euro*), 1999
DEVIATION TO NATIONAL LEVEL

This map highlights the importance of economical differences inside each state of the European Union and the candidate countries. In many states, the metropolitan region is characterised by a very high level (> 150) and all other regions are around or under the national mean (France, Sweden, Finland, Bulgaria, Slovakia, Hungary, Norway, UK…). In other cases, we can observe a global opposition between two groups of regions with different levels of wealth (Italy, Spain, Germany, Belgium…).

Very high positive deviations to national level can be observed in all European territory, with comparable values in EU15 and candidate countries. For example, the metropolitan region of Warsaw (*Mazowieckie*) has a level of GDP/inh. which is 50% higher than the mean value of Poland, which is exactly comparable to the deviation between the region of Budapest (*Közèp-Magyarorsz*) and Hungary, the region of Paris *(Ile de France*) and France, the region of *Oslo og Akershus* and Norway, or the region of München (*Oberbayern*) and Germany

The highest negative deviations to national level are related to the specific situation of French DOM (Guadeloupe, Guyana, Reunion) or peripheral regions of Italy, Germany and Spain. High negative deviations can also be observed in candidate countries, for example in NE part of Hungary or eastern part of Poland.

The ten lower

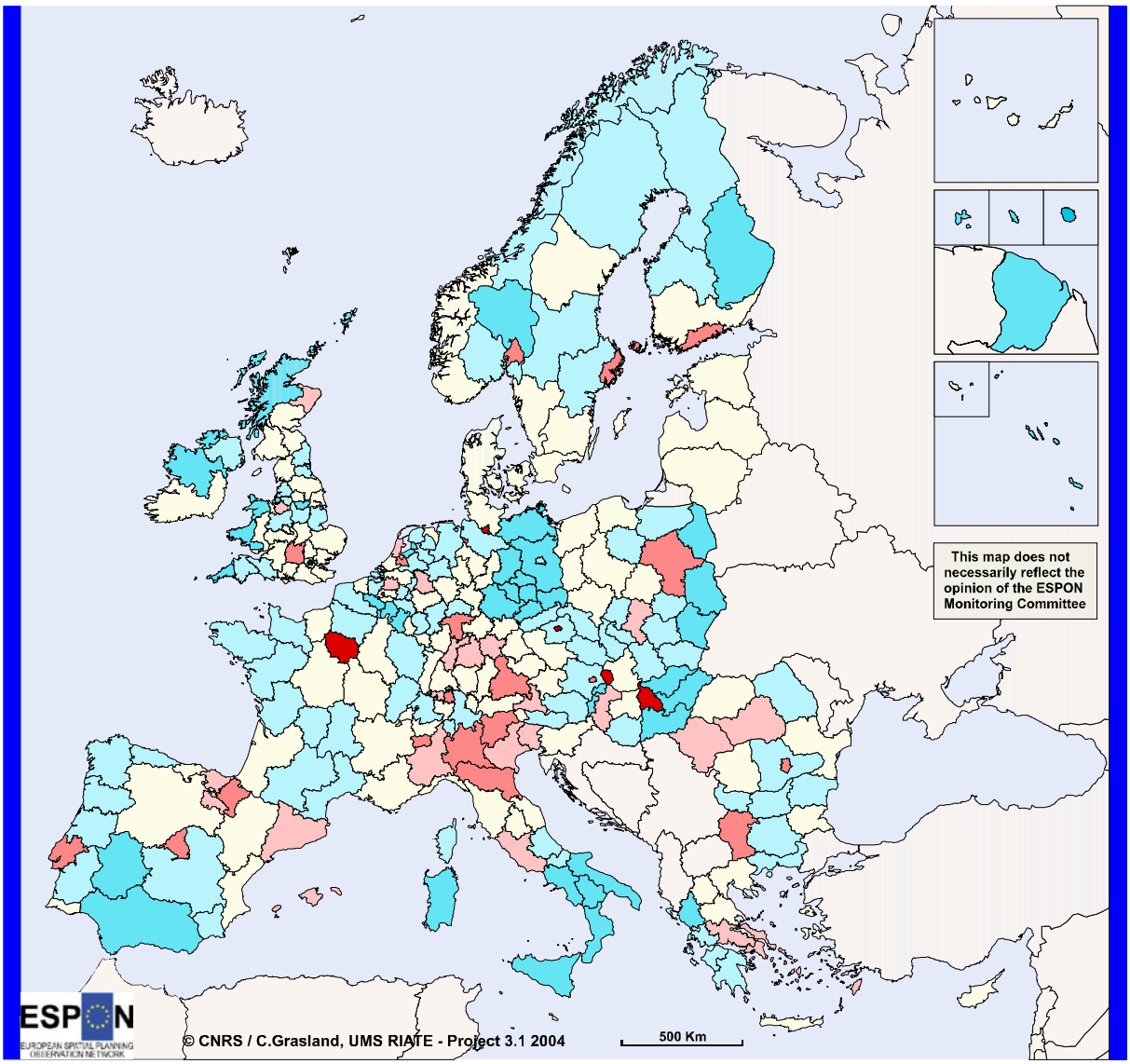
Code	Region	GDP/inh	Index
FR94	**Reunion**	10904.2	**48.5**
FR93	**Guyane**	11755.7	**52.3**
FR91	**Guadeloupe**	12669.8	**56.4**
DEE1	**Dessau**	14481.7	**60.1**
IT93	**Calabria**	11728.5	**61.0**
DED1	**Chemnitz**	15245.1	**63.3**
ITA	**Sicilia**	12302.2	**64.0**
ES43	**Extremadura**	9131.6	**64.0**
IT8	**Campania**	12316.2	**64.0**
HU06	**Eszak-Alfoeld**	2870.3	**64.1**

The ten higher

Code	Region	GDP/inh	Index
UKI1	**Inner London**	55307.2	**240.2**
CZ01	**Praha**	10628.2	**211.9**
BE1	**Brussel**	47025.2	**203.9**
SK01	**Bratislavský**	6959.3	**198.2**
DE6	**Hamburg**	41084.3	**170.5**
FR1	**Ile De France**	34852.9	**155.1**
HU01	**Koezep-Magyarorszag**	6767.8	**151.1**
PL07	**Mazowieckie**	5620.3	**149.3**
NO01	**Oslo Og Akershus**	41727.2	**146.8**
DE21	**Oberbayern**	34517.7	**143.2**

*** In this case, maps for GDP/inh in euro and in pps coincide. Even if the absolute values are different, in terms of national deviation, it is, by construction, the same.**

Map 3 : GDP per capita (euro), 1999
Deviation to national level



Index national level=100

- 0 - 10
- 10 - 25
- 25 - 50
- 50 - 75
- 75 - 90
- 90 - 110
- 110 - 125
- 125 - 150
- 150 - 200
- >200

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

SITUATION ACCORDING TO LOCAL LEVEL

Indicator

Deviation of a region to local reference area

Political meaning

Situation of a region at local level

Spill-over effects, complementarity & concurrency

Polycentrism based on local peaks

Topic of the maps

GDP per capita in euro then in pps

MAP 4 : GDP PER CAPITA (euro), 1999
DEVIATION TO LOCAL LEVEL

When analysing regional economic performance at the **European scale**, national contexts usually account for a major part of the observed differences. Indeed, well implemented national mechanisms for redistribution of wealth in most cases compensate for local variations in economic potential. Analysing variations within the national context neutralises the effect of these redistribution mechanisms, but gives no indication of relative situations across national borders. Deviations to a local reference area, relating each region to neighbouring ones, compensate for some of the shortcomings of the previously mentioned methods. Based on the hypothesis that European regions are coherent internally, this approach reveals local contrasts between them, thus reducing the importance of national contexts. These contrasts reflect potential tensions which can have major effects on labour markets and capital flows. Especially, if European integration policies reduce the importance of national borders.

In the case of GDP/inh (euros) it is necessary to observe that these local situations can produce ambiguous effects. Apparently, it is interesting to have higher values of GDP/inh than neighbouring regions (attraction of population, skilled workers…). But in certain cases such a positive deviation can also lead to a relocation of activities in neighbouring regions with lower production costs. In other words, local differentials can be both an opportunity and a threat for regional development. Those regions that are characterised by the highest local levels of positive deviation generally also have a relatively higher score when comparing to national deviations. This result is logical because most metropolises, with high positive scores, are located at the centre of a national territory, thereby being surrounded by regions of the same state. Regions characterised by high negative local deviation are mainly located on the border between EU-15 and candidate countries. The former "iron curtain" can now from an East-European perspective be seen as a "golden curtain" with very important differentials of wealth between each side.

The highest positive deviation at local level is obtained by the Greek region of *Anatoliki Makedonia*, despite its very moderate wealth from European standard (9300 euros/inh). Indeed, this region is surrounded by regions of Bulgaria and Turkey where the levels GDP/inh are more than 3 times lower. Does it means that this region could be locally very attractive in the framework of a new enlargement of the EU ?

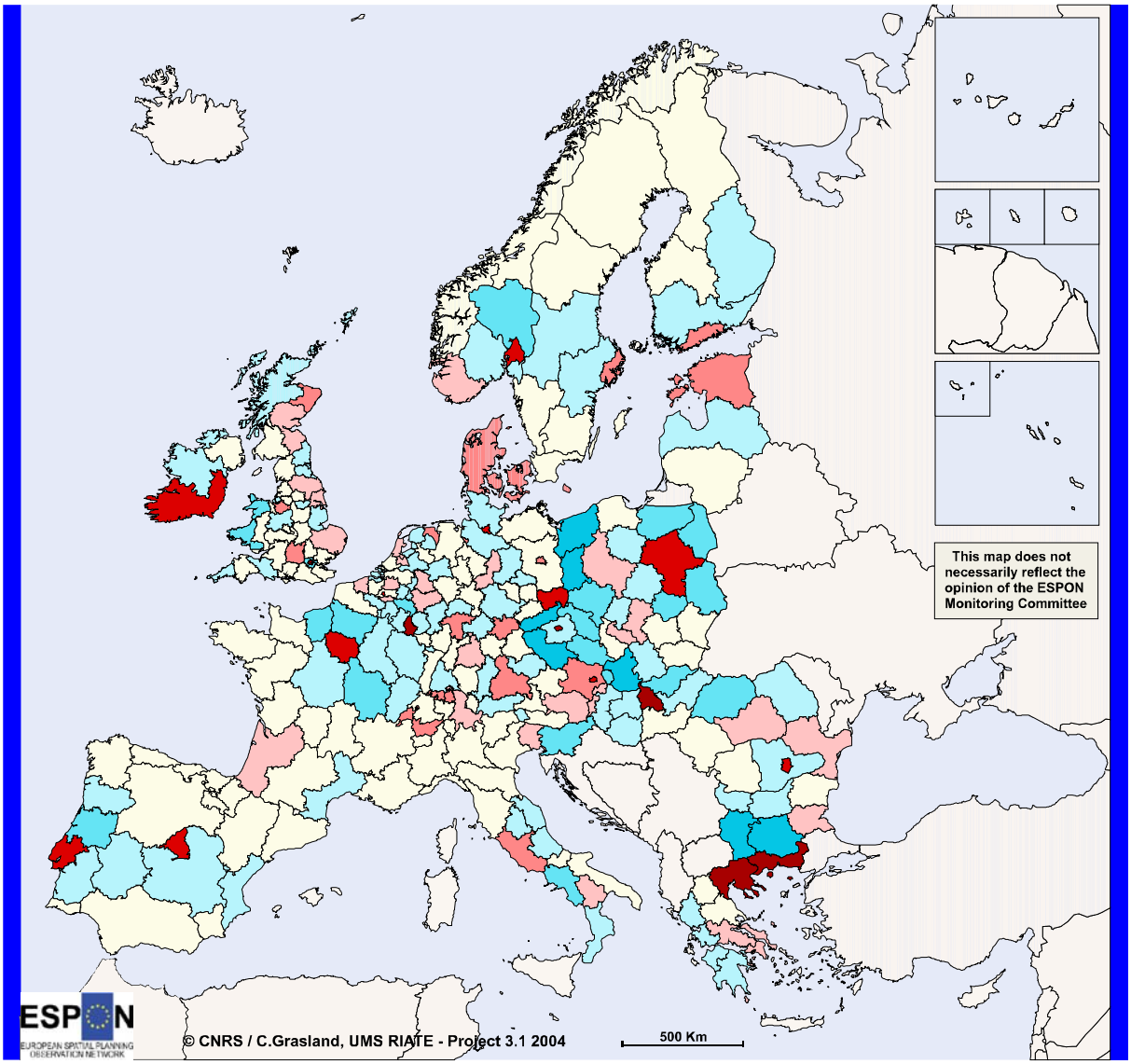
The ten lower

Code	Region	GDP/inh	Index
CZ03	**Jihozápad**	4641.4	**31.9**
CZ04	**Severozápad**	4190.3	**32.1**
BG04	**Yugoiztochen**	2000.0	**41.1**
PL04	**Lubuskie**	3416.5	**41.7**
PL0G	**Zachodniopomorskie**	3767.1	**43.1**
BG05	**Yuzhen Tsentralen**	1243.2	**48.2**
SK02	**Zapadne Slovensko**	3267.0	**48.6**
SI	**Slovenija**	9451.1	**55.7**
PL03	**Lubelskie**	2629.0	**61.6**
CZ06	**Jihovychod**	4356.7	**62.3**

The ten higher

Code	Region	GDP/inh	Index
UKI1	**Inner London**	55307.2	**275.8**
CZ01	**Praha**	10628.2	**256.4**
LU	**Luxembourg**	42514.2	**221.0**
GR12	**Kentriki Makedonia**	11314.4	**208.1**
HU01	**Koezep-Magyarorszag**	6767.8	**205.9**
GR11	**Anatoliki Makedonia**	9209.1	**203.1**
DE6	**Hamburg**	41084.3	**197.6**
BE1	**Brussel**	47025.2	**195.8**
PL07	**Mazowieckie**	5620.3	**184.5**
NO01	**Oslo Og Akershus**	41727.2	**182.1**

Map 4 : GDP per capita (euro), 1999
Deviation to local level



Index local level=100

- 0 - 10
- 10 - 25
- 25 - 50
- 50 - 75
- 75 - 90
- 90 - 110
- 110 - 125
- 125 - 150
- 150 - 200
- >200

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MAP 5 : GDP PER CAPITA (pps), 1999
DEVIATION TO LOCAL LEVEL

Introducing Purchase Power Standard (pps) instead of referring to an international currency (euro) and to exchange rates has obviously no effects on the local deviations of regions located in the same state (i.e. without external boundary) but may heavily modify the local deviation for border regions.

As an example, the region of Anatoliki Makedonia had the highest local deviation when it was calculated in euro (Index=330). It is only classified fourth (Index= 205) when the GDP per capita is expressed in pps. This reflects that differences between contiguous border regions of Greece, Bulgaria and Turkey are less flagrant in social terms than in an economic perspective. In the case of *Inner London*, the index of local deviation remains the same (Index=276), because all neighbouring regions belongs to United Kingdom.

Accordingly, the main changes between Maps 4 and 5 can be observed in the border regions, especially along the former "iron curtain. Local differential appears very high, but not as dramatic as previously, when GDP per capita is expressed in pps.

This example demonstrate clearly the fact that regional positions at local level are very influenced by political context and dramatic change can be introduced in local situations when borders are removed. More generally, the local situations are influenced by changes in their accessibility to other regions, which means that any change in accessibility (modification of the permeability of boundaries, new infrastructures of transportation, changes in psychological perception of neighbours, …) should practically modify the local indexes. This is not possible to introduce such complexity actually but we hope to realise it in the future Hyper-atlas where deviations could be based on a time or cost distance, rather than on a single contiguity index.[1]

The ten lower

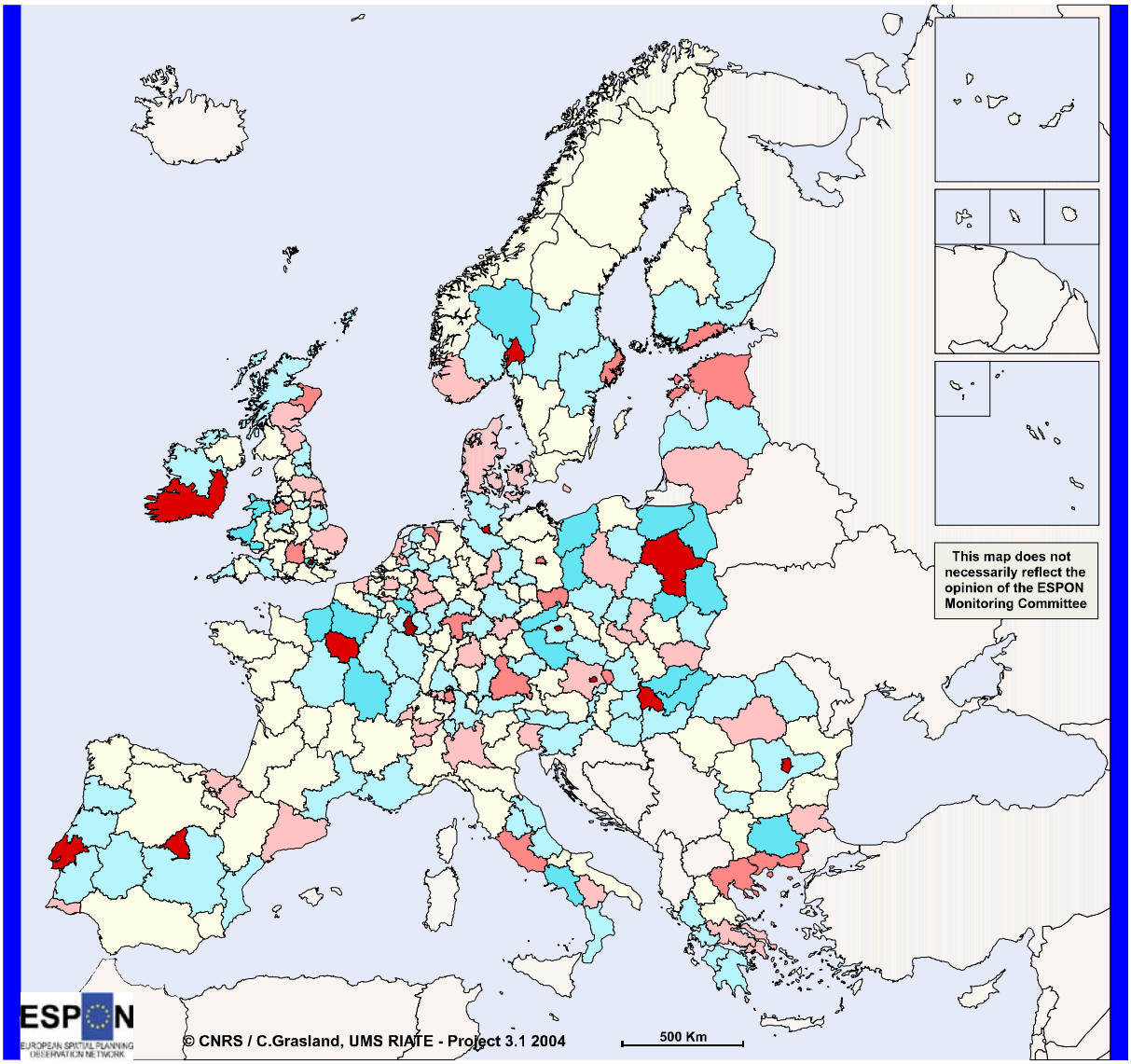
Code	Region	GDP/inh	Index
PL03	**Lubelskie**	5774.7	**61.6**
UKI2	**Outer London**	18640.3	**63.4**
HU05	**Eszak-Magyarorszag**	7009.4	**64.4**
PL0E	**Warminsko-Mazurskie**	6409.9	**65.4**
FR22	**Picardie**	17605.2	**66.9**
BG05	**Yuzhen Tsentralen**	5039.8	**67.6**
PL0A	**Podlaskie**	6016.1	**67.8**
PL04	**Lubuskie**	7504.8	**69.1**
CZ03	**Jihozápad**	11604.3	**69.3**
CZ04	**Severozápad**	10476.7	**69.8**

The ten higher

Code	Region	GDP/inh	Index
UKI1	**Inner London**	51405.6	**275.8**
CZ01	**Praha**	26572.9	**256.4**
LU	**Luxembourg**	39686.5	**217.0**
DE6	**Hamburg**	38573.6	**197.6**
BE1	**Brussel**	46213.5	**195.8**
HU01	**Koezep-Magyarorszag**	15962.9	**192.4**
PL07	**Mazowieckie**	12345.3	**184.5**
NO01	**Oslo Og Akershus**	34428.7	**180.9**
PT13	**Lisboa E Vale Do Tejo**	20879.1	**174.5**
FR1	**Ile De France**	32878.3	**171.5**

[1] We hope to do it in partnership with the TPG 1.2.1 on accessibility.

Map 5 : GDP per capita (pps), 1999
Deviation to local level



Index local level=100

- 0 - 10
- 10 - 25
- 25 - 50
- 50 - 75
- 75 - 90
- 90 - 110
- 110 - 125
- 125 - 150
- 150 - 200
- >200

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

SYNTHETIC MAPS

Indicator

Typology based on the combination of two deviations

Political meaning

Combination of situations at various levels

Identification of regions with specific problems

More efficient typology of development

Topic of the maps

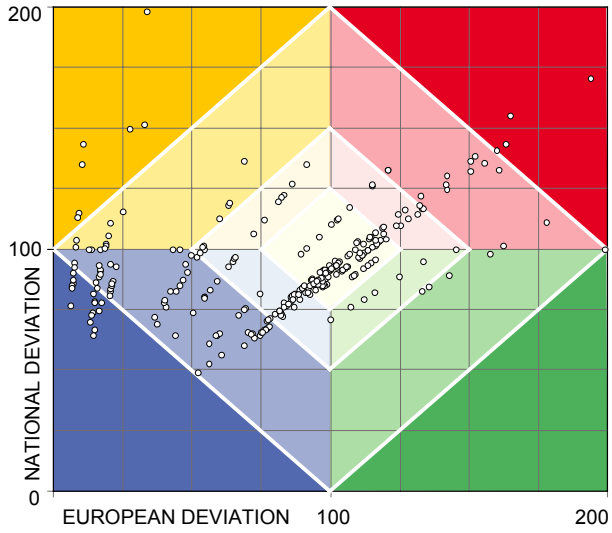
GDP per capita in euro then in pps

MAP 6: GDP PER CAPITA (euro), 1999 – POSITION TO EUROPEAN AND NATIONAL LEVELS

For the combination of two criteria of deviations, the UMS RIATE proposes a chromatic system inspired by a solution first introduced by ÖIR in the Study Programme, but with some adaptations. The system is based on the two following principles:

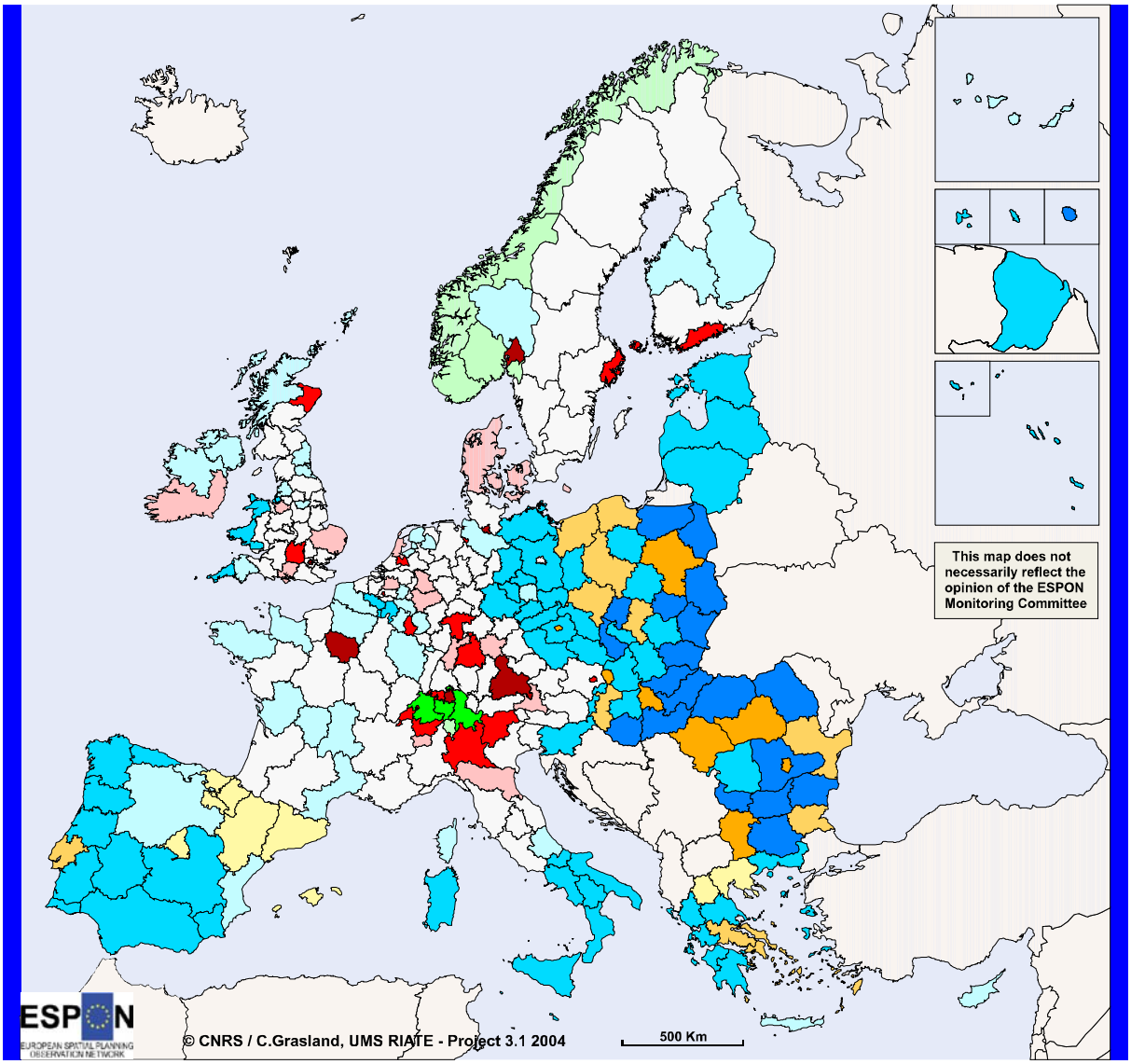
- ✓ The **colour** defines the **qualitative situation** of a region under/above the mean for both criteria.
- ✓ The **intensity (saturation)** of the colour defines the **quantitative situation** of a region according to the criterion of **common/exceptional** values of deviation on both criteria.

Regions in white (or in light colours) are around the European and national means. It is for example the case of all Swedish regions, except Stockholm.
Regions in red are characterised by positive deviations at both European and national levels. It is the case of most metropolitan regions of north-western Europe (Paris, London, Helsinki, Brussels…).
Regions in blue are characterised by the reverse situation of negative deviations at both national and European levels. This is the most critical situation where both national and European policies should be combined to ensure a favourable spatial development.

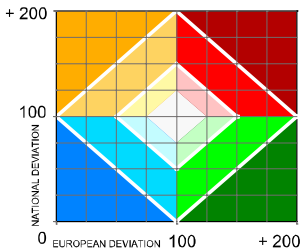


Regions in orange are characterised by a more complicated situation. There is a contradiction between a negative deviation at the European level and a positive deviation at the national level. The paradox of this situation is well known in Western Europe (cf. the research on the emblematic case of Catalonia) but the maps display that such cases are likely to be found mainly in Eastern Central Europe in the future.
Regions in green, characterised by the reverse situation (above European & under national levels) are typical from peripheral regions of Norway and Switzerland which are "rich" according to the European standards but "poor" according to their national context.

Map 6 : GDP per capita (euro), 1999
Position to European and national levels



Combination of national and EU-15 deviations



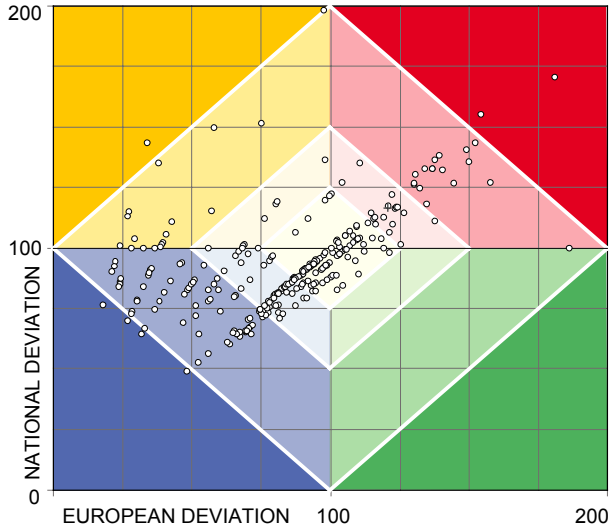
Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

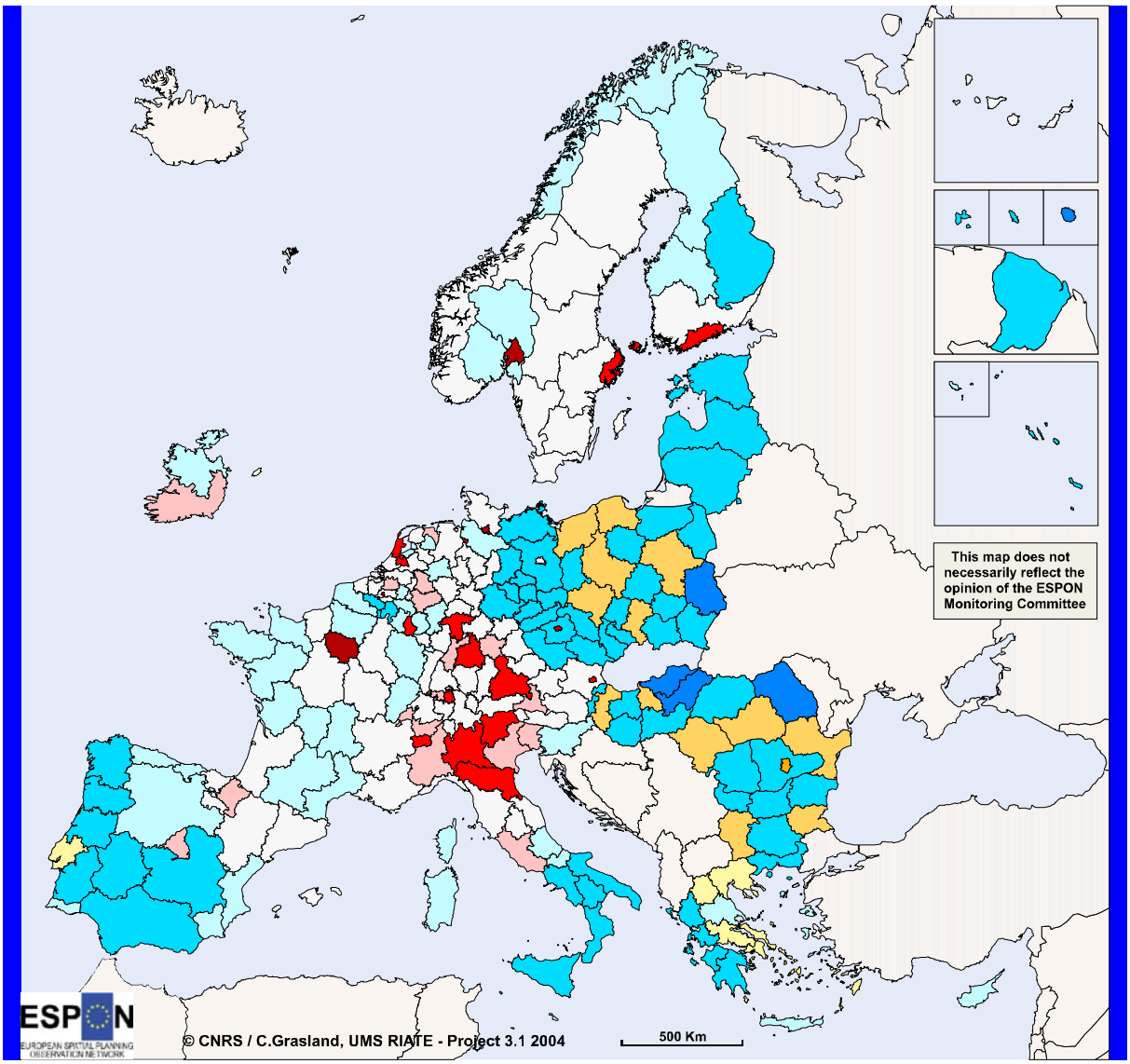
MAP 7: GDP PER CAPITA (pps), 1999 – POSITION TO EUROPEAN AND NATIONAL LEVELS

When expressing GDP per capita in Purchase Power Standard (pps) instead of referring to an international currency (euro) and to exchange rates does not produce major changes in the general typology of regions. However, some qualitative changes can be noticed, e.g. in the case of Madrid which switches categories from "orange" to "red" because its GDP/inh is above the European mean value in pps but not in euro. Generally, we can observe that the "extreme situation" is less frequent when pps is introduced.

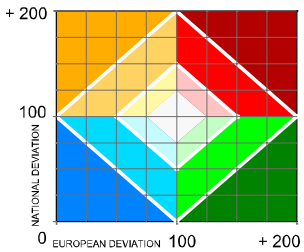
In particular, we can notice the disparition of the type "above European level & under national level" which was characteristic from Switzerland and Norway.



Map 7 : GDP per capita (pps), 1999
Position to European and national levels



Combination of national and EU-15 deviations



Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

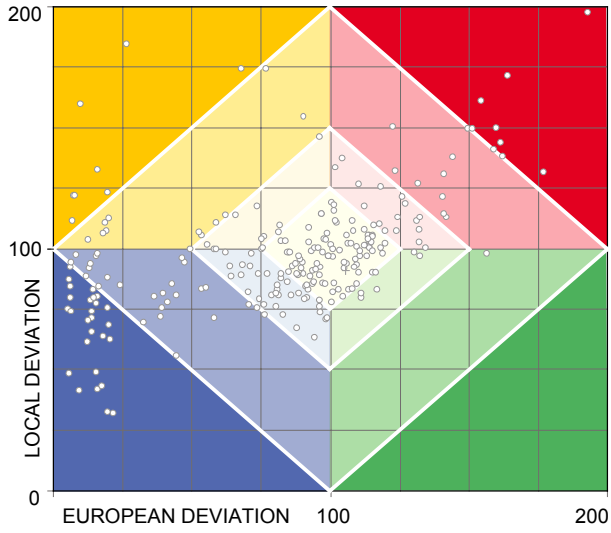
Source: Espon Database

MAP 8: GDP PER CAPITA (euro), 1999 – POSITION TO EUROPEAN AND LOCAL LEVELS

The choice of the chromatic system is the same as before (see comments on Map 6) but the political meaning of the typology is different. Here, we focus on the potential contradictions between the global and local situations. The fact that a region can be locally advantaged and globally disadvantaged (or the reverse) is a topic of major importance for territorial planning because it is directly related to the problem of **the scale(s) of territorial cohesion** and could provide some inputs for the research on the concept of **polycentrism**[2].

Regions in red are characterised by positive deviations at both European and local levels. This is characteristic of a **global central situation**, whatever the level of analysis.

Regions in blue are characterised by the reverse situation of negative deviations at both local and European levels. Those regions are clearly characterised by **a global peripheral situation.**

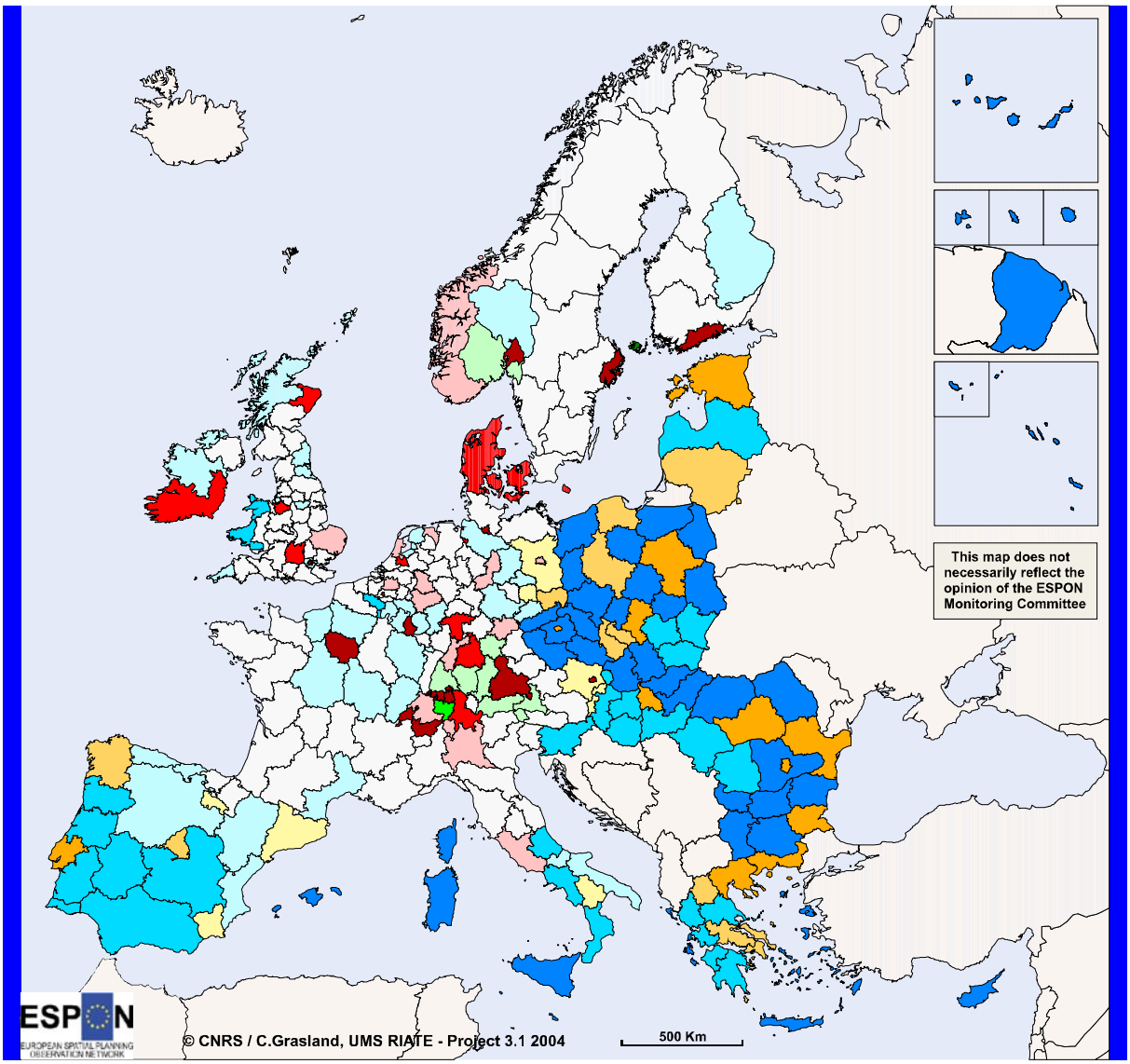


Regions in orange can be seen as potential arenas for polycentric development because of the contradiction between a negative situation at European level and a positive situation at the local level. They could be characterised as **centres of the periphery**.

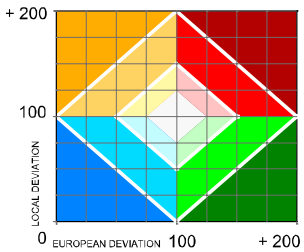
Regions in green, characterised by the reverse situation (above European & under local levels) are in a particular situation as far as they are **peripheral regions of the richest area of Europe**. This is a typical situation of many regions of Alps (between Zürich and München) and regions located in the surrounding of Oslo.

[2] For example through the computation of deviation betweens a town and the state/region where this town is located. Or between a town and the nearest neighbouring towns.

Map 8 : GDP per capita (euro), 1999
Position to European and local levels



Combination of local and EU-15 deviations



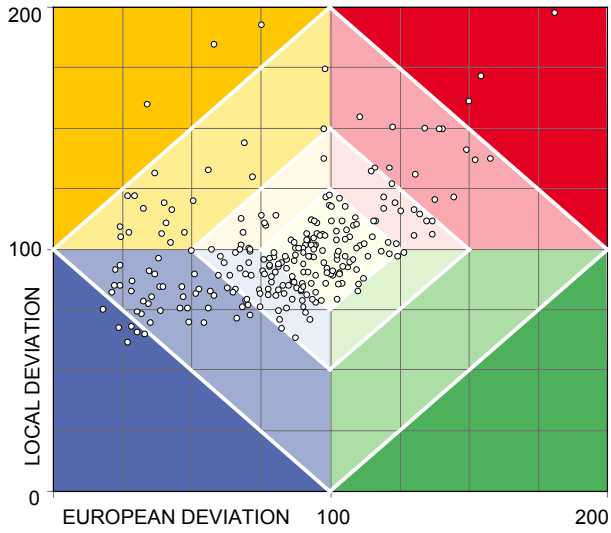
Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

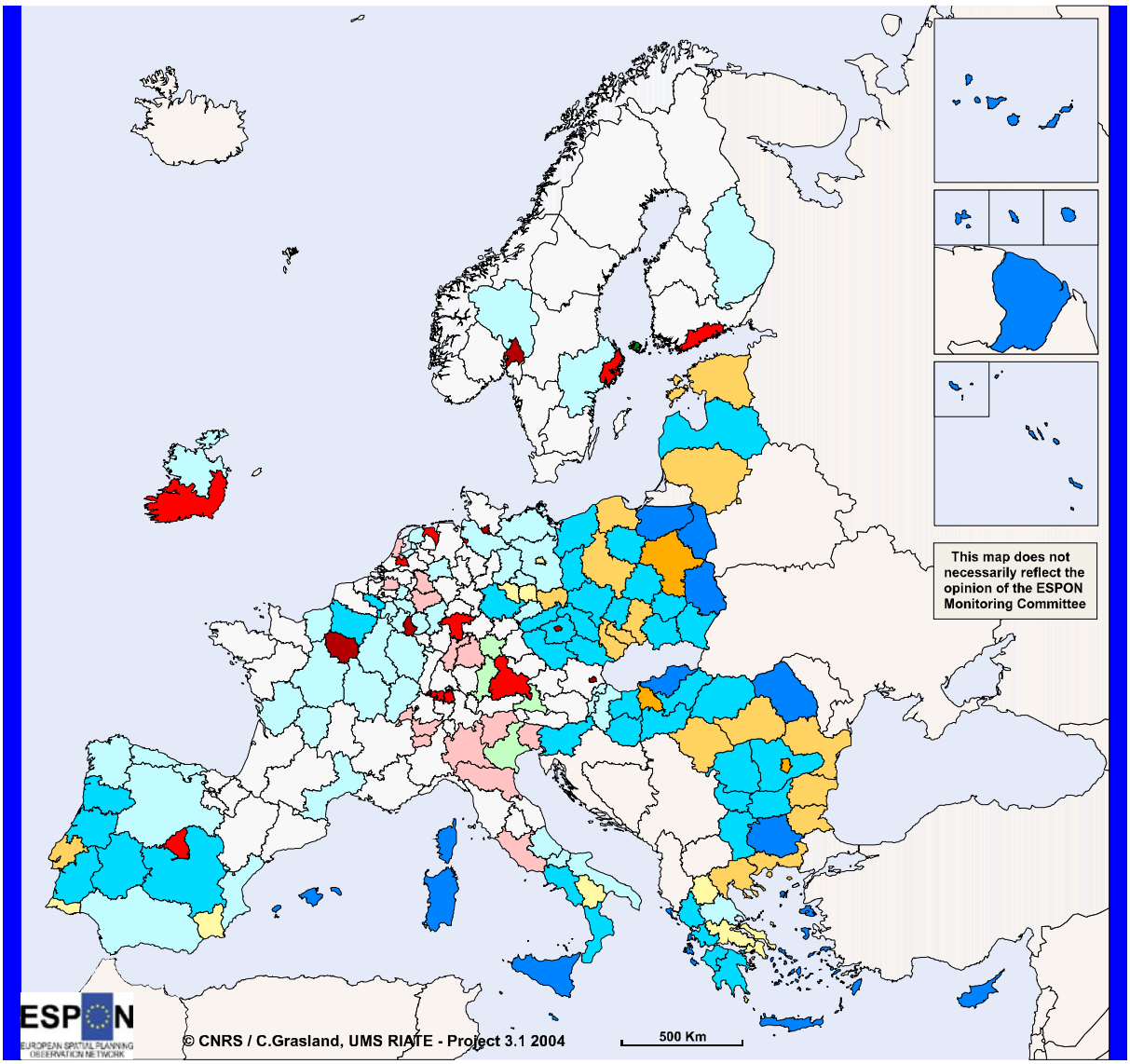
MAP 9: GDP PER CAPITA (pps), 1999 – POSITION TO EUROPEAN AND LOCAL LEVELS

As usual, the *pps* reference instead of the *euro*'s one produces a global reduction of deviation levels both at European and local levels. An increasing number of regions are located in the medium situation (white or very light colours). On the other hand, it is easier to identify the very specific situation of a certain category of regions such as Western Europe metropolitan areas (in dark red), East European regions (in dark orange) and very peripheral regions located along the future eastern boundary of EU after enlargement (eastern regions of Poland, Hungary, Romania…).

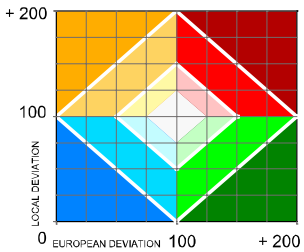
The "green type" has been generally removed because, according to GDP in pps, very few regions can be at the same time "advantaged at European level" and "disadvantaged at local level". But there is an interesting exception with the Italian region of *Veneto* which was not in this category in previous map (euro) and appears in this situation with pps.



Map 9 : GDP per capita (pps), 1999
Position to European and local levels



Combination of local and EU-15 deviations



Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

HIGHEST ABSOLUTE DISCONTINUITIES

Indicator

Absolute difference between two contiguous regions' values

Political meaning

New visualisation of territorial cohesion

Identification of potential local partnerships

Improvement of INTERREG actions

Topic of the maps

GDP per capita in euro then in pps

MAP 10 : GDP PER CAPITA (euro), 1999
ABSOLUTE DIFFERENCE

When contiguous regions show very different levels of GDP/inh., this can produce a high potential of flows (migrations, travel-to-work, investments…) if other conditions are available. In the present case, the choice of GDP/inh in euros (instead of pps) leads to focus on economic consequences of those differentials. It could also be interesting to cartography those differences for GDP/inh (pps) as a possible measure of "social" differences across regional boundaries. More generally, it is necessary to combine numerous other criteria (age structure, unemployment…) in order to evaluate discontinuities in a proper way.

When considering absolute differences of GDP/inh we observe major impacts of regional policy related artefacts and fiscal measures. In this respect, the highest level of discontinuity is obtained in the UK, due to a well lead and highly efficient "gerrymandering" in the London Region. The region of Oslo appears also with exceptional differences with neighbouring regions of Norway and Sweden.The following top discontinuities are related to the exceptional fiscal advantages of Luxembourg which produce very high differences with neighbouring regions of France, Belgium or Germany. Some important discontinuities can be locally observed between regions of Switzerland and regions of France and Italy. But also inside Switzerland, between the French and German speaking area.

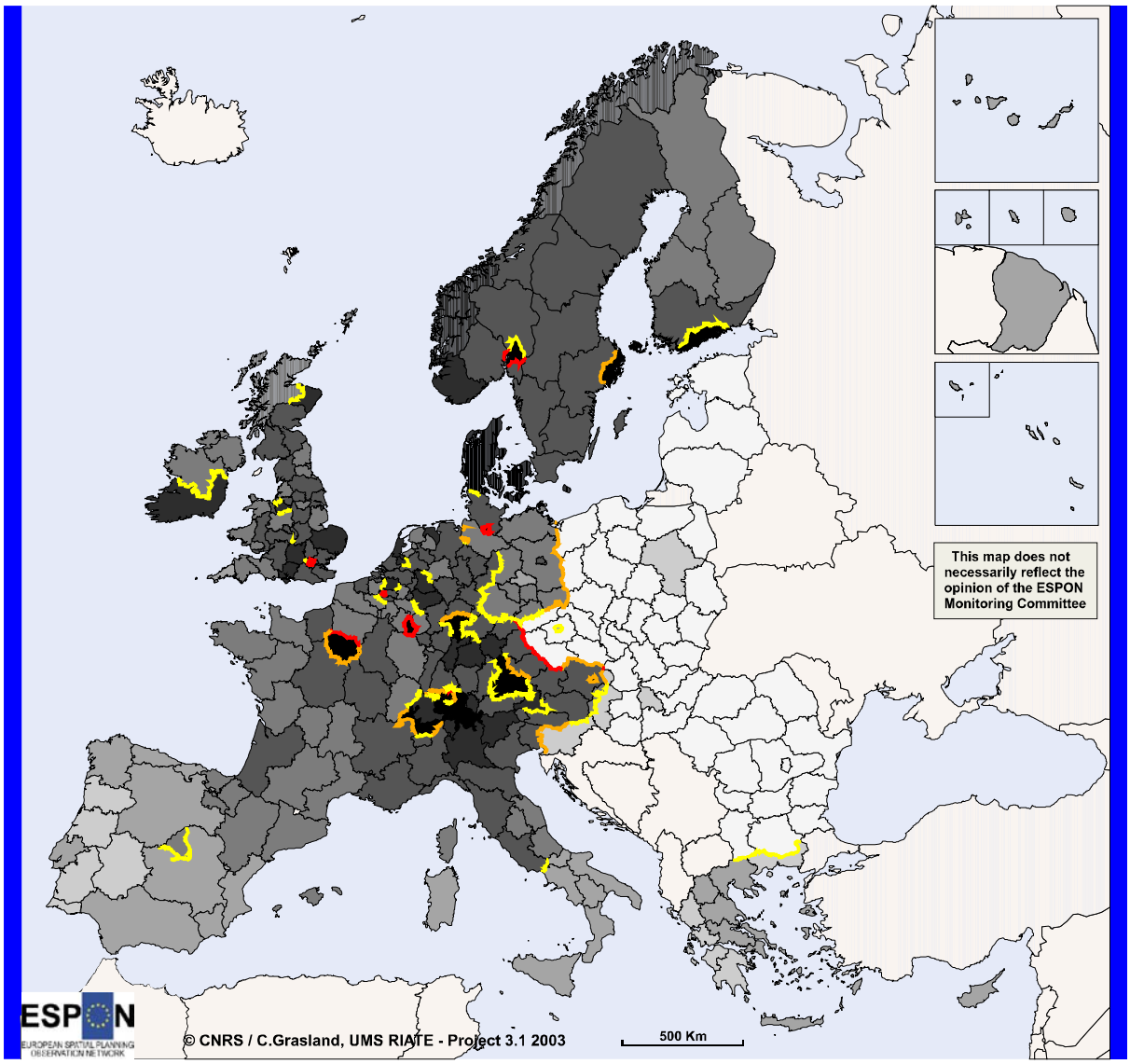
Generally speaking, the highest discontinuities can be observed:

- ✓ Between metropolitan regions of north-western Europe and their neighbourhood (Paris, Brussels, London, Hamburg).
- ✓ Between region of the UE and the region of candidate countries (especially Germany-Poland, Germany-Czech Republic & Austria-Czech Republic).
- ✓ Between regions of the UE and the AELE (especially Switzerland-France and Switzerland-Italy)
- ✓ Between places offering specific financial advantages (Luxembourg) and their neighbourhood.

The ten highest differences

i	j	Region i	Region j	GDP i	GDP j	Difference
UKI1	UKI2	**Inner London**	**Outer London**	55307	20055	**35252**
LU	BE34	**Luxembourg**	**Luxembourg**	42514	16801	**25713**
LU	BE33	**Luxembourg**	**Liege**	42514	17639	**24875**
LU	FR41	**Luxembourg**	**Lorraine**	42514	18850	**23664**
LU	DEB2	**Luxembourg**	**Trier**	42514	19510	**23004**
BE1	BE24	**Brussel**	**Vlaams Brabant**	47025	24022	**23003**
DE6	DE93	**Hamburg**	**Lueneburg**	41084	18242	**22842**
NO01	NO02	**Oslo Og Akershus**	**Hedmark Og Oppland**	41727	21087	**20640**
LU	DEC	**Luxembourg**	**Saarland**	42514	22005	**20509**
DE23	CZ04	**Oberpfalz**	**Severozapad**	24302	4190	**20112**

Map 10 : GDP per capita (euro), 1999
Discontinuities in absolute difference



GDP in euros by average population

- 0 - 5000
- 5000 - 10000
- 10000 - 15000
- 15000 - 20000
- 20000 - 25000
- 25000 - 30000
- > 30000

Highest differences

	rank	*absolute difference*
	1 - 20	36000 - 16100
	21 - 50	16100 - 11180
	51 - 100	11180 - 6480

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MAP 11 : GDP PER CAPITA (pps), 1999
ABSOLUTE DIFFERENCE

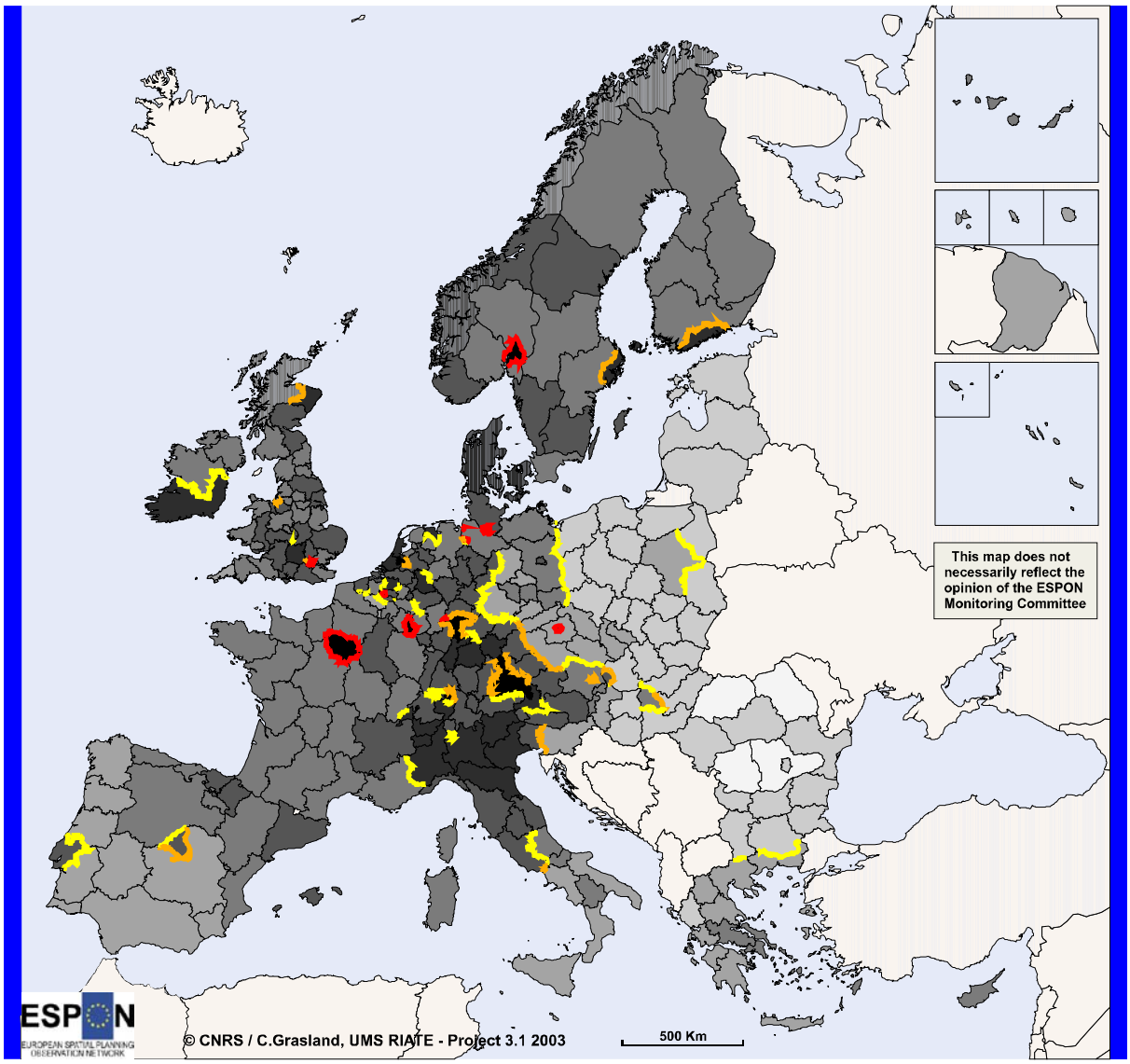
When we consider absolute differences measured in pps, the level of discontinuities is generally lower. However, the general pattern remains the same, even if a strong reduction of discontinuities is to be noted for international borders.

The most important changes can be observed along the border between EU and Czech Republic. This could reflect the fact that social differences are not as important as economic differences in this area (which can be verified using other criteria such as education, unemployment or housing).

The ten highest differences

i	j	Region i	Region j	GDP i	GDP j	Difference
UKI1	UKI2	**Inner London**	**Outer London**	51406	18640	**32765.3**
LU	BE34	**Luxembourg**	**Luxembourg**	39686	16511	**23175.1**
BE1	BE24	**Brussel**	**Vlaams Brabant**	46214	23607	**22606.4**
LU	BE33	**Luxembourg**	**Liege**	39686	17335	**22352.0**
LU	FR41	**Luxembourg**	**Lorraine**	39686	17782	**21904.1**
DE6	DE93	**Hamburg**	**Lueneburg**	38574	17128	**21446.0**
LU	DEB2	**Luxembourg**	**Trier**	39686	18318	**21368.7**
LU	DEC	**Luxembourg**	**Saarland**	39686	20661	**19025.5**
DE6	DEF	**Hamburg**	**Schleswig-Holstein**	38574	20945	**17628.3**
NO01	NO02	**Oslo Og Akershus**	**Hedmark Og Oppland**	34429	17399	**17029.5**

Map 11 : GDP per capita (pps), 1999
Discontinuities in absolute difference



GDP in pps by average population

- 0 - 5000
- 5000 - 10000
- 10000 - 15000
- 15000 - 20000
- 20000 - 25000
- 25000 - 30000
- > 30000

Highest differences

	rank	*absolute difference*
	1 - 20	32770 - 12500
	21 - 50	12500 - 8953
	51 - 100	8953 - 6210

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

HIGHEST RELATIVE DISCONTINUITIES

Indicator

Ratio between two contiguous regions' values

Political meaning

New visualisation of territorial cohesion

Identification of potential local partnerships

Improvement of INTERREG actions

Topic of the maps

GDP per capita in euro then in pps

MAP 12 : GDP PER CAPITA (euro), 1999
RELATIVE DIFFERENCE

It is interesting to consider discontinuities not only as an absolute differential but also as a relative one. As an example, we can compare GDP/inh differential between Brussels (47000) / Vlaams Brabant (24 000 euros) and Praha (10600) / Stredny Cechy (4200). In absolute terms, we would conclude that the differences between each capital region and its surroundings are much more important in Belgium (23000) than in the Czech Republic (6400). However, in relative terms, the ratio between the centre and the periphery is higher in the case of the Czech Republic (2.6) than in the case of Belgium (2.0). Relative differences may reveal as well potential complementarities that could induce flows, and should therefore not be neglected.

The map of main relative discontinuities shows a different pattern of inter-regional contrasts than what has previously been observed. The most important ones are much more clearly located along the former "iron curtain", and more specifically in border areas between Greece and Bulgaria, Germany and Poland, Germany or Austria and Czech Republic.

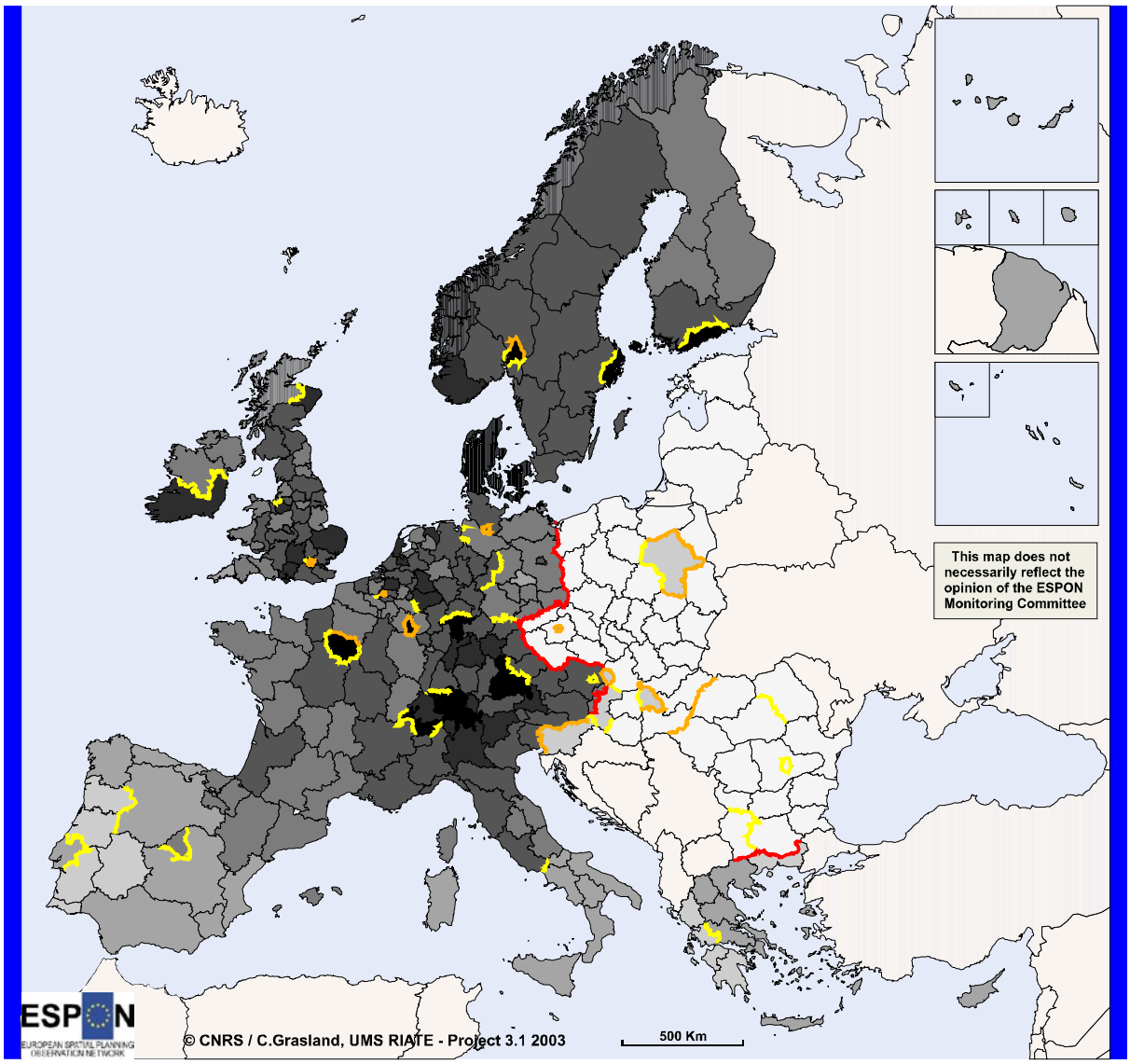
The highest relative discontinuity can be observed between the Greek region of Anatoliki Makedonia and its Bulgarian neighbours: the GDP of *Anatoliki Makedonia & Thraki* is not very high at European or national level (9200 euros/in.) but it is 7.5 time the level of the region of *Yuhzen tsentralen* (1242 euros/inh.) and 3.5 times the level of *Turkey* (2636 euros/inh).

Concerning Switzerland and Norway, it is interesting to observe that the differences between UE and AELE appears not so important in relative terms as they were with the criteria of absolute differences.

The ten highest differences

i	j	Region i	Region j	GDP i	GDP j	Ratio
GR11	BG05	**Anatoliki Makedonia**	**Yuzhen Tsentralen**	9209	1243	**7.4**
AT12	SK02	**Niederoesterreich**	**Zapadne Slovensko**	20447	3267	**6.3**
DE23	CZ04	**Oberpfalz**	**Severozapad**	24303	4190	**5.8**
GR12	BG04	**Kentriki Makedonia**	**Yugoiztochen**	11314	2000	**5.7**
DE24	CZ04	**Oberfranken**	**Severozapad**	23470	4190	**5.6**
DE23	CZ03	**Oberpfalz**	**Jihozapad**	24303	4641	**5.2**
AT31	CZ03	**Oberoesterreich**	**Jihozapad**	23320	4641	**5.0**
DED2	PL04	**Dresden**	**Lubuskie**	16325	3417	**4.8**
DE22	CZ03	**Niederbayern**	**Jihozapad**	21935	4641	**4.7**
DE4	PL04	**Brandenburg**	**Lubuskie**	16146	3417	**4.7**

Map 12 : GDP per capita (euro), 1999
Discontinuities in relative difference



GDP in euros by average population

- 0 - 5000
- 5000 - 10000
- 10000 - 15000
- 15000 - 20000
- 20000 - 25000
- 25000 - 30000
- > 30000

Highest differences

	rank	*relative difference*
	1 - 20	7.5 - 3
	21 - 50	3 - 1.83
	51 - 100	1.83 - 1.47

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MAP 13 : GDP PER CAPITA (pps), 1999
RELATIVE DIFFERENCE

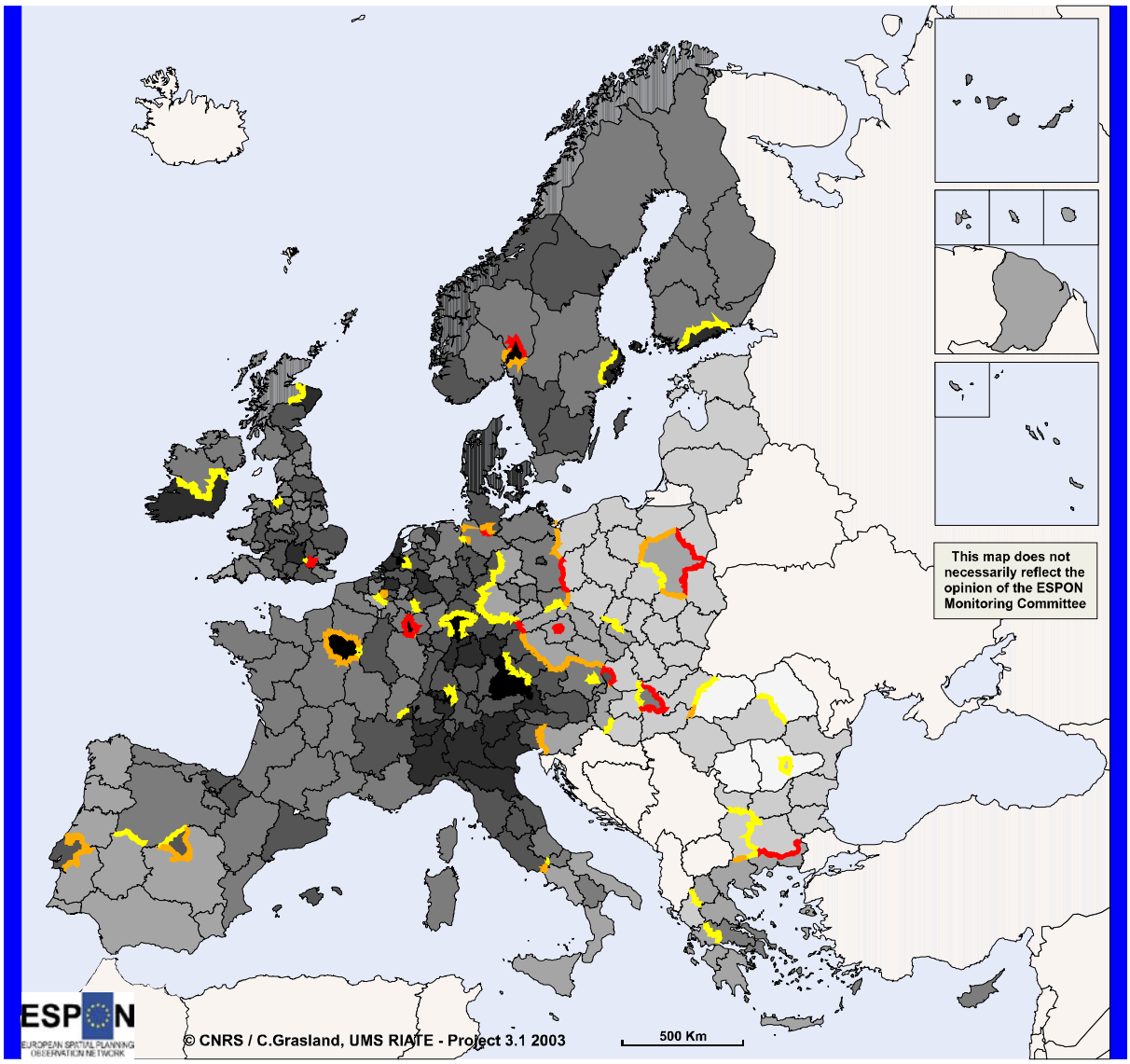
The introduction of *pps* instead of *euro* produces a sensible reduction of relative differences along national borders, and especially along the border between the EU countries and the candidate's ones. For example, the ratio between *Anatoliki Makedonia & Thraki* and *Bulgaria* is reduced from 7,5 to 2.4 when considering pps instead of euros.

What appears very clearly on this map is the supremacy of metropolitan regions of candidate countries (Warsaw, Budapest, Bratislava and Prague) within their respective national context.

The ten highest differences

i	j	Region i	Region j	GDP i	GDP j	Ratio
UKI1	UKI2	**Inner London**	**Outer London**	51406	18640	**2.8**
CZ01	CZ02	**Praha**	**Strední Cechy**	26573	10362	**2.6**
LU	BE34	**Luxembourg**	**Luxembourg**	39686	16511	**2.4**
GR11	BG05	**Anatoliki Makedonia**	**Yuzhen Tsentralen**	11938	5040	**2.4**
HU01	HU06	**Koezep-Magyarorszag**	**Eszak-Alfoeld**	15963	6770	**2.4**
LU	BE33	**Luxembourg**	**Liege**	39686	17335	**2.3**
HU01	HU05	**Koezep-Magyarorszag**	**Eszak-Magyarorszag**	15963	7009	**2.3**
DE6	DE93	**Hamburg**	**Lueneburg**	38574	17128	**2.3**
LU	FR41	**Luxembourg**	**Lorraine**	39686	17782	**2.2**
DE23	CZ04	**Oberpfalz**	**Severozapad**	22818	10477	**2.2**

Map 13 : GDP per capita (pps), 1999
Discontinuities in relative difference



GDP in pps by average population

- 0 - 5000
- 5000 - 10000
- 10000 - 15000
- 15000 - 20000
- 20000 - 25000
- 25000 - 30000
- > 30000

Highest differences

	rank	*relative difference*
	1 - 20	2.76 - 1.97
	21 - 50	1.97 - 1.65
	51 - 100	1.65 - 1.42

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MULTISCALAR TYPOLOGY OF "LAGGING" REGIONS

Indicator

Typology based on the combination of three deviations

Political meaning

Combination of situations at various levels

Identification of regions with specific problems

More efficient typologies for political action

Topic of the maps

GDP per capita in euro then in pps

MAP 14 : GDP PER CAPITA (euro), 1999
MULTISCALAR TYPOLOGY OF "LAGGING" REGIONS

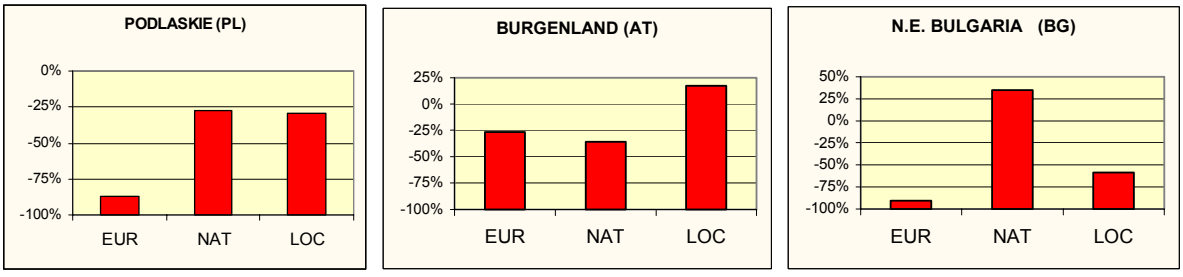
The definition of "lagging" regions is very important for spatial planners and policymakers which try to develop social and territorial cohesion. But it becomes very often based on over simplistic criteria like the fact to be under a given value for a single criteria. The very emblematic value of 75% of the mean of GDP per capita of the EU is the emblematic example of such simplistic definition of lagging region. It is of course easy to criticize but how is it possible to improve the usual criteria without proposing too complex criteria which could produce confusion and doubts in the spirit of the citizens ?

One possible solution is the construction of synthetic indexes derived from political objectives, like the Human Development Index which is the statistical translation of the Universal Declaration of Human Rights. It is certainly a good way to explore in the future, especially when European Union will approved a constitutional document which will provide the basis for a **European Index of Social Development**.

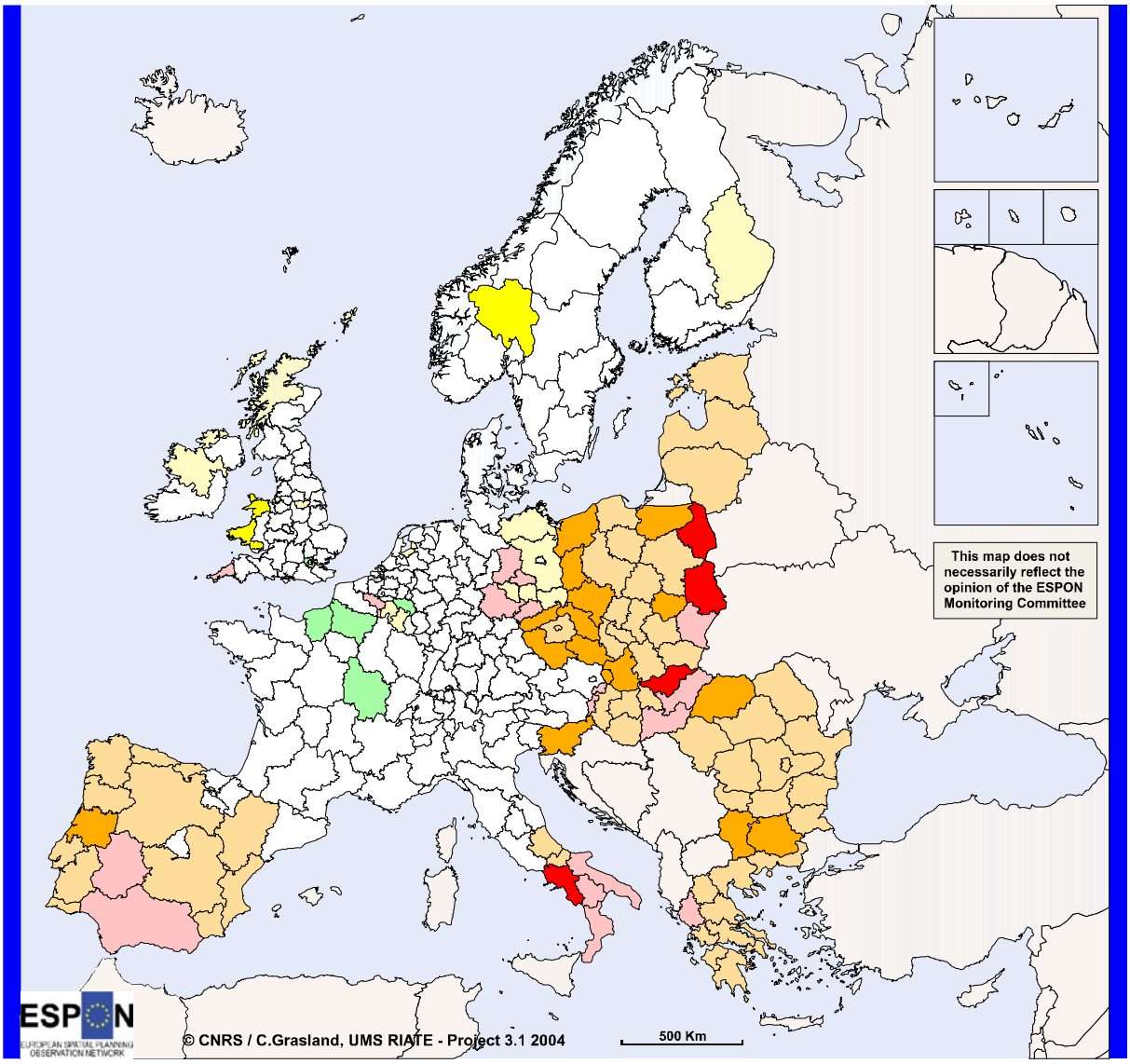
Another solution (which complete the previous one) is the introduction of a multiscalar approach of the target index at various scales. In terms of territorial cohesion, it is indeed very important to evaluate the level of development of a region according to at least three levels : european, national and local. If we use the famous criteria of 75%, we will find only four regions which can be considered as "lagging" for all criteria : *Eszak-Magyarorszag (HU) , Campania (IT), Lubelskie (PL) and Podlaskie (PL).*

Many other regions are "lagging" for only one or two criteria which implies specific actions at various levels. For example, the Austrian region of *Burgenland* can be considered as "lagging" at European and national level but is specifically "advantaged" at local level because of its common border with poorest regions of Hungary and Slovakia. This situation is very different from the region of *NE Bulgaria* which is "lagging" at European and local level (because of a common border with richest regions of Greece) but can rely on specific advantages at national level (capital region with Sofia).

The typology presented on **map 14** and the associate graphic representations of "lagging profile" could be a powerful tool for the improvement of regional policies … if it was applied to better indicators than GDP/inh…



Map 14 : GDP per capita (euro), 1999
Multiscalar typology of “lagging” regions



Under 75%

	European deviation	national deviation	local deviation
			X
		X	
		X	X
	X		
	X		X
	X	X	
	X	X	X

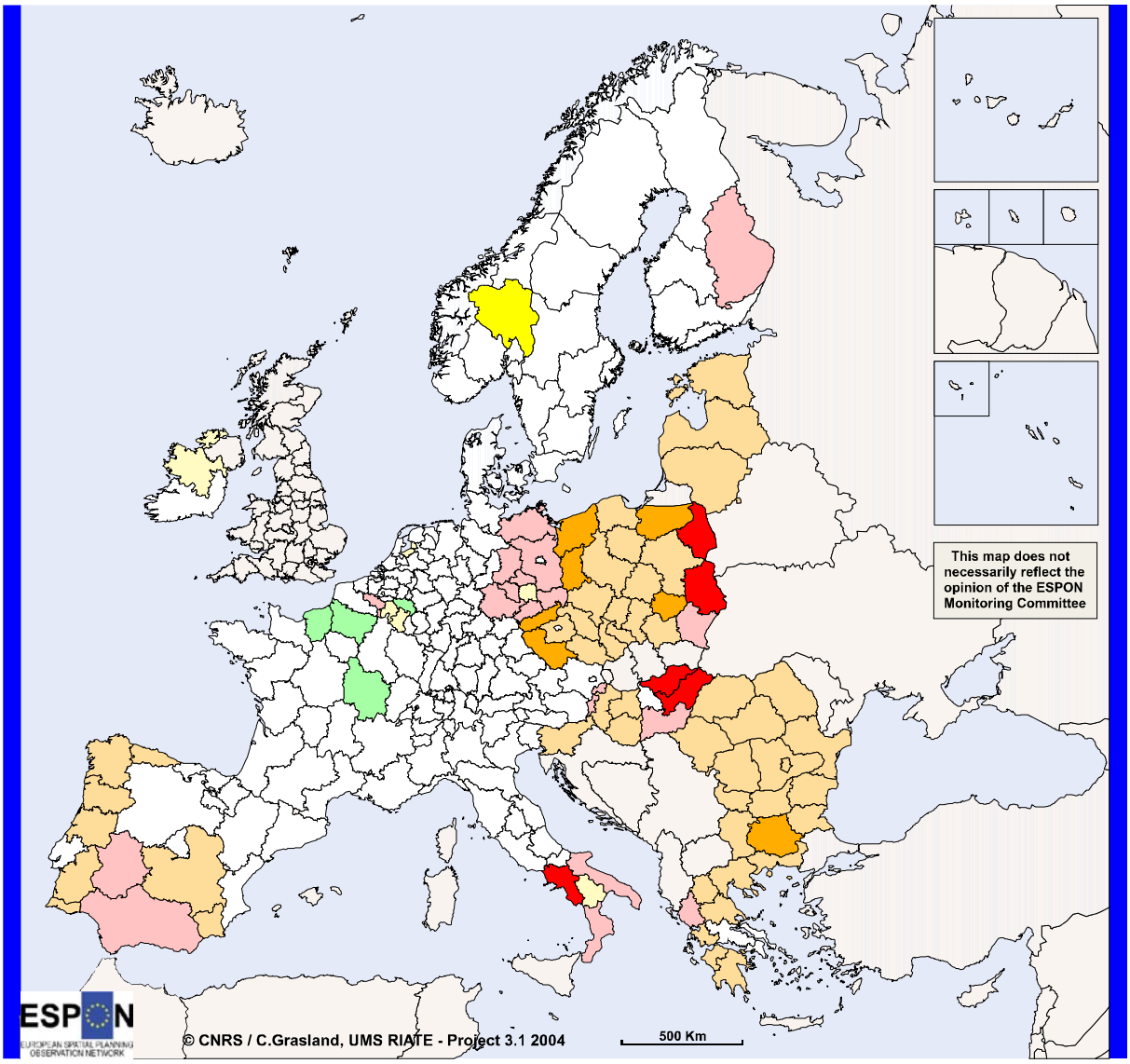
Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MAP 15 : GDP PER CAPITA (pps), 1999
MULTISCALAR TYPOLOGY OF "LAGGING" REGIONS

According to pps, the list of "absolute lagging" regions is increased from 4 to 6 with the regions of *West Wales and the Valley(UK)* and *Eszak-Alföld (HU)*. But a problem appears in the methodology defined previously because many ultra peripheral regions like Martinique, Guadeloupe, Reunion, Acores, Guyane are not classified in lagging regions. The explanation of this result is related to our definition of local deviation which is actually based on territorial contiguity (i.e. common border). According to this definition, the regions which has no neighbours are supposed to have no deviations at local level and obtain a conventional value of 100 for local deviations. Clearly, this solution is not acceptable and the typology should be revised in this particular case of regions without neighbours. A possible solution could be the use of the "nearest neighbour method" for regions without common borders with other regions.

Map 15 : GDP per capita (pps), 1999
Multiscalar typology of "lagging" regions



Under 75%

	European deviation	national deviation	local deviation
			X
		X	
		X	X
	X		
	X		X
	X	X	
	X	X	X

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MULTISCALAR TYPOLOGY OF "ADVANCED" REGIONS

Indicator

Typology based on the combination of three deviations

Political meaning

Combination of situations at various levels

Identification of regions with specific problems

More efficient typology of development

Topic of the maps

GDP per capita in euro then in pps

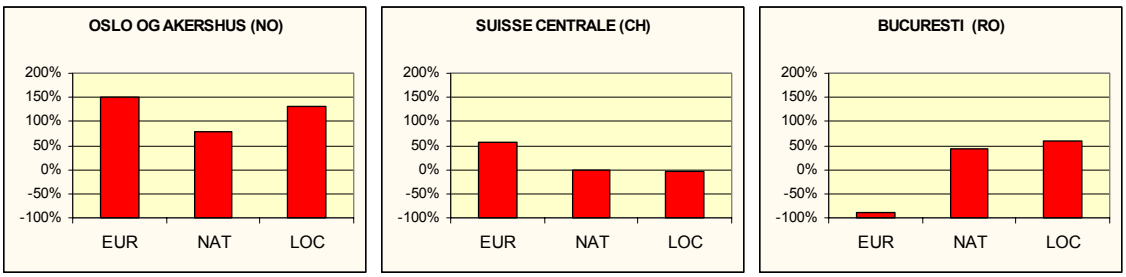
MAP 16 : GDP PER CAPITA (euro), 1999
MULTISCALAR TYPOLOGY OF "ADVANCED" REGIONS

As a symmetric to the concept of "lagging" regions, we can propose a multiscalar approach of the so-called "advanced" regions. As in previous case (see. p.46), the concept of "advanced" regions appears very criticable because it is too often based on few criteria defined at only one geographical scale of analysis. If we admit that the symmetric value of 75% (3/4) is 133% (4/3), we can propose a multiscalar typology of economic advanced regions through the classifications of regions which are 33% above the European, national or local mean of GDP/inh.(euro) in 1999.

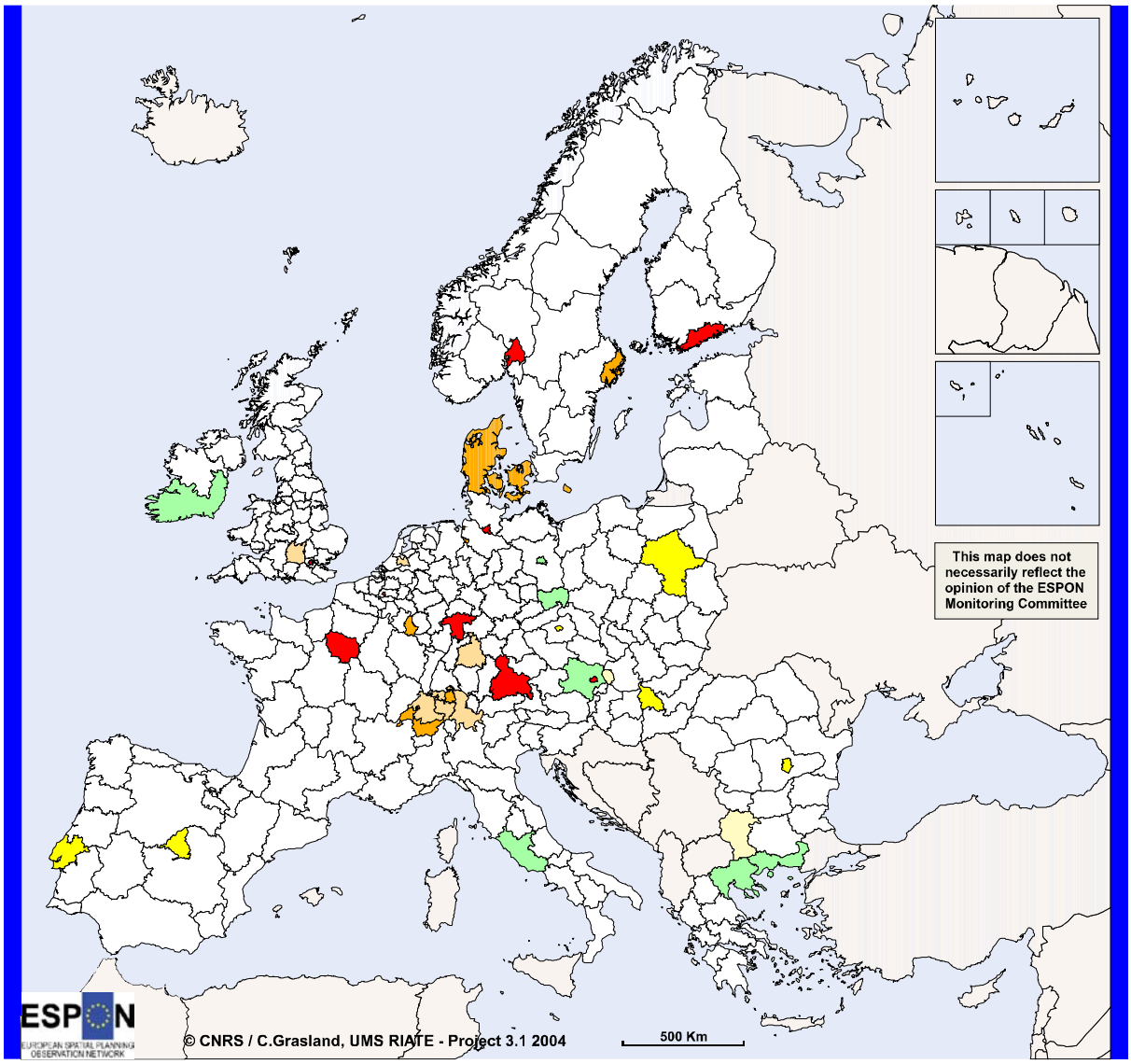
According to this criterion, only 9 regions can be considered as "fully advanced" whatever the geographical context. These are all metropolitan regions localised in North-Western part of Europe: *Wien, Bruxelles, Oberbayern (München), Hamburg, Darmstadt (Frankfurt), Uusimaa, Ile de France (Paris), Oslo og Akershus, Inner London.*

The regions of Switzerland are not in this category of "fully advanced" because of the relative equality of level of GDP/inh at national level (differences between Swiss regions are generally less than 33%). Luxembourg and Denmark are not placed in this category of "fully advanced" regions for a technical reason which is the fact that those states are composed of only one NUTS2 region, which make impossible the apparition of a positive deviation at national level. It is the same problem that the lack of local deviations for regions without neighbours like islands.

The most remarkable result of the typology is the apparition of a class of "capital of the periphery" which are characterised by very positive deviations at national and local level. *Budapest, Warsaw, Bratislava, Praha, Sofia, Bucuresti, Madrid and Lisboa* are very specific regions with common potentialities of economic development in the future.



Map 16 : GDP per capita (euro), 1999
Multiscalar typology of “advanced” regions



Above 133%

	European deviation	national deviation	local deviation
			X
		X	
		X	X
	X		
	X		X
	X	X	
	X	X	X

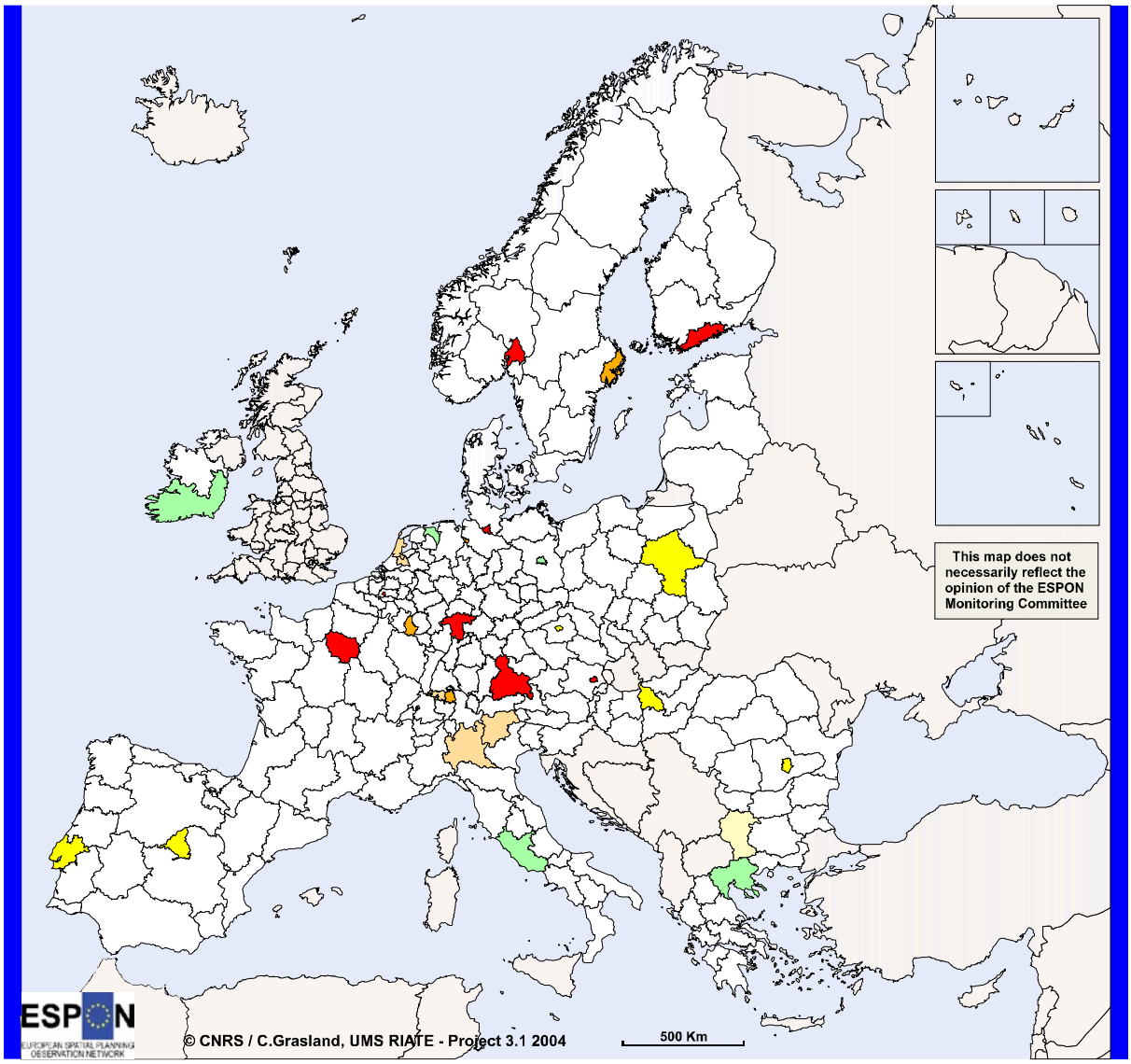
Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

MAP 17 : GDP PER CAPITA (pps), 1999
MULTISCALAR TYPOLOGY OF "ADVANCED" REGIONS

The use of GDP/inh in *pps* instead of *euros* introduce a strong reduction of "advanced" regions of Switzerland but has not very important effects on the list of the "full advanced" regions which are exactly the same than previously.

Map 17 : GDP per capita (pps), 1999
Multiscalar typology of "advanced" regions



Above 133%

	European deviation	national deviation	local deviation
			X
		X	
		X	X
	X		
	X		X
	X	X	
	X	X	X

Origin of data : EU15 and CC's, Eurostat Regio
Norway and Switzerland: National Statistical Offices

Source: Espon Database

Annex 1: Computation of indexes

Mathematical formula

DEVIATION TO GLOBAL LEVEL (European)

The deviation of a given region (i) to the European level is defined by equation (1) where Eur_j is a boolean variable which defines the reference area. In present case the reference area is equal to EU-15 which means than Eur_j takes the value 1 for regions of EU-15 and the value 0 for regions of the candidate countries. But it is possible to produce alternative maps with EU-25 or EU-27 as reference.

$$I_i^{Eur} = 100 \times \frac{GDP_i / POP_i}{\sum_j Eur_j \times GDP_j \Big/ \sum_j Eur_j \times POP_j} \quad (1)$$

DEVIATION TO MEDIUM LEVEL (National)

The deviation of a given region (i) to the National level is defined by equation (2) where Nat_{ij} is a boolean variable which defines if two regions i and j belong or not to the same area. In the present case the territorial belonging is defined by the state level which means than Nat_{ij} takes the value 1 for regions belonging to the same state and the value 0 for regions belonging to different states. Following the same principles, it is possible to produce alternative maps where the belonging is related to any other partition of the reference area into territorial areas of interest (e.g. Urban/rural ; Central/Semi-Peripheral/Peripheral).

$$I_i^{Nat} = 100 \times \frac{GDP_i / POP_i}{\sum_j Nat_{ij} \times GDP_j \Big/ \sum_j Nat_{ij} \times POP_j} \quad (2)$$

DEVIATION TO LOCAL LEVEL (Common border)

The deviation of a given region (i) to the local level is defined by equation (3) where Loc_{ij} is the variable which defines *the potential level of local interactions* between two regions i and j. In present case this level of local interaction is defined by a boolean variable which takes the value 1 for contiguous regions and the value 0 for non-contiguous regions In the present case, we have decided that a region is not neighbour to itself (Loc_{ii}=0) but it is possible to choose the solution where a region is part of its own neighbourhood (Loc_{ii}=1). Many alternative solutions are possible according for the definition of the neighbourhood criterion (kilometres time, cost, length of common boundary, …) and the measure of the potential level of interaction (it is not necessary boolean but can also be related to a continuous probabilistic function comprised between 0 and 1).

$$I_i^{Loc} = 100 \times \frac{GDP_i / POP_i}{\sum_j Loc_{ij} \times GDP_j \Big/ \sum_j Loc_{ij} \times POP_j} \quad (3)$$

IDENTIFICATION OF ABSOLUTE DISCONTINUITIES

In a first step, we propose to define the discontinuities through the computation of differences between regions based on absolute differences of GDP/inh. (formula 5). The absolute discontinuities are the limits between contiguous regions where those absolute differences are the highest[3]. For comparative reasons, we decide to define the level of discontinuity through the rank of differences between neighbouring regions: very high discontinuities for rank 1-20, high discontinuities for ranks 21-50 and medium discontinuities for rank 51-100. As there are 606 contiguities between regions, the discontinuities represent 17% of the limits between regions.

$$DIF_{ij}^{ABS} = \left| \frac{GDP_i}{POP_i} - \frac{GDP_j}{POP_j} \right| \quad (5)$$

IDENTIFICATION OF RELATIVE DISCONTINUITIES

In a second step, we propose to define the discontinuities through a computation of ratios between regions in order to compute relative differences of GDP/inh. (formula 6). The relative discontinuities are the limits between contiguous regions where those relative differences are the highest. In order to compare absolute and relative differences, we use the same system of classification based on the ranks of differences: very high discontinuities for rank 1-20, high discontinuities for ranks 21-50 and medium discontinuities for rank 51-100.
Relative differences could be computed with other mathematical formulas which are slightly more interesting from a scientific point of view[4]. But the ratio (max/min) has the great advantage of being much simpler to explain to non scientific users.

$$DIF_{ij}^{REL} = \frac{\max\left(\frac{GDP_i}{POP_i}, \frac{GDP_j}{POP_j} \right)}{\min\left(\frac{GDP_i}{POP_i}, \frac{GDP_j}{POP_j} \right)} \quad (6)$$

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[3] To be very precise, a discontinuity is not a limit between two neighbouring regions with different levels but between two **sets** of neighbouring regions with different levels. Indeed, discontinuities are limits between spatial subsystems which are necessary based on groups of regions and not of single regions.
[4] E.g. formula 2*(max-min)/(max+min) used for the maps of discontinuities produced in the SPESP.

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SUMMARY

ESPON
EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

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CNRS - DATAR - UNIVERSITE PARIS 7

Bundesamt
für Bauwesen und
Raumordnung

3rd

Interim Report

ESPON Project 3.1

Integrated Tools for European Spatial Development

Annex B
Europe in the World

Tuesday, 30 September 2003

European Spatial Planning Observatory Network
Espon 3.1 / Workpackage « Europe in the World »

TWELVE MAPS

TOWARD AN ESPON VISION OF "EUROPE IN THE WORLD"

2nd Version, October 2003

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Authors

Claude Grasland and **Christian Grataloup** are professors of Human Geography at University Denis Diderot (Paris 7) where they deliver a common teaching course on the Geography of the World. Both are members of the research unit Géographie-cités from the French National Centre for Scientific Research (CNRS). **Christian Grataloup** is a specialist in historical geography, graphic modelisation, Europe and Globalisation. **Claude Grasland** is a specialist in spatial analysis, geography of boundaries, regional economy and demography. He is currently director of the French Espon Contact Point (UMS RIATE).

Databases

The databases used in this report were elaborated jointly by the authors and by research engineers from the UMR Espace – Montpellier: **Patrick Brossier, Patricia Cicille and Guerino Sillère**. These research engineers have previously carried out most databases of the research group RECLUS and insured for example the achievement of the *Geographie Universelle Reclus* or the *Atlas de France*.

Documentation and correction

The documentation used for the preparation of this report on “Europe in the world” was prepared by **Bernard Corminboeuf**, research engineer of the UMS RIATE, French ESPON Contact Point. Some corrections to the map and manuscript were also added by other members of the UMS RIATE like **Gregory Hamez** and **Liliane Lizzi**.

Statistical analysis and mapping tools

Statistical analysis was performed with the softwares SAS© and XLSTAT©. Maps were elaborated with Arcview 3.1 ® or Philcarto ® and revised with Adobe® Illustrator®.

INTRODUCTION

The ESPON Programme 2006 focuses mainly on the European territory, but Europe is not a self contained system. It is important to have a look at external connections of the EU to get a complete picture of the status quo and possible future developments of the EU. Most studies developed in the framework of the ESPON Programme are based on databases limited to the EU and the candidate and neighbouring countries (EU27+CH+N) and do not take into account the relations between European territories and the rest of the world. However, many aspects of the internal differentiation of Europe are related to existing and potential flows between Europe and the rest of the world. This is especially true for the identification of gateway cities, polycentrism, spatial and social integration, etc.

According to its terms of reference, the TPG ESPON 3.1 is not in charge of the realisation of a complete study on "Europe in the world". But it has established a small work package on this subject because one of its mission is to "*fill the gaps*" of the ESPON programme and to propose new directions for further research. In its comment to the Second Interim Report of ESPON 3.1., the Coordination Unit indicated that "*The basic outcome [of the work package "Europe in the World of ESPON 3.1] should be the elaboration of a precise and thorough concept of the continuation of "Europe in the World" in the future ESPON work*. With a very limited allocation of funds[1], it was not possible to explore all directions of the concept of "Europe in the World" and the author of this preliminary study decided to focus their research on the three following topics.

1- **Toward an ESPON vision of Europe in the World** : The realisation of maps presenting the situation of Europe in the world is related to many technical questions (projection, framework, aggregation level, …) which are of crucial importance from scientific and political points of view. We discuss some of those problems through the example of the demographic situation of Europe.

2- **Europe in a World without boundaries** proposes a set of new representation of the World where the border of states are removed and where the potential effects of spatial proximity can be more easily evaluated. Of course, borders still exist but such maps help to understand the growing importance of trans-national flows of migration, investments, ideas, …

3- **The functional influence of Europe** is an attempt to define the territories of the World which are the most connected to Europe, according to air and trade flows. It is a crucial question for the ESPON programme which should extend the statistical coverage of his research to all the territories which are functionally integrated to Europe, whatever their political situation as candidate or non-candidate to join the EU.

[1] The work package « Europe in the World » has received an allocation of 10 000 Euros in the framework of ESPON 3.1.

PART 1

TOWARD AN ESPON VISION OF EUROPE IN THE WORLD

1.1 WHICH CARTOGRAPHICAL PROJECTION OF THE WORLD ?

1.2 WHICH DIVISIONS OF THE WORLD ?

1.3 WHICH SCALE OF ANALYSIS ?

1.4 WHICH POLITICAL MESSAGE ?

1.1 WHICH CARTOGRAPHIC PROJECTION OF THE WORLD?

The ESPON programme has recently decided to harmonize the maps which are produced in the network and the TPG 3.1 has proposed precise templates for the realisation of map of the European territory (projection, shape, design, …). In the future, it will certainly be necessary to propose equivalent rules for the realisation of maps of Europe in the world, which implies many choices which are not obvious and should be discussed at both scientific and political levels.

❖ A map of the World can get no satisfaction

The right planisphere does not exist. The transformation from sphere to plan implies necessarily a deformation of areas and/or angles and/or global shapes. Furthermore, a map of the World can get no satisfaction because the global world is economically organised as a ring around the earth (see. part C) when a map is a plane representation with edges defining a single center. The more traditional projections (*projections 1 and 2*), directed toward the north and centered on Europe, express rather well the world's organisation of the XIXth century when the Old Continent ruled the other regions of the Earth.

❖ A polycentric Europe…

But today we live in a polycentric world. And pictures which try to provide evidences of multiple centralities and competitive influence areas should not induce biases related to false polarisation introduced by the choice of map projections. It is the reason why we propose ESPON to choose a polar projection, setting Northern Hemisphere at the center, simply because it is the place where 90% of the human beings are living. Such a map can easily be revolved in order to emphasize the various centralities (*projections 6, 7 and 8*). Finally, it appears useful to keep the continuity of the earth surface, avoiding aphylactic maps where continents are floating in an unspecified mixture of ocean and "nothing" (*projections 3, 4 and 5*).

❖ …in a polycentric world

In the ESPON context, it is important to bring to the fore a map projection which gives the opportunity of a polycentric, but also universal, representation. Of course, Southern Hemisphere is badly treated (the disparition of Antartica), which proves that any planisphere introduces an implicit subjectivity. But, when looking at the maps of the second part of this report, we can verify that not only rich people but also the majority of poors are fairly represented with this map projection. Finally, none of the world economic centers is advantaged, as far as the user of such map can turned it in any directions. This implicite message is essential for the analysis of a polycentric Europe in a polycentric world.

In the rest of this annex, we have used the same projection of the World in order to evaluate its advantages or limits on various cartographic topics (territorial maps, continuous maps, flows, …).

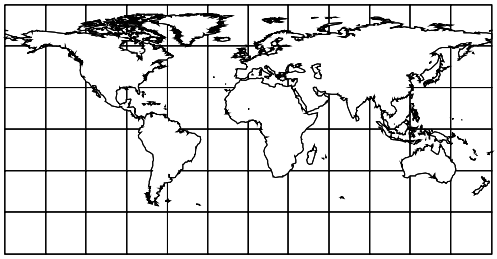
MAP 1

EIW0307_13

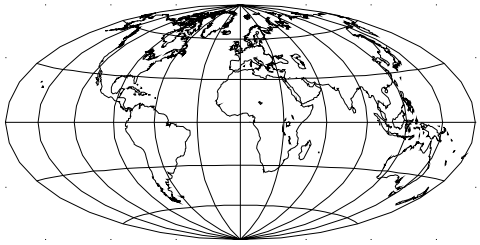
European Spatial Planning Observatory Network

ESPON 3.1 / Workpackage "Europe in the World"

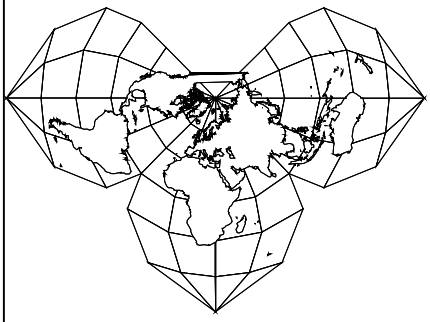
AN ESPON PROJECTION OF THE WORLD



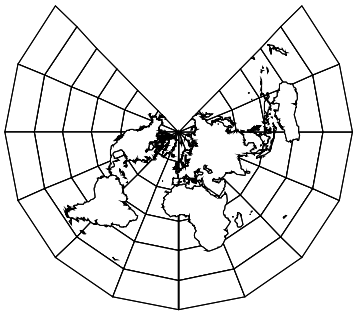
1 - Mercator



2- Hammer-Aïtof



3. Aphylactic I



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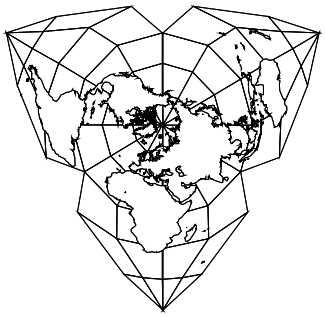
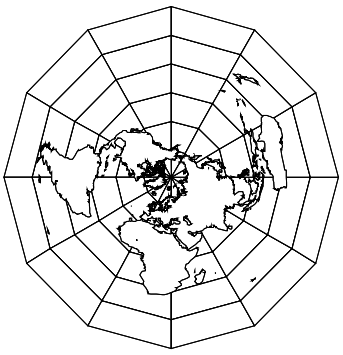
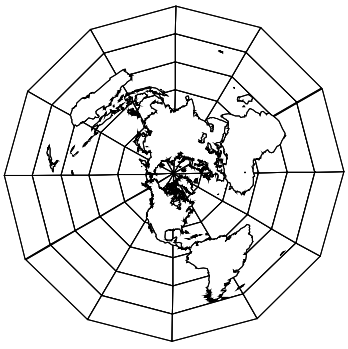


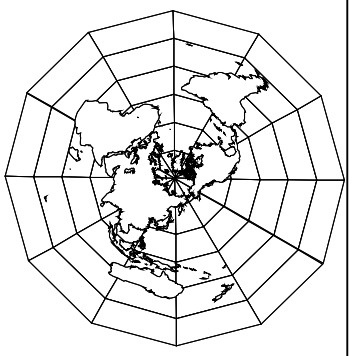
5-Aphylactic III



6. Polar / Europe



7- Polar / America



8- Polar / Eastern Asia

1.2 WHICH DIVISIONS OF THE WORLD?

The European Union as any international organisation should produce geographical divisions of the world adapted to their statistical, scientifical and political needs.

❖ The national level

The list of states that should be included in the ESPON database "Europe in the world" is not a trivial question. For example, it is well known that Taï-Wan is never present in the statistical databases of the United Nations because China does not recognise its existence as an independent state. But, on the other hand, the CIA has introduced Taï-Wan in its "World Factbook"[2] which presents the official position of US Government. An ESPON Atlas of the world would necessarily lead to difficult political questions because, as in the case of the World Factbook, it could be considered as a form of official position of the European Union.

❖ The "regional" level

More complicated but more important is the question of the delineation of "regions" of the world because it implies necessarily a mixture of ideological, scientific and political constraints. The 17 ESPON regions presented in **Map. 2** are a provisional typology which will be further improved by the results of the analysis of air and trade flows. The table 2 presents the main characteristics of those initial ESPON Regions of the World.

ESPON REGIONS	SUP	POP	URB	RUR	GDP1	GDP2	CO2
Western Europe	3.0	6.4	10.9	2.5	26.7	21.1	13.9
Central Europe	1.0	2.2	2.8	1.6	1.3	2.4	3.4
Eastern Europe	13.5	3.7	5.6	2.1	1.1	3.5	8.4
South and East Mediterannea	5.1	3.9	5.1	2.8	1.8	2.8	2.9
Western Africa	4.6	3.9	3.4	4.4	0.2	0.6	0.5
Central Africa	4.0	1.4	1.0	1.7	0.1	0.1	0.0
Eastern Africa	4.4	3.2	1.6	4.6	0.2	0.5	0.1
Southern Africa	5.2	2.4	2.0	2.8	0.6	1.2	1.7
Central Asia	3.0	0.9	0.8	1.0	0.1	0.4	1.2
Persian Gulf	3.8	2.2	3.1	1.5	1.1	1.5	3.9
Southern Asia	3.8	22.5	13.6	30.3	1.9	6.8	5.3
Northern America	16.1	6.8	11.1	3.0	36.0	25.8	27.8
Central America	4.4	3.1	4.4	1.9	1.3	1.9	2.0
Southern America	9.5	3.8	6.7	1.3	3.2	4.5	2.2
Eastern Asia	8.8	24.3	20.0	28.2	21.2	21.4	21.6
South-Eastern Asia	3.3	8.6	6.9	10.0	1.8	4.1	3.4
Oceania	6.4	0.5	0.8	0.3	1.5	1.4	1.6
World	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Criteria : SUP= area (km2) ; POP= Population (inhabitants) ; URB = Urban Population; RUR= Rural population ; GDP1=Gross Domestic Product ($); GDP2= Gross Domestic Product (pps); CO2=Carbon Dioxyde emissions (t.)

Source : ESPON 3.1 - "Europe in the World" / World Development Indicator 2002

[2] http://www.cia.gov/cia/publications/factbook/geos/tw.html

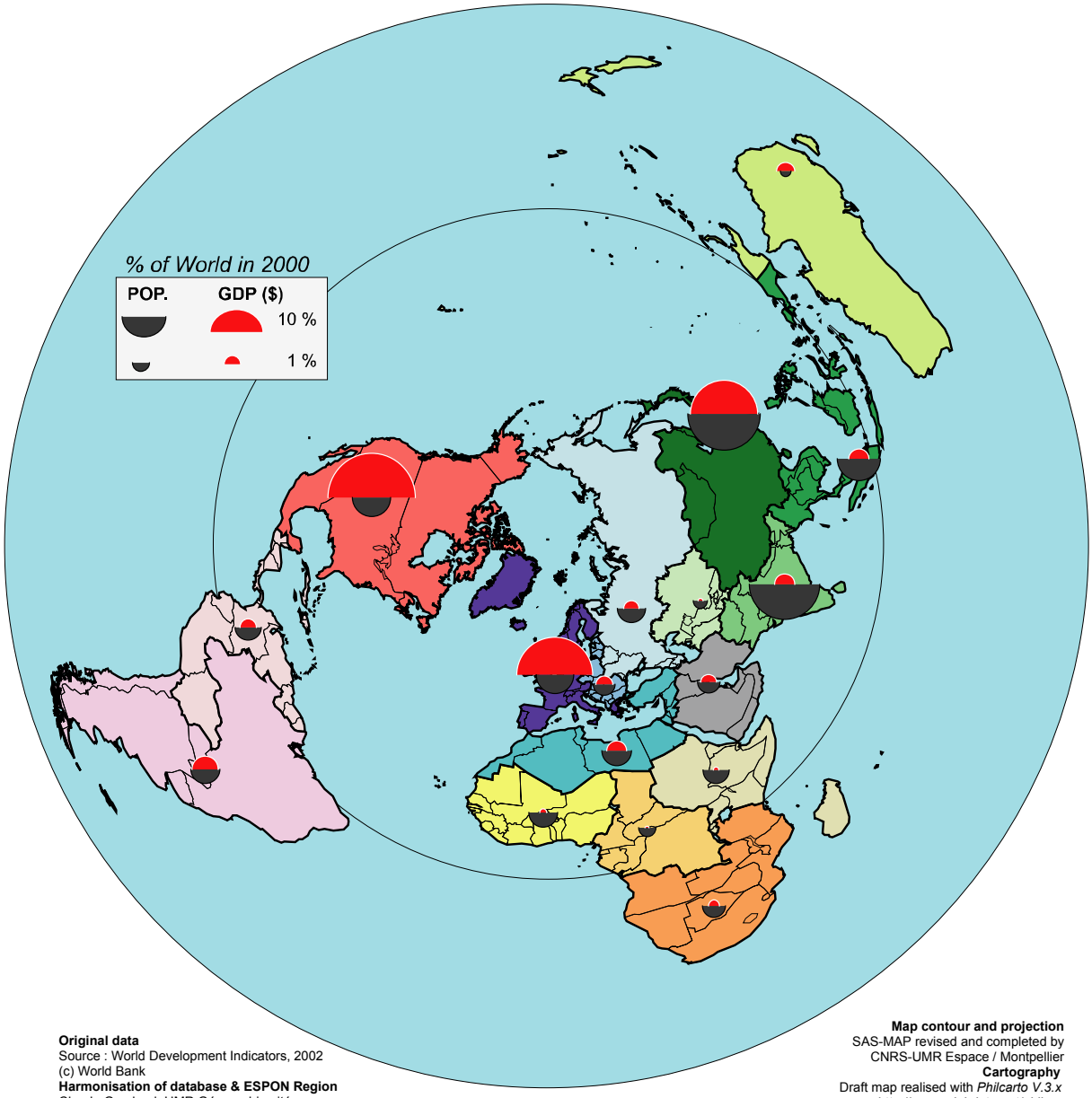
MAP. 2

EIW0307_2

European Spatial Planning Observatory Network

ESPON 3.1 / Workpackage "Europe in the World"

THE WORLD IN 17 ESPON REGIONS



Original data
Source : World Development Indicators, 2002
(c) World Bank
Harmonisation of database & ESPON Region
Claude Grasland, UMR Géographie-cités

Map contour and projection
SAS-MAP revised and completed by
CNRS-UMR Espace / Montpellier
Cartography
Draft map realised with *Philcarto V.3.x*
http://perso.club-internet/philgeo

- Western Europe
- East-Central Europe
- South and East Mediterranea
- Eastern Europe
- Middle-East
- Northern America
- Central America
- Southern America
- Eastern Asia
- South-Eastern Asia
- Southern Asia
- Central Asia
- Oceania
- Southern Africa
- Central Africa
- Western Africa
- Eastern Africa

1.3 WHICH GEOGRAPHICAL FRAMEWORK?

The fact to limit the research of the ESPON programme to EU27 or EU29 can produce illusions and mistakes in the analysis of main trends shaping the European territory. In many cases, the perception of inequalities, potentialities, polarisations … will be fully transformed according to the geographical shape and the basic territorial units used by the observers. As an example, we propose to consider how the map of the percentage of young (0-14 years) in 2000 is modified when the geographical framework is modified (**Map. 3**).

❖ A Global View

With a global view, the reader of the map will perceive a major opposition between Europe and Africa. Indeed, at the scale of the world divided in 17 ESPON regions, the lowest proportion of young are observed in Western, Central or Eastern Europe (less than 20%) and the highest in Africa and Middle East (more than 40%). The South and East Mediterranean countries appear in an intermediate situation with a proportion of young which is equal to the mean of the world (30-35 % of young).

❖ A Pan European View

With a restricted view on the pan-European area and a more precise territorial unit (the state level), the reader of the map will perceive a major opposition between North and South of the Mediterranean Sea. At this scale of analysis, we can indeed observe a discontinuity in the statistical distribution of the percentage of young with very few states characterised by the intermediate situation of 20-30% of young.

❖ An Espon View

With a restriction of the analysis to the ESPON space at NUTS 2 level, the reader of the map will perceive a completely different spatial opposition, with relatively low proportion of young in Central and Southern Europe and relatively high proportion in Northern, Western and Eastern Europe. From a global view, this internal differenciation of Europe would appear very limited, but for European policies it is important to deal with it because they produce an important differential of growth.

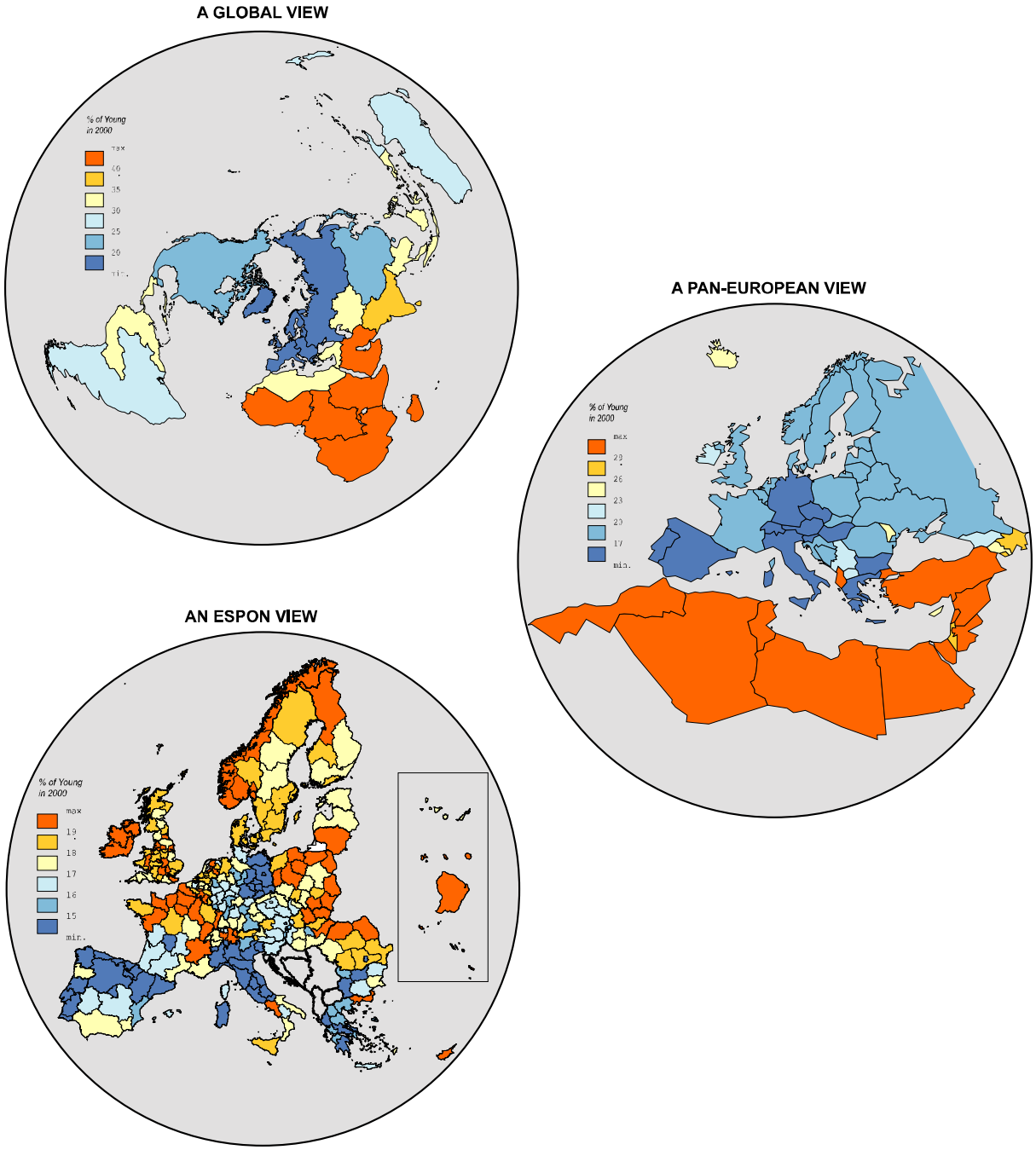
The problem is not to decide what is the best point of view between the previous ones but to be aware that they are absolutely complementary and that, whatever the target of the analysis, it is important to combine several scales of analysis. In concrete terms, the ESPON view is certainly the most interesting in a short term perspective. But the pan-European view and the global view should be taken into account when European policy makers try to elaborate strategies in a long term perspective.

MAP 3

EIW0310_14

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

THE INFLUENCE OF THE SPATIAL FRAMEWORK



(c) Grasland C., Grataloup C., 2003, CNRS-UMR Géographie-cités-GDR Libergeo

N.B. The partition of the statistical distribution in the three maps is different because the spatial framework is not the same. In each case, the spatial units in orange an yellow are located above the mean value of the reference area and the regions in blue are located under this mean value.

1.4 WHICH POLITICAL MESSAGE?

The maps are very powerful tools of communication and they can transmit implicit or explicit political message. As an example, consider the typology of age structure presented on **Map 4** and examine which political messages could be delivered by such a map if it was included in the Third Cohesion Report or the new version of the European Spatial Development Perspective.

- **An "old" Europe …**

This map indicates that the demographic structure of the world at the beginning of the 21th century is characterised by a very high level of heterogeneity. According to the timetable of their demographic transition, some states are characterised by over/under representations of young, adult, or old as compared to the world structure (**Map. 4**). The figures clearly indicate that Western, Central or Eastern Europe are all characterised by a deficit of young population (less than 20%) and an excedent of old (more than 12%) as compared to the rest of the world and especially to the Triade's challengers : Northern America or Eastern Asia.

- **… with "young" neighbours.**

But the map explains also that the regions of "Northern America" and "Eastern Asia" include economic peripheries with high demographic potential like Mexico for NAFTA and China for Japan. It is obvious that the situation of Europe would appear very different if the future scenarios include peripheral areas which are strongly related to Europe like S.E. Mediterranean countries, Africa, Central Asia or even Southern Asia.

ESPON REGIONS	Age structure (%)			Population (millions)
	0-14	15-64	65+	
Western Europe	17%	67%	16%	389
Eastern Europe	19%	69%	12%	226
Central Europe	19%	68%	13%	130
S.E. Mediterranean	34%	62%	5%	235
Western Africa	45%	52%	3%	237
Central Africa	47%	50%	3%	82
Eastern Africa	45%	53%	3%	194
Southern Africa	42%	55%	3%	147
Central Asia	34%	61%	5%	56
Persian Gulf	40%	57%	3%	134
Southern Asia	35%	60%	5%	1355
Northern America	24%	65%	11%	410
Central America	34%	61%	5%	187
Southern America	29%	65%	6%	231
Eastern Asia	24%	68%	8%	1469
South-Eastern Asia	32%	63%	5%	518
Oceania	25%	65%	10%	30
World	**30%**	**63%**	**7%**	**6029**

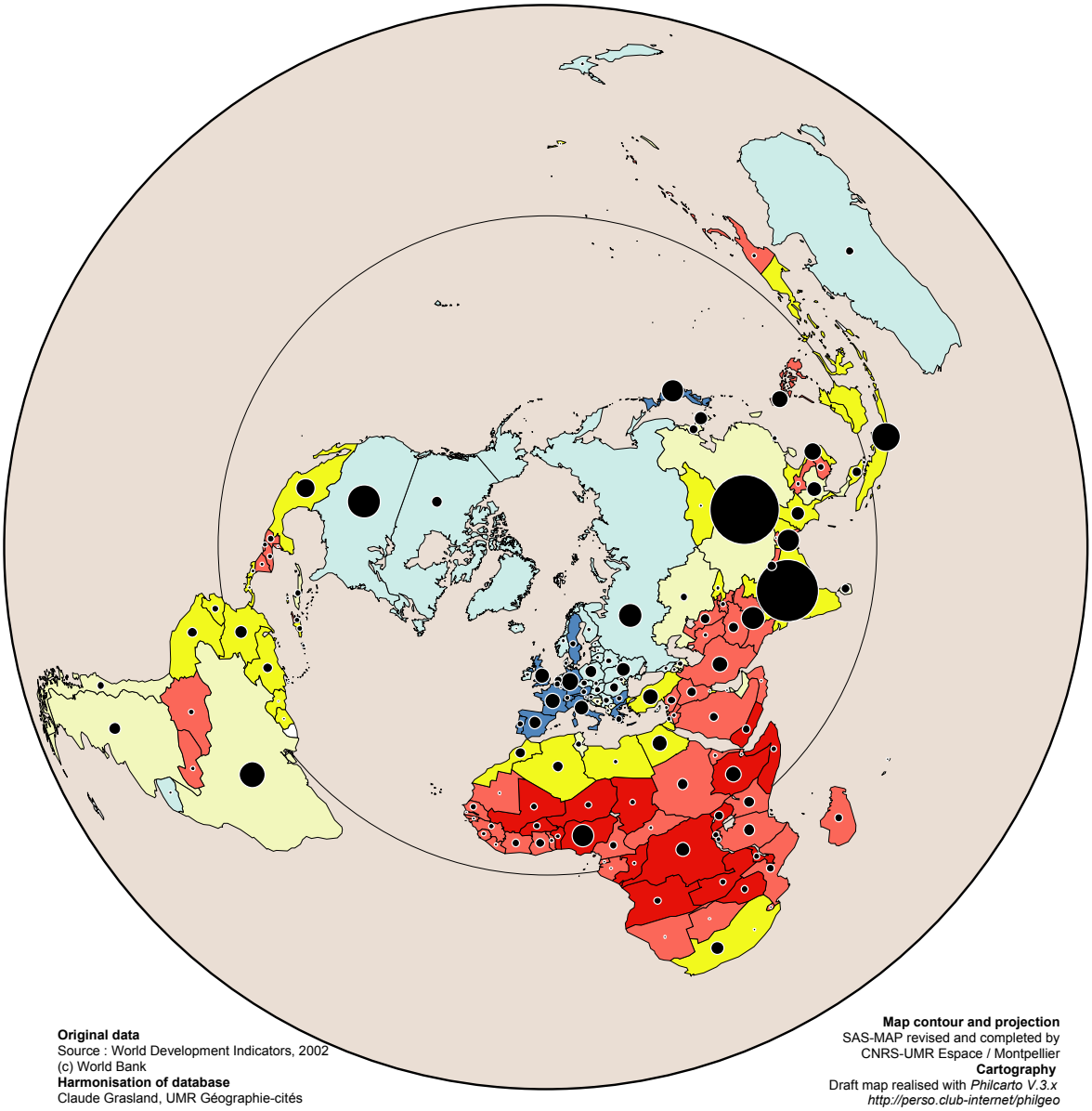
Source : ESPON 3.1 - "Europe in the World" / World Development Indicator 2002

MAP. 4

EIW0307_1

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

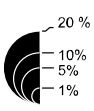
POPULATION AND AGE STRUCTURE 2000 / STATES

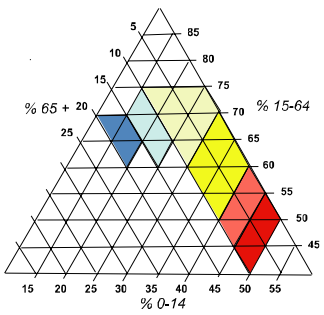


Original data
Source : World Development Indicators, 2002
(c) World Bank
Harmonisation of database
Claude Grasland, UMR Géographie-cités

Map contour and projection
SAS-MAP revised and completed by
CNRS-UMR Espace / Montpellier
Cartography
Draft map realised with *Philcarto V.3.x*
http://perso.club-internet/philgeo

SHARE OF THE WORLD POPULATION (%)





DEMOGRAPHIC SITUATION AS COMPARED TO THE WORLD

A) EXCEDENT OF YOUNG POPULATION
- Type A.1
- Type A.2

B) EXCEDENT OF ACTIVE POPULATION
- Type B.1
- Type B.2

C) EXCEDENT OF OLD POPULATION
- Type C.1
- Type C.2

(c) Grasland C., Grataloup C., 2003, CNRS-UMR Géographie-cités-GDR Libergeo

PART 2

EUROPE
IN A WORLD WITHOUT BOUNDARIES

2.1. “GEOGRAPHIC” POTENTIAL

2.2 DEMOGRAPHIC POTENTIAL

2.3 ECONOMIC POTENTIAL

2.4 POLLUTION POTENTIAL

2.1 "GEOGRAPHIC" POTENTIAL

The researchers of the Hypercarte Project have proposed new cartographic representations of the world which were first published in a CD-ROM on World population[3] and have received the 1st Price of Cartography at the International Festival of Géography from Saint-Dié-des-Vosges in 2000. Those maps which are based on a new smoothing method propose a vision of a world "without boundaries".

With a sample of those results, we propose to examine for which criteria (geographic, demographic, economic, …) is it possible to observe something that could be called "Europe" when we do not take into account the political division of the world between states ?

❖ Five continents …

Europe is commonly defined as one of the five continents. And a continent is usually defined as a kind of very large island. If we try to propose a neutral representation of the distribution of emerged lands we can note the existence of 4 to 5 large sets, of different sizes, apparently clearly distinct. But in fact, their degree of spatial separation is variable. If the two Americas are clearly distinct, as Australia and Antartica (which is not mapped according to the chosen map projection), Africa and Asia remain very closely joined together. A massive "Old World" is opposed to an archipelago of new worlds.

❖ …without Europe !

But the most significant fact is that this "geographical" approach of the world does not reveal any part of the world which could be assumed to be a European continent. Europe is not a natural fact but a social fact, a historical construction. It is funny to observe that the non-continent of Europe has been the place of the definition of continents for the entire world. According to this observation we don't use continents as an *a priori* operational tool for the regionalisation of the world. The ESPON programme should be free to use any other partition of the world which would be more relevant for its own objectives. If Europeans want to measure their current influence in the World, they are obliged to free from their own inheritance, from the *Weltanschauung* produced by their ancestors.

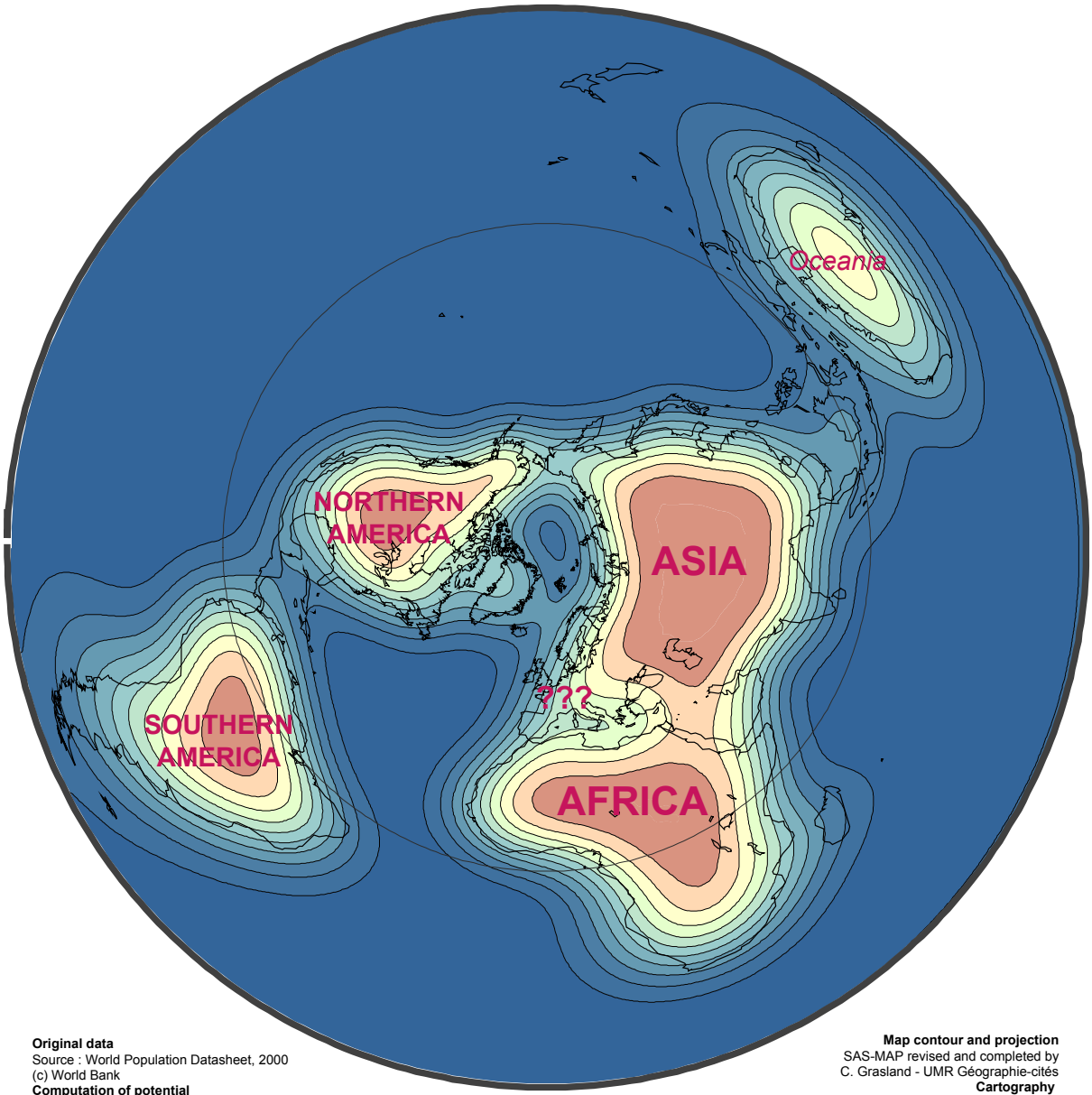
[3] **Pison G., Chesnais J.C., Grasland C., al. (1999),** *6 milliards d'hommes et moi*, CD-ROM, Syrinx, Paris.

MAP 5

EIW0307_11

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

WORLD "GEOGRAPHIC" POTENTIAL



Original data
Source : World Population Datasheet, 2000
(c) World Bank
Computation of potential
ID-IMAG / The Hypercarte Project

Map contour and projection
SAS-MAP revised and completed by
C. Grasland - UMR Géographie-cités
Cartography
Map realised with Surfer

Area located in a gaussian neighbourhood span 1000 km

1100
1000
900
800
700
600
500
400
300
200
100
0

Thousands of km2

The areal potential of a point at the surface of the earth is a sum of all points of the World not covered by sea weighted by a decreasing function of distance. The function used in this analysis is a gaussian function $f(d) = \exp(-a.d^2)$ where $f(1000\ km) = 0.5$

For more details , see.

Grasland C., Madelin M.,2001, The unequal distribution of population and wealth in the World , *Population et Société*, INED, 4 p. (*http://www.ined.fr/englishversion/publications/pop_et_soc/pesa368.pdf*)

2.2 DEMOGRAPHIC POTENTIAL

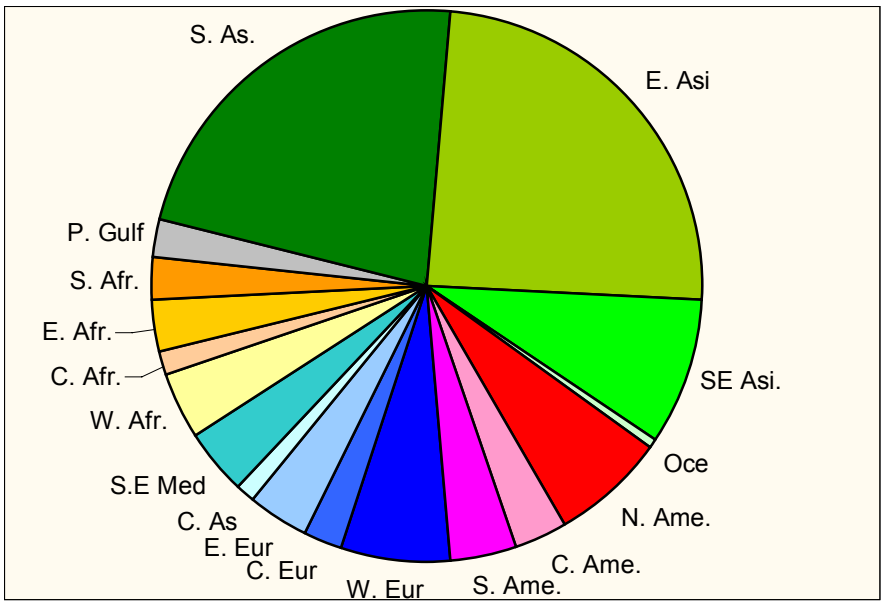
❖ The 3rd demographic centre of the World.

The most significant part of the world population is concentrated in three peaks of population located in "Eurasia". The peaks of population located in the rest of the world appear clearly of secondary importance (NE. of Northern America, Atlantic coast of Southern America, Western Africa, Eastern Africa, SE. of Australia). The major node of population is composed of two major neighbouring peaks (Eastern Asia and Southern Asia). Europe is clearly separated from the twinning demographic giants of Asia by a clear discontinuity which follows more or less the Ural.

❖ With wider extension than usual definition of Europe.

Accordingly, it appears that Europe which was a "geographic" fiction is a demographic reality. But the demographic concentration of population which has its centre in Europe is not limited to the classical boundaries of EU15 or EU27. Europe is "potentially" the 3rd concentration of population in the World as far as it develops relations and exchange with neighbouring areas. Western Europe only represents 6.4% of the world population which is less than the NAFTA. With the addition of Central Europe, we obtain an amount of 8.6% of the world population which is just equivalent to South-Eastern Asia. It is only with the addition of wider peripheries that Europe can reach a potential of population equivalent to the one of China or India.

World population by ESPON region in 2000



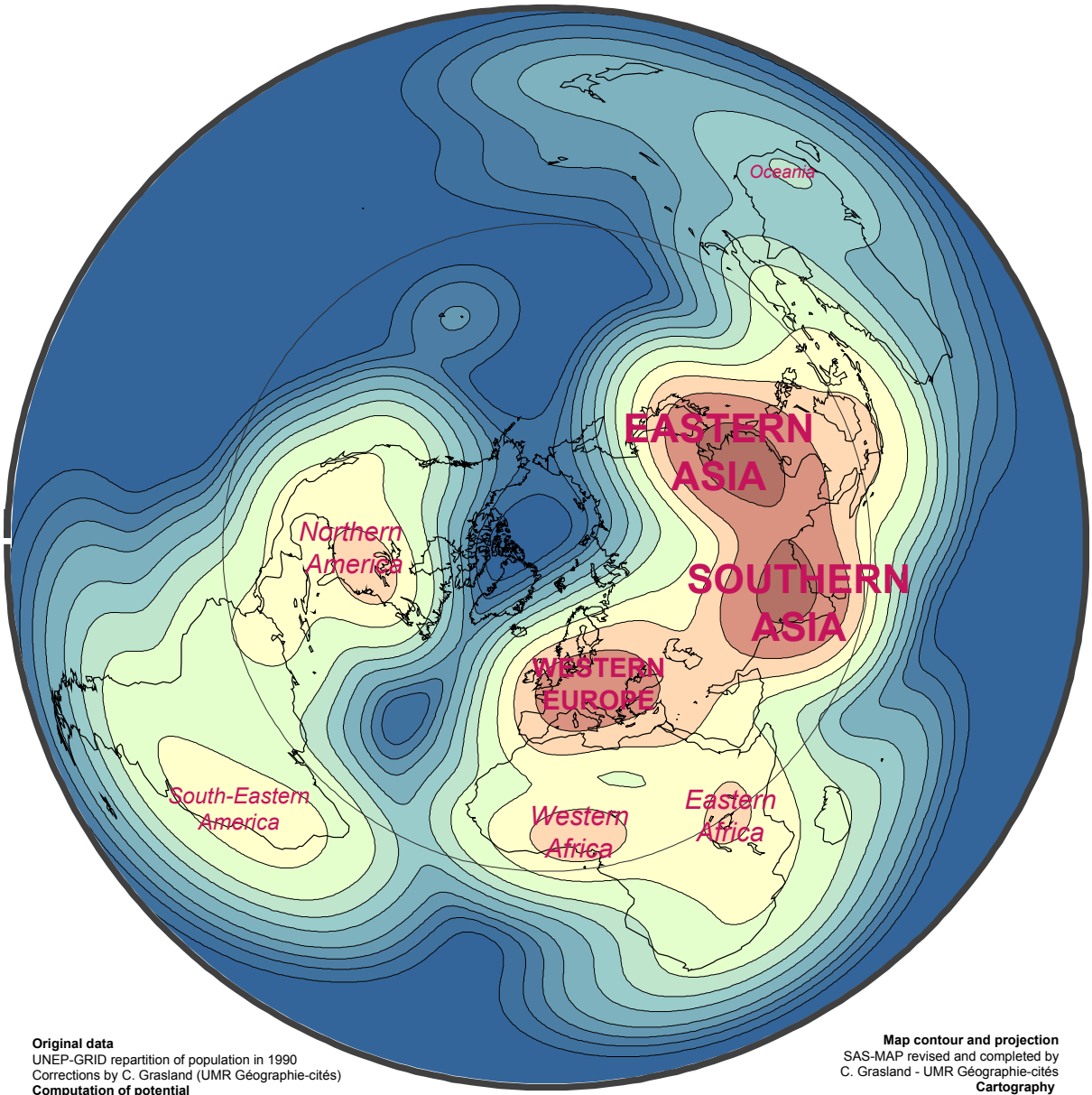
Source : ESPON 3.1 - "Europe in the World" / World Development Indicator 2002

MAP 6

EIW0307_10

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

WORLD DEMOGRAPHIC POTENTIAL



Original data
UNEP-GRID repartition of population in 1990
Corrections by C. Grasland (UMR Géographie-cités)
Computation of potential
ID-IMAG / The Hypercarte Project

Map contour and projection
SAS-MAP revised and completed by
C. Grasland - UMR Géographie-cités
Cartography
Map realised with Surfer

Population 1990 located in a gaussian neighbourhood span 1000 km

500
200
100
50
20
10
5
2
1
0.5
0.2
0

millions of inhabitants

The demographic potential of a point at the surface of the earth is a sum of all population of the World weighted by a decreasing function of distance. The function used in this analysis is a gaussian function $f(d) = \exp(-a.d^2)$ where $f(1000\ km) = 0.5$

For more details , see.

Grasland C., Madelin M.,2001, The unequal distribution of population and wealth in the World , *Population et Société*, INED, 4 p. (*http://www.ined.fr/englishversion/publications/pop_et_soc/pesa368.pdf*)

2.3 ECONOMIC POTENTIAL

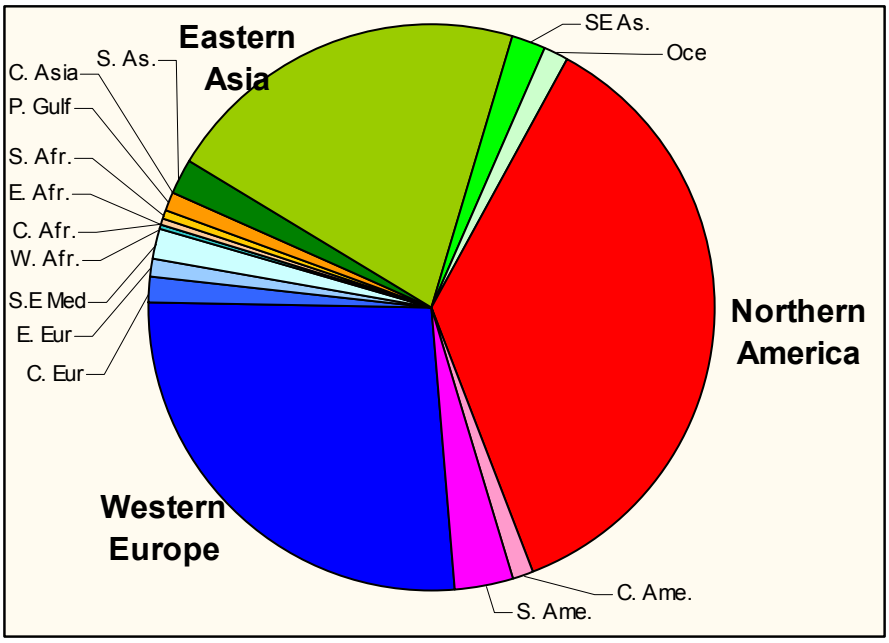
❖ World economy and the Triad

As concerns wealth, measured here in terms of GNP in US dollars in 1995 (see map 7), the peaks of concentration are distributed in a simpler fashion, roughly a large northern triad (United States and Canada, Europe and Near-East, East Asia), and a small Southern triad (Brazil-Argentina, South Africa, Australia-New Zealand). Minor concentrations of wealth can be observed in Nigeria and in isolated peaks in the Pacific (Hawaii, French Polynesia).

❖ Scale parameter and polycentrism

However, this new point of view also raises a host of theoretical and methodological potential variations which will be discussed in our final report. Indeed, a change in the choice of radius of smoothing (250, 500, 2,000 km) would modify the location and relative importance of the main hubs of population and wealth[4]. It would also give more information on the internal spatial structure of each peak of concentration: monocentric for Western Europe, polycentric for Northern America, axial for Eastern Asia.

World GDP ($) by ESPON region in 2000



Source : ESPON 3.1 - "Europe in the World" / World Development Indicator 2002

[4] Gilles PISON (dir.), Jean-Claude CHESNAIS, Claude GRASLAND, al. – *6 milliards d'hommes ... et moi*, CD-Rom, Éditions Syrinx, 1999.

MAP 7

EIW0307_8

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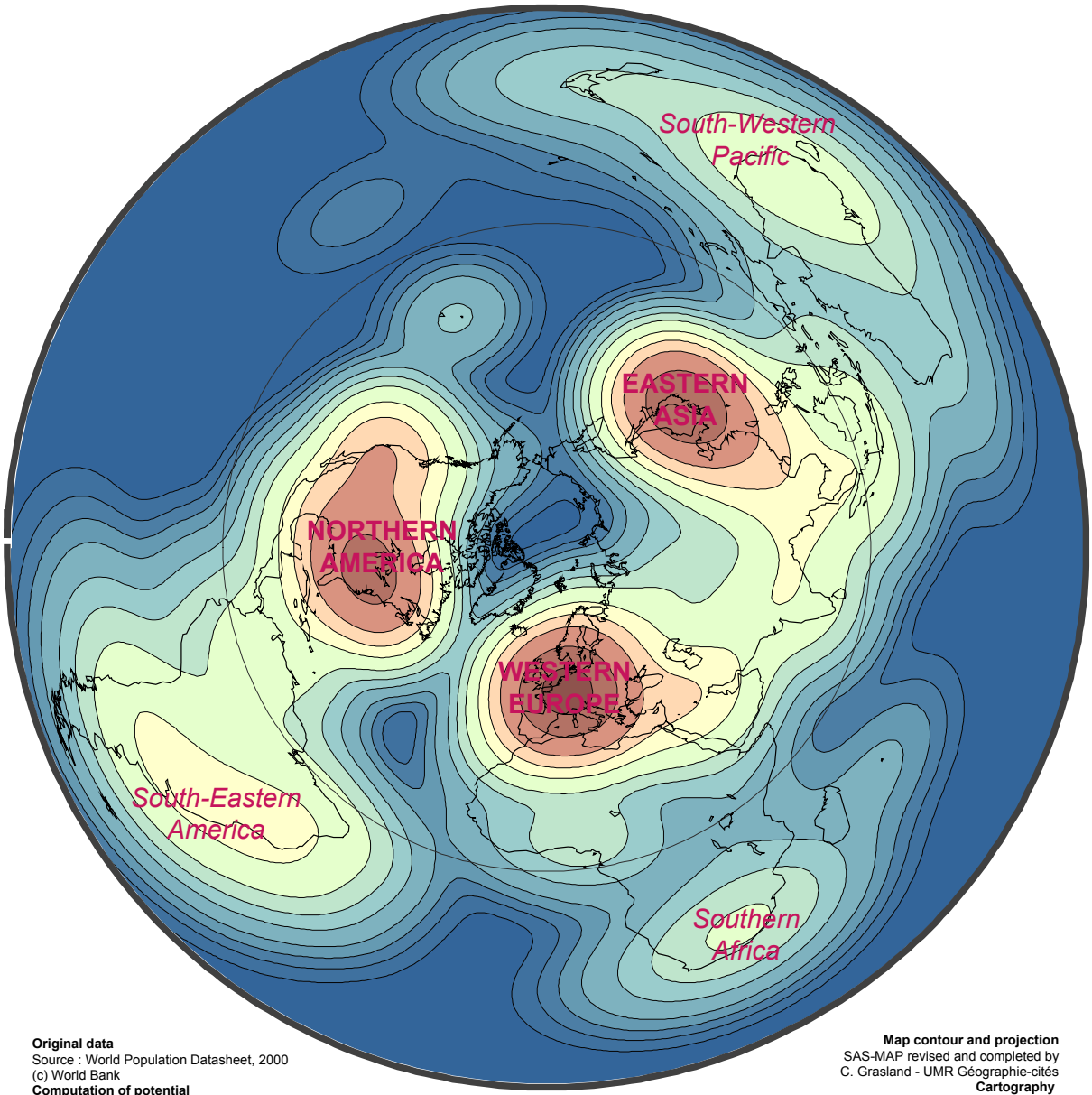
WORLD ECONOMIC POTENTIAL



Original data
Source : World Population Datasheet, 2000
(c) World Bank
Computation of potential
ID-IMAG / The Hypercarte Project

Map contour and projection
SAS-MAP revised and completed by
C. Grasland - UMR Géographie-cités
Cartography
Map realised with Surfer

GDP 1995 located in a gaussian neughbourhood span 1000 km

5000
2500
1000
500
250
100
50
25
10
5
2.5
1
0

billions of US $

The economic potential of a point at the surface of the earth is a sum of all local economic concentrations of GDP weighted by a decreasing function of distance. The function used in this analysis is a gaussian function $f(d) = \exp(-a.d^2)$ where $f(1000\ km) = 0.5$

For more details , see.

Grasland C., Madelin M.,2001, The unequal distribution of population and wealth in the World , *Population et Société*, INED, 4 p. (*http://www.ined.fr/englishversion/publications/pop_et_soc/pesa368.pdf*)

2.4 POLLUTION (CO2) POTENTIAL

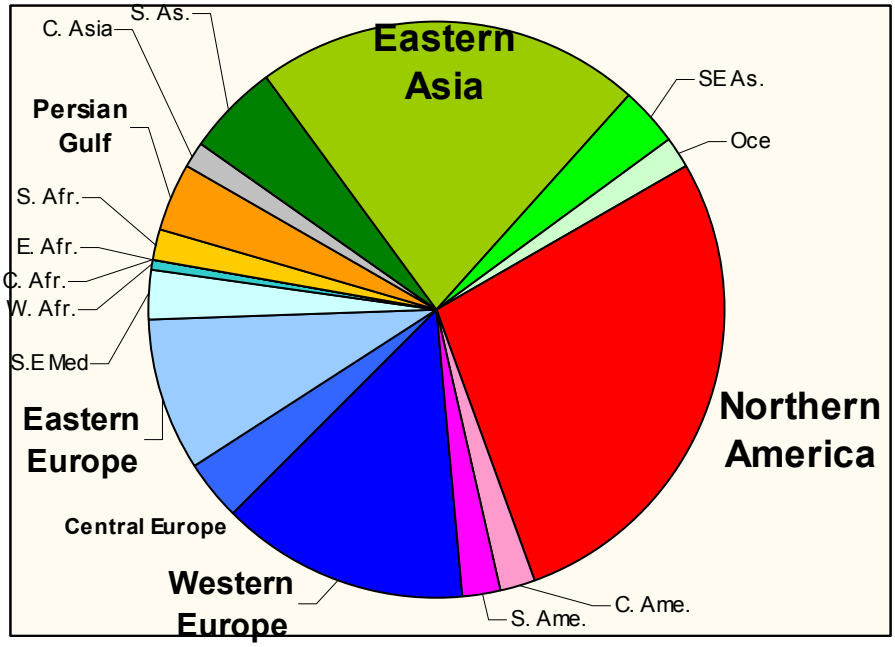
❖ World sustainability and the Triad

In usual publications, the distribution of CO^2 emissions is presented in the framework of territorial units which can be states or regions of the world. This territorial presentation of reality induces some implicit way of thinking which can influence the decision-maker. In particular, the use of territorial delimitation will favour the idea of a *market* of pollution with identified *actors* having rights to produce some quotas according to their size (economic, demographic) and being able to buy the rights of pollution of the other actors. The continuous approach of the reality presented in **Map 8** is more relevant because it reveals the direct correlation between world economic organisation and world distribution of pollution.

❖ The ecological responsibility of Europe.

The centres of the Triad have a tendency to export their pollution to neighbouring countries. It is especially true in the case of Europe where the model of industrial development of the XIXth century was adopted by socialist countries, but also in the case of Japan which exports its model toward China or Korea. A reduction of pollution in Western Europe will produce no real ecological effects if the CO2 emissions are simply transferred toward Eastern Europe or Africa. A map without boundaries demonstrates that Europe is an economic and ecological reality and that both phenomena are clearly interrelated.

World Pollution (CO2 emissions) by ESPON region in 2000



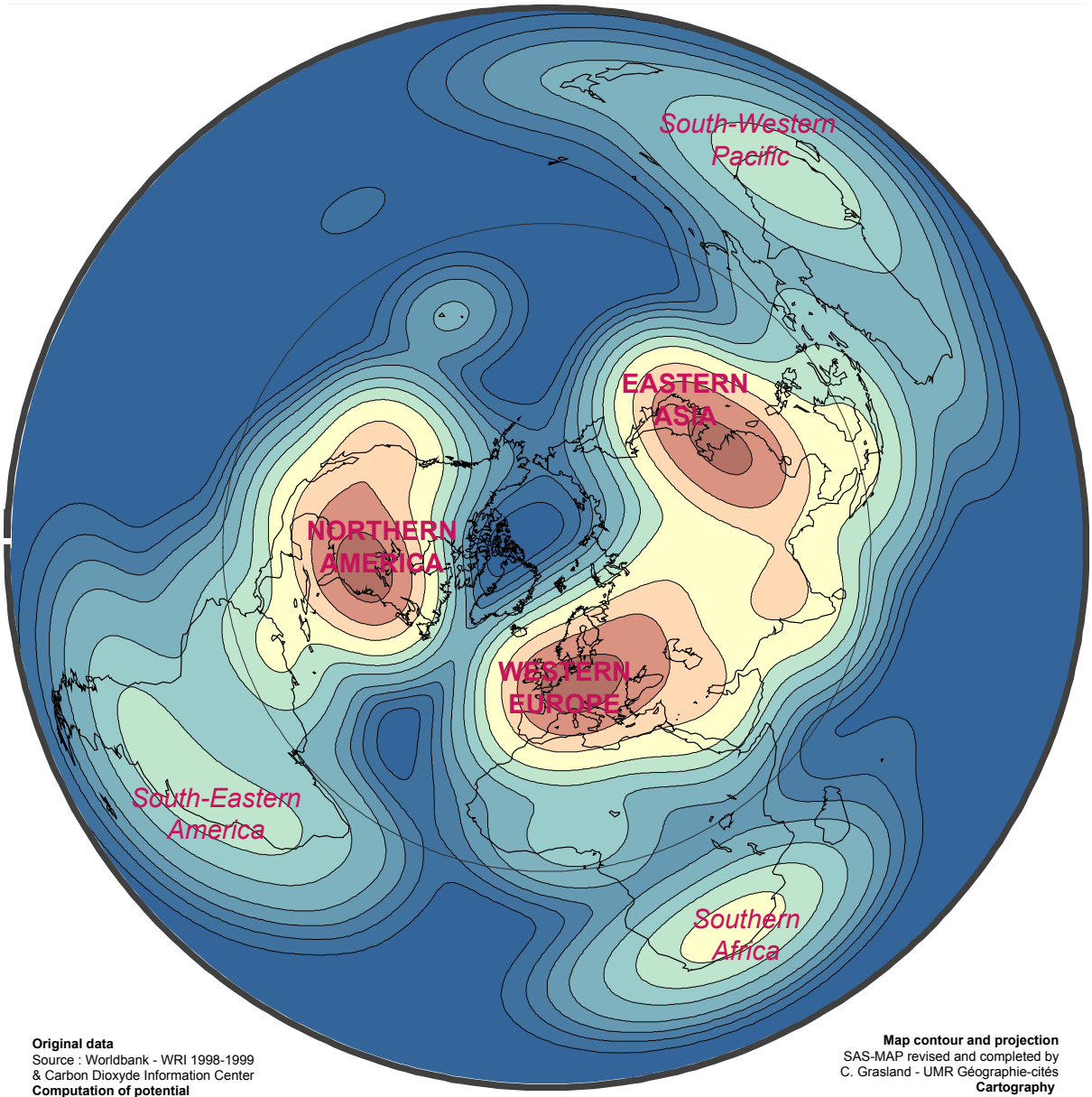
Source : ESPON 3.1 - "Europe in the World" / World Development Indicator 2002

MAP 8

EIW0307_12

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

WORLD POLLUTION (CO2) POTENTIAL



Original data
Source : Worldbank - WRI 1998-1999
& Carbon Dioxyde Information Center
Computation of potential
ID-IMAG / The Hypercarte Project

Map contour and projection
SAS-MAP revised and completed by
C. Grasland - UMR Géographie-cités
Cartography
Map realised with Surfer

CO2 Emissions 1998 located in a gaussian neighbourhood span 1000 km

10000
5000
2000
1000
500
200
100
50
20
10
5
2
0

millions of t.

The pollution potential of a point at the surface of the earth is a sum of all local emissions of carbon dioxyde weighted by a decreasing function of distance. The function used in this analysis is a gaussian function $f(d) = \exp(-a.d^2)$ where $f(1000\ km) = 0.5$

For more details , see.

Grasland C., Madelin M.,2001, The unequal distribution of population and wealth in the World , *Population et Société*, INED, 4 p. (*http://www.ined.fr/englishversion/publications/pop_et_soc/pesa368.pdf*)
Grasland C., 2001, Mapping CO2 emissions on the earth (ca. 1995) : Cartographical problems and political issues, *Annales des Mines - Réalités Industrielles*, pp. 79-87 (*ISSN 2.7472.0276.3*)

PART 3

THE FUNCTIONAL INFLUENCE AREA OF EUROPE

3.1. MAIN INTER-REGIONAL FLOWS / AIR 2000

3.2 MAIN INTER-REGIONAL FLOWS / TRADE 1996-2000

3.3 EUROPE INFLUENCE AREA / AIR FLOWS 2000

3.4 EUROPE INFLUENCE AREA / TRADE FLOWS 1996-2000

3.1. MAIN INTER-REGIONAL FLOWS / AIR 2000

❖ **Western Europe represents 50% of international air flows …**

According to the database from the ITA, Western Europe is the origin or the destination of 50% of the international air flows of passengers in 2000. This important share is partly due to the importance of air traffic between Western European countries (70 % of intra-regional flows!) and the comparison with Northern America is biased because flows inside the United States are not taken into account. Western Europe presents the highest level of regional integration with 71% of international flows which are internal to the region[5]

❖ **…and 30% of interregional air flows.**

If we consider only interregional flows, the comparison becomes possible and one can demonstrate that *Western Europe is the major centre of the world air traffic with 30% of interregional passenger flows in 2000.* It is equivalent to the sum of the interregional air traffic of the other members of the Triad: Northern America (19.8%) and Eastern Asia (11.6%). The main air traffic flows of passengers from Western Europe are directed to Northern America (62 millions), South and East Mediterranea (38 millions), and Central Europe (23 millions). Other important flows are directed to Eastern Asia (12 millions), South-Eastern Asia (9 millions) and Central America (9 millions) and at a less degree to Persian Gulf (5.5 millions), Eastern Europe (5 millions), Southern Asia (4 millions) and Southern America (4 millions each).

ESPON REGIONS	International		Intra-regional		Inter-regional		Regional integration
	Millions Pass.	%	Millions Pass.	%	Millions Pass.	%	
Western Europe	628.2	50.5%	443.9	70.1%	184.3	30.2%	**0.71**
Central Europe	26.9	2.2%	1.4	0.2%	25.5	4.2%	**0.05**
Eastern Europe	6.3	0.5%	0.0	0.0%	6.3	1.0%	**0.00**
South and East Mediterannea	47.7	3.8%	1.7	0.3%	46.0	7.5%	**0.04**
Western Africa	4.7	0.4%	1.1	0.2%	3.6	0.6%	**0.23**
Central Africa	0.9	0.1%	0.2	0.0%	0.8	0.1%	**0.19**
Eastern Africa	3.9	0.3%	0.2	0.0%	3.7	0.6%	**0.05**
Southern Africa	4.6	0.4%	0.0	0.0%	4.6	0.8%	**0.00**
Central Asia	0.8	0.1%	0.0	0.0%	0.8	0.1%	**0.04**
Persian Gulf	22.9	1.8%	5.9	0.9%	17.0	2.8%	**0.26**
Southern Asia	15.7	1.3%	2.3	0.4%	13.4	2.2%	**0.15**
Northern America	171.0	13.8%	50.4	8.0%	120.6	19.8%	**0.29**
Central America	36.9	3.0%	3.9	0.6%	33.0	5.4%	**0.11**
Southern America	16.7	1.3%	6.4	1.0%	10.3	1.7%	**0.38**
Eastern Asia	148.2	11.9%	77.6	12.2%	70.7	11.6%	**0.52**
South-Eastern Asia	79.4	6.4%	29.8	4.7%	49.6	8.1%	**0.38**
Oceania	28.1	2.3%	8.5	1.3%	19.6	3.2%	**0.30**
World	**1243.3**	**100.0%**	**633.4**	**100.0%**	**609.9**	**100.0%**	**0.51**

Original data : CD-ROM IT00.XLS (c) ITA - Institut du Transport Aerien
Harmonisation of database : Brossier P., Cicille P., Sillère G. CNRS - UMR Espace / Montpellier

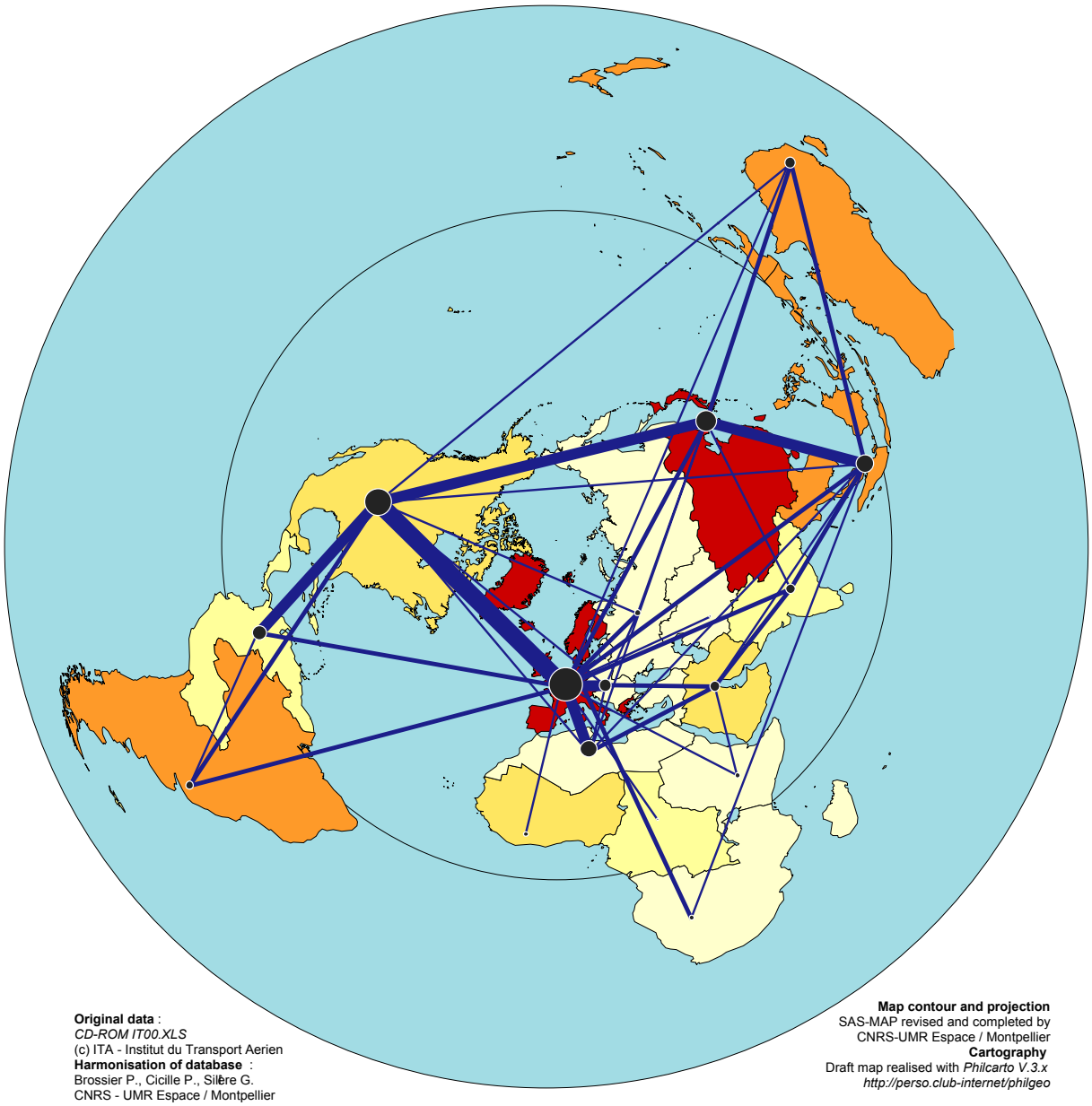
[5] But this index is biased because it is related to internal political divisions which are higher in Europe. It is the reason why we will eliminate intra-regional traffic (flows between states of the same ESPON region) in further analyses.

MAP 9

EIW0307_4

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

INTER-REGIONAL FLOWS / AIR TRAFFIC 2000



Original data :
CD-ROM IT00.XLS
(c) ITA - Institut du Transport Aerien
Harmonisation of database :
Brossier P., Cicille P., Silère G.
CNRS - UMR Espace / Montpellier

Map contour and projection
SAS-MAP revised and completed by
CNRS-UMR Espace / Montpellier
Cartography
Draft map realised with *Philcarto V.3.x*
http://perso.club-internet/philgeo

Main interregional flows

- > 40 millions
- 15-40 millions
- 3-15 millions
- 0.3 - 3 millions

Sum of interregional flows

- 200 millions
- 50 millions
- 10 millions

Regional integration

- 50 %
- 40 %
- 30 %
- 20 %
- 10 %
- 0 %

3.2 MAIN INTER-REGIONAL FLOWS / TRADE 1996-2000

❖ **Western Europe represents 37 % of international trade flows …**

In order to obtain a structural evaluation of flows, independent from conjonctural yearly fluctuations, the GDR Libergeo (UMR Espace-Montpellier & UMR Géographie-cités) has established a matrix of the mean value of trade flows between states during the time period 1996-2000 without distinction of direction (mean of import and export[6]). According to this robust estimator, we can demonstrate that Western Europe has been the origin or the destination of more than 37% of trade flows during the last years[7].

❖ **…and 24 % of interregional flows.**

If we consider only interregional flows, Western Europe remains the main centre of world trade (24%) but its total of interregional flows appears slightly equivalent to the one of the other members of the Triad (22% for Northern America and 21% for Eastern Asia). The main bilateral trade flows of Western Europe are logically related to Northern America (210 billions of $) and Eastern Asia (155) but very important flows can also be observed with the neighbouring regions of Central Europe (91) and S.E. Mediterranea (62) and with S.E. Asia (53). Important commercial relations take place also with Southern America (26), Eastern Europe (26) and Persian Gulf (23).

ESPON REGIONS	International		Intra-regional		Inter-regional		Regional integration
	Billions $	%	Billions $	%	Billions $	%	
Western Europe	1990.8	37.1%	1268.1	54.7%	722.6	23.7%	0.64
Central Europe	145.4	2.7%	20.5	0.9%	124.9	4.1%	0.14
Eastern Europe	82.0	1.5%	18.8	0.8%	63.2	2.1%	0.23
South and East Mediterannea	110.4	2.1%	6.0	0.3%	104.3	3.4%	0.05
Western Africa	23.5	0.4%	1.8	0.1%	21.7	0.7%	0.08
Central Africa	6.1	0.1%	0.1	0.0%	6.1	0.2%	0.02
Eastern Africa	8.2	0.2%	0.6	0.0%	7.6	0.3%	0.07
Southern Africa	35.2	0.7%	2.9	0.1%	32.3	1.1%	0.08
Central Asia	10.1	0.2%	0.7	0.0%	9.4	0.3%	0.07
Persian Gulf	98.5	1.8%	3.9	0.2%	94.6	3.1%	0.04
Southern Asia	50.2	0.9%	1.6	0.1%	48.6	1.6%	0.03
Northern America	1203.1	22.4%	532.8	23.0%	670.2	22.0%	0.44
Central America	87.9	1.6%	15.5	0.7%	72.4	2.4%	0.18
Southern America	103.1	1.9%	23.6	1.0%	79.5	2.6%	0.23
Eastern Asia	979.3	18.3%	339.2	14.6%	640.1	21.0%	0.35
South-Eastern Asia	348.6	6.5%	74.6	3.2%	274.0	9.0%	0.21
Oceania	80.8	1.5%	8.3	0.4%	72.5	2.4%	0.10
World	**5363.2**	**100.0%**	**2319.2**	**100.0%**	**3044.0**	**100.0%**	**0.43**

Original data : CD-ROM PC-TAS (c) Trade Analysis System ITC-UNSD
Harmonisation of database : Brossier P., Cicille P., Sillère G. CNRS - UMR Espace / Montpellier

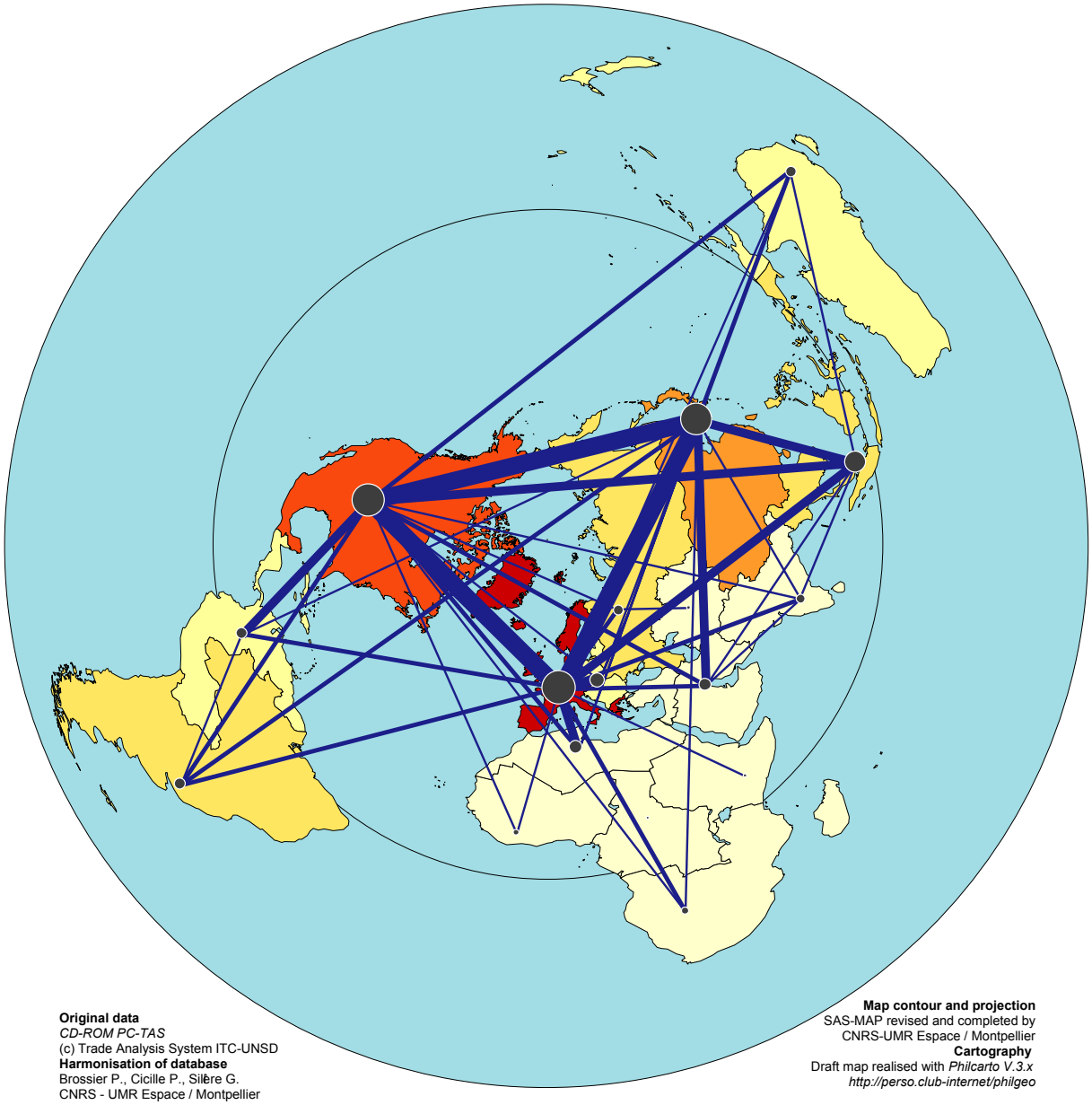
[6] Distinction between import and export will be examined in the final report of « Europe in the World ».
[7] The level of regional economic integration of Western Europe (64% of international trade flows are internal) is much higher than for the NAFTA (44%) or the Eastern Asia (35%). But this index is not reliable as it has been explain previously.

MAP 10

EIW0307_5

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

INTER-REGIONAL FLOWS / BILATERAL TRADE 1996-2000



Original data
CD-ROM PC-TAS
(c) Trade Analysis System ITC-UNSD
Harmonisation of database
Brossier P., Cicille P., Silère G.
CNRS - UMR Espace / Montpellier

Map contour and projection
SAS-MAP revised and completed by
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Cartography
Draft map realised with *Philcarto V.3.x*
http://perso.club-internet/philgeo

Main interregional flows

- 125-250 billions $
- 15-125 billions $
- 12-25 billions $
- 2-12 billions $

Sum of interregional flows

- 750 billions $
- 250 billions $
- 50 billions $

Regional integration

- 50 %
- 40 %
- 30 %
- 20 %
- 10 %
- 0 %

3.3 EUROPE INFLUENCE AREA / AIR FLOWS 2000

According to a division of the international flows between Western Europe (30%), Northern America (20%), Eastern Asia (12%) and "rest of the world" (38%), it is possible to propose a preliminary represention of the comparative influence of Europe and the other members of the Triad.

❖ Europe major influence from Capetown to Vladivostok

At the state level, the European influence area appears as a relative continuous field from Capetown to Vladivostock. Indeed, most African countries and most states from Central Asia, Middle East or former Soviet Union have more passenger flows with Europe than with other members of the Triad or with the rest of the World. In comparison, the influence area of Northern America appears very small and does not even cover all the Americas because of the regional integration of Mercosur. And the influence of Eastern Asia appears relatively limited to the states of Western Pacific coast.

❖ Is Western Europe the "World Wide Hub"?

Looking at this map from air transportation, it appears that in terms of accessibility, Europe is the World Wide Hub. This position can be explained by the great diversity of relations established in the past by the European states (France in Western Africa, UK in Eastern Africa and India, Spain in Southern America, Portugal in Brazil, Italia in Libya and Ethiopia …). Taking benefit from this inheritance, Europe has to examine the best way to organize its connexions with the rest of the world, which is an external problem (world influence) and an internal problem (choice of gateway cities).

World influence of Western Europe / Interregional air traffic 2000

ESPON REGIONS	Western Europe	Northern America	Eastern Asia	Rest of the World	Total
Western Europe	-	33%	6%	60%	100%
Central Europe	91%	2%	0%	7%	100%
South and East Mediterannea	83%	4%	1%	12%	100%
Western Africa	83%	6%	0%	11%	100%
Southern Africa	79%	5%	3%	12%	100%
Eastern Europe	79%	5%	5%	11%	100%
Eastern Africa	78%	1%	1%	21%	100%
Central Africa	72%	0%	0%	28%	100%
Central Asia	63%	2%	12%	23%	100%
Northern America	51%	0%	19%	30%	100%
Southern America	39%	49%	2%	10%	100%
Persian Gulf	32%	1%	2%	65%	100%
Southern Asia	32%	2%	4%	62%	100%
Central America	26%	71%	0%	3%	100%
South-Eastern Asia	18%	3%	53%	26%	100%
Eastern Asia	17%	32%	0%	51%	100%
Oceania	10%	14%	40%	36%	100%
World	30%	20%	12%	38%	100%

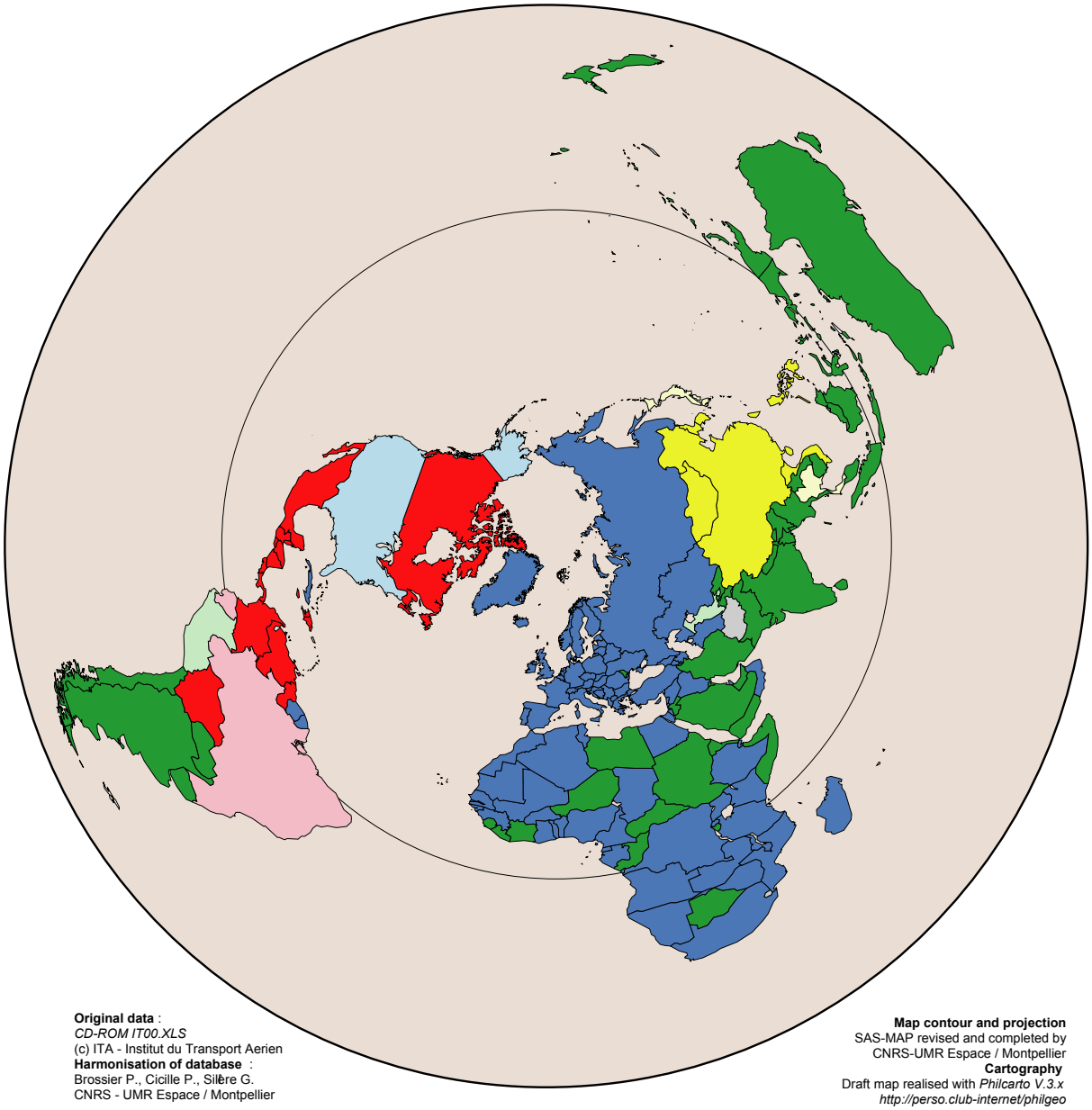
Original data : CD-ROM IT00.XLS (c) ITA - Institut du Transport Aerien
Harmonisation of database : Brossier P., Cicille P., Sillère G. CNRS - UMR Espace / Montpellier

MAP 11

EIW0307_6

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

COMPARATIVE INFLUENCE OF TRIADE / AIR TRAFFIC 2000



Original data :
CD-ROM IT00.XLS
(c) ITA - Institut du Transport Aerien
Harmonisation of database :
Brossier P., Cicille P., Silère G.
CNRS - UMR Espace / Montpellier

Map contour and projection
SAS-MAP revised and completed by
CNRS-UMR Espace / Montpellier
Cartography
Draft map realised with *Philcarto V.3.x*
http://perso.club-internet/philgeo

	Western Europe	Northern America	Eastern Asia	Rest of the World
Absolute domination (> 50%) of ...				
Relative domination (< 50%) of ...				

N.B. As the smallest air trafic flows has been removed, the level of domination is generally over-estimated.

3.4 EUROPE INFLUENCE AREA / TRADE FLOWS 1996-2000

Many recent publications of American researcher in economy and political sciences have underlined the growing power of the "discrete" Europe which is slowly becoming a "superpower" in many fields, if not in military terms.

❖ "Sweet commerce" and the World power of Europe

Many European policy-makers would probably share the opinion of William Robertson who said in 1769 that "*sweet commerce tends to wear off those prejudices which maintain distinctions and animosity between nations. It softens and polishes the manners of men*." But they certainly do not ignore that trade is also an instrument of power which induces dissymmetrical links between partners when their sizes are different. According to the polarisation of the world by the Triad, the map 12 shows clearly that Europe has a dominating influence on most African and Middle-East countries. And it is important to underline that the areas where the trade is not dominated by a member of the Triad (Southern India, Southern America, and Eastern Europe) have more relations with Western Europe than with Eastern Asia or Northern America.

❖ European responsibility concerning the neighbouring countries

The dissymmetry of trade relations between Europe and its neighbours is well-known. For example Western Europe represents more than 75% of the commercial trade of Tunisia when Tunisia represents less than 1% of the trade of Western Union. The European policy makers should keep in mind that this situation was the situation of their states in their relation with America before the construction of the EU. Accordingly, they should consider this dissymmetry as a responsibility rather than an advantage.

World influence of Western Europe / Interregional bilateral trade 1996-2000

ESPON REGIONS	Western Europe	Northern America	Eastern Asia	Rest of the World	Total
Western Europe	-	29%	21%	49%	100%
Central Europe	73%	5%	5%	16%	100%
South and East Mediterannea	59%	16%	8%	17%	100%
Central Africa	47%	27%	13%	13%	100%
Western Africa	45%	22%	12%	21%	100%
Eastern Africa	44%	8%	13%	35%	100%
Southern Africa	43%	18%	20%	20%	100%
Eastern Europe	41%	9%	12%	38%	100%
Southern America	33%	31%	17%	19%	100%
Northern America	31%	-	36%	32%	100%
Southern Asia	30%	21%	18%	32%	100%
Eastern Asia	24%	38%	-	38%	100%
Persian Gulf	24%	14%	38%	25%	100%
Central Asia	22%	5%	11%	62%	100%
Oceania	21%	19%	38%	22%	100%
Central America	20%	59%	9%	12%	100%
South-Eastern Asia	19%	26%	42%	13%	100%
World	24%	22%	21%	33%	100%

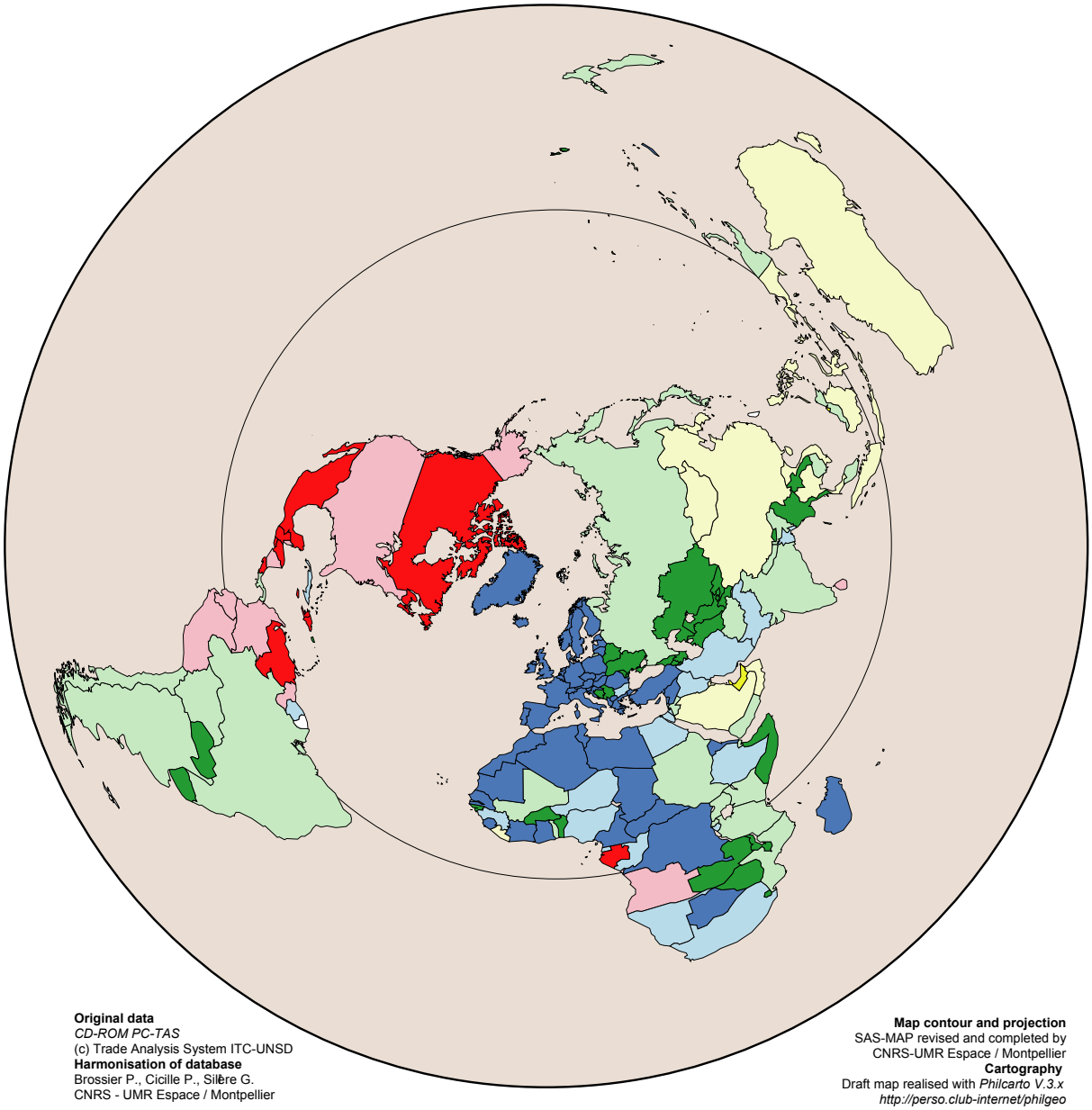
Original data : CD-ROM PC-TAS (c) Trade Analysis System ITC-UNSD
Harmonisation of database : Brossier P., Cicille P., Sillère G. CNRS - UMR Espace / Montpellier

MAP 12

EIW0307_7

European Spatial Planning Observatory Network
ESPON 3.1 / Workpackage "Europe in the World"

COMPARATIVE INFLUENCE OF TRIADE / BILATERAL TRADE 1996-2000



Original data
CD-ROM PC-TAS
(c) Trade Analysis System ITC-UNSD
Harmonisation of database
Brossier P., Cicille P., Silère G.
CNRS - UMR Espace / Montpellier

Map contour and projection
SAS-MAP revised and completed by
CNRS-UMR Espace / Montpellier
Cartography
Draft map realised with *Philcarto V.3.x*
http://perso.club-internet/philgeo

	Western Europe	Northern America	Eastern Asia	Rest of the World
Absolute domination (> 50%) of ...				
Relative domination (< 50%) of ...				

N.B. The computation of influence is made on **bilateral** trade flows (import+export).

CONCLUSION

"The World transformed himself into the form of a magnificent white bull and appeared in the sea shore where Europa was playing. The great bull walked gently over to where Europa stood and knelt at her feet. The appearance and movements of the bull were so gentle that Europa spread flowers about his neck and dared to climb upon his back. But suddenly, the bull rushed over the sea abducting Europa. Only then the bull revealed its true identity and took Europa to the Mediterranean island of Crete. There, the World cast off the shape of the white bull, and back into his human form, made Europa his lover beneath a simple cypress tree. Europa became the first queen of Crete and had many sons all around the World[8]."

The aim of this very preliminary study on "Europe in the World" is certainly not to provide definitive results on such a complex subject. All studies and maps presented in this annex should be considered as **exploratory results** which try to indicate new interesting directions for further research to be developed in the future by the members of the ESPON Program. According to the political objectives of ESPON we have yet identified some priorities for further research

1) **Identification of the peripheries of Europe through a combination of criteria of homogeneity, flows and accessibility**. As a very preliminary example of such a research, we have tried to combine in the same factorial analysis the basic structural characteristic of the 17 ESPON regions (demography, economic development, urbanisation …) with their degree of connexion to Europe according to air and trade flows. As a result, we obtain a graphic plot which present an interesting representation of the positions of the regions of the world according to their level of development (Factor 1) and the intensity of their relationships with Europe (Factor 2).

2) **Comparison of the European territory with the other global integration zones of the world**. For most political concepts developed in the ESPON programme (polycentrism, territorial cohesion, gateway cities, …), it should be interesting to compare the European Territory with comparable territories of NAFTA or Eastern Asia. The partnership between OECD and ESPON could be the ideal platform for such exchange of experiments.

[8] Text adapted from http://www.windows.ucar.edu/tour/link=/mythology/planets/Jupiter/Europa.html

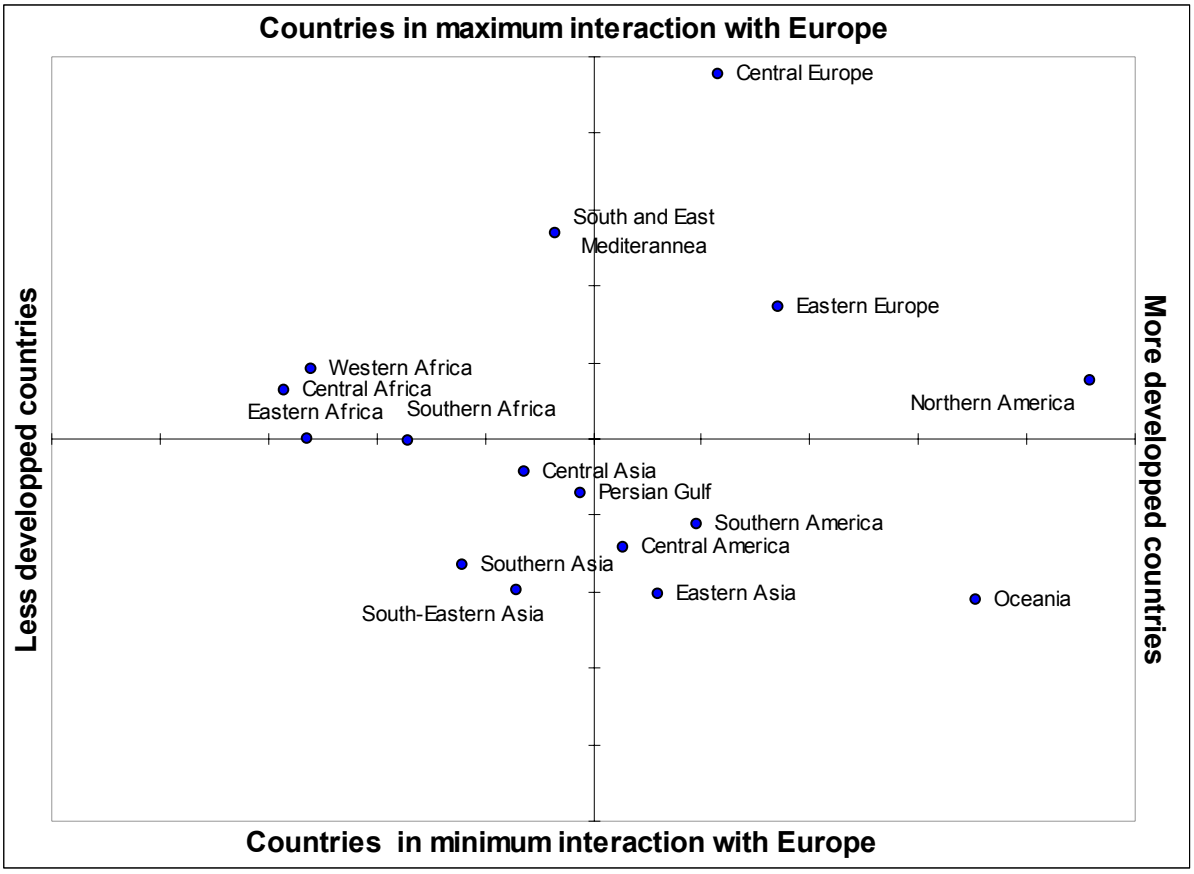
PRELIMINARY SYNTHESIS OF "EUROPE IN THE WORLD" RESULTS

(a) Correlation of variables with factors

VARIABLES (in 2000)	Factor 1 (46.8%)		Factor 2 (30.4%)	
	Coord	Contrib.	Coord	Contrib.
(A) Interaction with Europe				
Mean aerian distance to Western Europe	0.177	0.672	-0.834	22.923
Air flows toward W. Europe (% of flows)*	-0.312	2.082	0.913	27.446
Air flows toward W. Europe (per inhabitant)	0.616	8.115	0.500	8.224
Trade flows toward W. Europe (% of flows)*	-0.341	2.485	0.812	21.698
Trade flows toward W. Europe (per $ of GDP)	-0.495	5.233	0.669	14.738
(B) Structural situation				
% of 0-14 in population	-0.874	16.309	-0.118	0.460
% of 65 and more in Population	0.838	15.019	0.196	1.260
% of urban population	0.824	14.526	0.218	1.572
GDP/inh in pps	0.958	19.598	0.134	0.592
CO2 emission per inhabitant	0.864	15.962	0.182	1.089

* the percentage of flows is calculated after exclusion of internal flows of the world regions.

(b) Position of world regions



Annex 1: The world database on air flows

Les données brutes utilisées pour construire la base de données géoréférencées proviennent de l'Institut du Transport Aérien (ITA), association regroupant au niveau international les différents acteurs du monde aéronautique (directions de l'aviation civile, compagnies aériennes, aéroports, etc.).

Fiabilité des données
Le fichier des flux de passagers par liaison aérienne d'aéroport à aéroport, fourni par l'ITA, comprenant souvent plusieurs sources pour une même liaison (33 048 lignes en tout), une seule a été conservée. Les sources nationales ont été privilégiées. Les données concernant la répartition du nombre de passagers entre vols réguliers et non réguliers n'étant pas exploitables pour l'ensemble du réseau mondial (trop de données manquantes), n'ont pas été conservées dans la base finale.Le niveau d'exhaustivité des données est différent d'un pays à l'autre: la France est certainement le pays le mieux renseigné (données pour 112 aéroports sur les 136 ayant une piste goudronnée de plus de 1 523 mètres).Globalement tous les pays européens sont relativement bien renseignés.
Il manque certainement beaucoup de liaisons nationales, aux États-Unis, voire en Australie (l'aéroport de Canberra n'est pas présent, par exemple) et dans une grande partie de l'Asie.

Base de données géoréférencées
La base de données construite par l'UMR ESPACE (Patricia Cicille, CNRS UMR ESPACE et Magali Amiel) comprend 16 525 liaisons de ville à ville : 48 villes ayant au moins deux aéroports, les flux de passagers ont été cumulés par ville.Pour chaque liaison décrite, on dispose du nombre de passagers (arrivées et départs cumulés) en 2000 et de la longueur de la liaison (distance en km).La correspondance avec un fond de carte *Villes Monde* a été réalisée (Patrick Brossier, UPV UMR ESPACE) à partir d'un fichier de coordonnées (longitude, latitude) de 8 341 aéroports (source : http://www.airportcitycodes.com).La correspondance avec un fond de carte *Pays Monde* a également été réalisée (Patricia Cicille et Patrick Brossier) à partir d'un fichier de codes de pays comprenant à la fois les codes OAG, les codes IATA (International air transport association), les codes Nations unies, les codes ISOA2 et A3. Ce fichier comprend également des codes permettant de réaliser des cartes par grandes régions du monde (source : UNEP/DEWA/GRID-Geneva, United Nations Environnement Program/Division of Early Warning and Assessment/Global Resource Information Database) et par regroupement économique (type Union européenne, ALENA, etc.).

Annex 2 : Drawing maps without borders

The making of the CD-Rom "6 billion people… and me" [3] provided an opportunity to apply several new mapping methods to the study of the distribution of the world's population and wealth. This project was made possible thanks to the data base of the United Nations Environment Program which shows the distribution of the world's population, in 1990, according to a 1-degree latitude/longitude gid, and ignoring state borders (UNEP-GRID). On the basis of this grid, we estimated the distribution of world wealth by allocating each country's GNP in proportion to its population located within each cell of the grid. However, this method does not account for regional variations of the per capita GNP, and as a result the location of wealth remains to a certain extent approximate.

Two approaches were chosen to carry out the "borderless" analysis of the distribution of population and wealth. The "potential"-based approach consists in evaluating the quantity of population (or wealth) located in the vicinity of a specific point in the world, on the basis of certain hypotheses suggesting a weakening of the link with growing distance[9]. This method makes it possible to determine the main points of concentration of population or wealth. The "accessibility" approach makes it possible to evaluate the average distance between a given point on theEarth's surface and the entire world population or wealth. Each point of the globe can be measured in terms of demographic or economic accessibility, and one can determine the most accessible point of the world, in demographic or economic terms.

References :

Claude GRASLAND – "Essai de représentation cartographique des émissions de gaz carbonique dans le monde vers 1995 : problèmes cartographiques et enjeux politiques", *Réalités industrielles/Annales des Mines,*February 2001, 79-87.
Gilles PISON (dir.), Jean-Claude CHESNAIS, Claude GRASLAND, al. *– 6 milliards d'hommes ... et moi*, Cédérom, Éditions Syrinx, 1999.
Claude GRASLAND, "Accessibilité sociale et accessibilité économique mondiales au début des années 1990", *L'Information géographique*, 1999, 63, 3.

[9] The calculation of potential is weighted by a Gaussian function of a value of 0.5 for a distance of 1,000 km. In concrete terms, this means that a population mass of 5 million people will contribute 100% (5 million) to the potential of the place where it is located, only 50% (2.5 million) to the potential of a place located 1,000 kmaway and less than 5% (250,000) to the potential of a place 2,000 km away.

EUROPE IN THE WORLD

By Claude Grasland & Christian Grataloup

SUMMARY

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ESPON
EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

Bundesamt
für Bauwesen und
Raumordnung

3rd

Interim Report

ESPON project 3.1

Integrated Tools for European Spatial Development

Annex C
ESPON Map Overview

Tuesday, 30 September 2003

TIR 1.1.1 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Map no1	Functional Urban Area population	map01_fua_population.jpg	14	9
Map no2	Typology of Functional Urban Areas (FUAs)	map02_fua_typology.jpg	19	14
Map no3	Level of polycentricity of FUAs grouped according to their population size and proximity	map03_levelpolycentricity.jpg	21	16
Map no4	Potential accessibility of Functional Urban Areas	map04_potentialaccessibility.jpg	25	20
Map no5	Functional urban areas with over 20 000 inhab. In France and in the Nordic countries	map05_fuas_france_nordic.jpg	107	101
Map no6	Functional urban areas with over 20 000 inhab. In France and in the Nordic countries - population density	map06_fuas_france_nordic_popdens.jpg	108	102
Map no7	Population (mass function)	map07_population_massfunction.jpg	113	107
Map no8	Transport function	map08_transportfunction.jpg	118	112
Map no9	Tourism function	map09_tourismfunction.jpg	122	116
Map no10	Industrial function	map10_industrialfunction.jpg	127	121
Map no11	Knowledge function	map11_knowledgefunction.jpg	131	125
Map no12	Business decision-making centre	map12_business_decisionmaking.jpg	135	129
Map no13	Administrative function	map13_administrativefunction.jpg	140	134
Map no14	Typology of Functional Urban Areas (FUAs)	map14_fua_typology.jpg	144	138
Map no15	Economic base of FUAs	map15_fua_economicbase.jpg	148	142
Map no16	Nuts typology based on list of FUAs (4 types). DRAFT.	map16_fuas_nutstypology_4types.jpg	160	154
Map no17	Multimodal accessibility of FUAs Multimodal accessibility of FUAs	map17_fuas_multimodalaccessibility.jpg	163	157
Figure no8	The bunch of grapes (Kunzmann and Wegener, 1991)	fig08_grapes.jpg	168	162
Figure no11	Catchment areas of cities over 50,000 population in Germany	fig11_catchmentareas_germany.jpg	176	170

TIR 1.1.2 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
MAP SET 1: Maps selected for presentation purposes				
Map I	European land cover and population density	ms1map1_landcover_population.jpg	29	3
Map II	Population density and the share of urban population / three categories	ms1map2_populationdens_shareFUApop.jpg	30	4
Map III	Urban-rural typology	ms1map3_urbanrural_typology.jpg	31	5
Map IV	Urban-rural typology and major cities	ms1map4_urbanrural_typology_majorcities.jpg	32	6
Map V	Urban-rural typology and smaller cities	ms1map5_urbanrural_typology_smallercities.jpg	33	7
MAP SET 2: Maps used for analytical purposes				
Map 1	Urban population density based on national classifications	ms2map1_urbanpopdens_nationalclassific.jpg	3	
Map 2	Rural population density based on national classifications	ms2map2_ruralpopdens_nationalclassific.jpg	4	
Map 3	Urban-rural population density based on national classifications	ms2map3_urbanruralpopdens_nationalclassific.jpg	5	
Map 4	Share of agricultural land (% of the total NUTS3-area)	ms2map4_agriculturalland_shareNUTS3.jpg	6	
Map 5	Share of forests and semi-natural areas (% of the total NUTS3-area)	ms2map5_forestsseminatural_shareNUTS3.jpg	7	
Map 6	Share of forests (% of the total NUTS3-area)	ms2map6_forests_share%NUTS3.jpg	8	
Map 7	Share of artificial surface (% of the total NUTS3-area)	ms2map7_artificialsurface_share%NUTS3.jpg	9	
Map 8	Artificial land (km2) per capita	ms2map8_artificialsurface_percapita.jpg	10	
Map 9	Population density	ms2map9_population_density.jpg	11	
Map 10	Population density and the share of FUA population / four categories at NUTS3-level	ms2map10_population_shareFUApop_NUTS2.jpg	12	
Map 11	Population density and the share of FUA population / four categories	ms2map11_population_shareFUApop_NUTS3.jpg	13	

Map 12	FUA ranking, population density and the share of FUA population / 16 categories	ms2map12_FUAranking_9categories.jpg	14
Map 13	FUA ranking, population density and the share of FUA population / 9 categories	ms2map13_FUAranking_16categories.jpg	15
Map 14	Combination of land use type, population density and the share of FUA population / 24 categories	ms2map14_combination_24categories.jpg	16
Map 15	Combination of land use type, population density and the share of FUA population /12 categories	ms2map15_combination_12categories.jpg	17
Map 16	Urban-rural typology, test version at NUTS2-level	ms2map16_typology_testversionNUTS2.jpg	18
MAP SET 3: Examples of other resulting maps			
Map A	Population density, share of agricultural land and GDP per capita	ms3mapA_popdens_agricultland_gdp.jpg	3
Map B	Urbanisation pressure according to proximity	ms3mapB_pression_urbanisation.jpg	4
Map C	Urbanisation pressure according to proximity	ms3mapC_pression_urbanisation_mediterranean.jpg	5
Map D	Urbanisation pressure according to proximity	ms3mapD_pression_urbanisation_baltic.jpg	6
Map E	Urbanisation pressure according to proximity	ms3mapE_pression_urbanisation_accession.jpg	7
Map F	Urbanisation pressure according to proximity	ms3mapF_pression_urbanisation_nwe.jpg	8
Map G	Urbanisation 1950-2000, 1st draft	ms3mapG_urbanisation_1969_2000.jpg	9
Map H & I	Maps for the Portuguese case studies	ms3mapsH&I_portuguese_case.jpg	10
Map J & K	Commuting Interaction in Portugal	ms3mapsJ&K_commuting_portugal.jpg	10
Map L	Commuter flows to Turku and Salo	ms3mapL_commuterflows.jpg	11
Map M	Summer cottages belonging to Turku residents	ms3mapM_summercottages.jpg	11
Map N	Municipalities that are losing population for Turku of gaining population from Turku	ms3mapN_municipalities_gain&loss.jpg	12
Map O	Discontinuous urban fabric	ms3mapO_discontinuous_urbanfabric.jpg	13
Map P	Continuous urban fabric	ms3mapP_continuous_urbanfabric.jpg	14

Map Q	Factor 1 – urban territories	ms3mapQ_factor1_urbanterr.jpg	15
Map R	Factor 2 – pressure from agriculture	ms3mapR_factor2_agriculture.jpg	16

TIR 1.1.3 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
map0	Border regions	map0_borderregions.jpg	19	
map2.1	Concentration of population	map2.1_concentration_population.jpg	52	17
map2.2	Concentration of GDP	map2.2_concentration_gdp.jpg	55	20
map2.3	Change in GDP per capita 1995-2000, index EU15=100	map2.3_change_gdp.jpg	57	22
map2.4	GDP per capita 1995 in PPS (EU average = 100)	map2.4_gdp_capita_pps1995.jpg	86	51
map2.5	GDP per capita 2000 in PPS (EU average = 100)	map2.5_gdp_capita_pps2000.jpg	87	52
map2.19	GDP per head by region in Portugal, 1999	map2.19_gdp_regionportugal_1999.jpg	98	63
map2.20	GDP per person employed by region in Portugal, 1999	map2.20_gdp_personemlpoyed_1999.jpg	99	64
map3.1	Geographic type of borders	map3.1_borders_geographictype.jpg	116	81
map3.2	Ethnic-historical types of borders	map3.2_borders_ethnichistoricaltype.jpg	118	83
map3.3	Dimensions of economic disparities	map3.3_economicdisparities.jpg	119	84
map3.4	Density of border crossing points	map3.4_bordercrossingpoints.jpg	135	100
map3.5	Euroregions in Central Europe	map3.5_centraleurope_euroregions.jpg	153	118
map3.6	Members of Working Communities	map3.6_members_workingcommunities.jpg	154	119
map3.7	EU Finance in Candidate Countries 1990-2002	map3.7_eufinance_cc1990_2002.jpg	162	127
map3.8	EU Finance in Candidate Countries 2000-2006	map3.8_eufinance_cc2000_2006.jpg	163	128
map4.1	The Major Urban Systems (MUSs) of the accession countries	map4.1_MUSs_accessioncountries.jpg	184	149
map4.2	Accession countries Purchasing Power Parity per inhabitant (2000)	map4.2_ppp2000_accessioncountries.jpg	185	150
figure4.2	Catchment areas of cities over 50,000 population in Poland	fig4.2_catchmentareas_polishcities.jpg	202	167
figure4.3	Cities in Poland connected to the nearest large city	fig4.3_citiespoland_connectlargercity.jpg	204	169

map4.3	Potential accessibility, multimodal, all destinations, in 2001 (ESPON 1.2.1)	map4.3_potentialaccessibility_multimodal.jpg	211	176
map4.4	Potential accessibility, multimodal, only EU 15 destinations, in 2001	map4.4_potentialaccessibilty_multimodal_eu15.jpg	212	177
map4.5	Potential accessibility, multimodal, only CEC destinations, in 2001	map4.5_potentialaccessibility_accessioncountries.jpg	213	178
figure5.1	Central European Empires and Capitals, 1914	fig5.1_centraleurope_1914.jpg	226	191
figure5.2	The German Motorway Network, 1940, inside the 1919-45 borders	fig5.2_germanmotorways_1940.jpg	228	193
figure5.3	Population annual growth rate (1995 - 2000)	fig5.3_population_annualgrowth.jpg	238	203
figure5.4	Deviation of regional growth rates from national EU rates	fig5.4_deviation_growthrates.jpg	239	204
figure5.5	Relative change in population densities for Cecc	fig5.5_relchange_popdens_Cecc.jpg	240	205
figure5.8	Relative share of population for the three scenarios	fig5.8_relshare_popscenarios.jpg	245/246	210/211
map6.1	Scenario B3: accessibility difference (%) compared to reference scenario in 2021	map6.1_scenarioB3_accessibiltydiff.jpg	262	227
map6.2	Scenario B3: GDP per capita difference (%) compared to reference scenario in 2001	map6.2_scenarioB3_gdpdiff.jpg	263	228

TIR 1.1.4 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
map3.1	Population Change 1996-1999	map3.1_popchange1996_1999.jpg	39	
map3.2	Six typologies with regard to total population change, natural population and net migration 1996-1999	map3.2_sixtypologies_popdev.jpg	41	
map3.3	Natural population change / total population per 1000. Year 1999	map3.3_change_natpop1999.jpg	45	
map3.4	Natural population change / total population per 1000. Year 1995	map3.4_change_natpop1995.jpg	46	
map3.5	Natural population change / total population per 1000. Year 1990	map3.5_change_natpop1990.jpg	47	
map3.6	Total fertility rate in different parts of Europe (NUTS0-NUTS2, not overlapping)	map3.6_fertilityrate.jpg	51	
map3.7	Regions in EU29 with different age structures. Year 1999	map3.7_agestructures.jpg	53	
map3.8	Dependency rates 1999. Defined as total population / population aged 20-64 years	map3.8_dependencyrates_1999.jpg	59	
map3.9	Dependency rates 1995. Defined as total population / population aged 20-64 years	map3.9_dependencyrates_1995.jpg	60	
map4.1	Migratory Balance 1996-1999	map4.1_migratorybalance.jpg	71	
map4.2	Annual average migratory balance 1996-1999 (20-29 years)	map4.2_migratorybalance_annualaverage1996_1999.jpg	73	
map4.3	Annual average migratory balance 1995-2000 (30-44 years)	map4.3_migratorybalance_annualaverage1995_2000.jpg	74	
map5.1	Population Change 1995-1999	map5.1_popchange1995_1999.jpg	87	
map5.2	Components of Population Increase 1996-1999	map5.2_components_popincrease1996_1999.jpg	94	
map5.3	Typology of Depopulation Area 1996-1999	map5.3_typology_depopulationareas.jpg	95	
map5.4	Direct Indicator of "Depopulation"	map5.4_indicator_depopulation.jpg	101	

TIR 1.2.1 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Figure 5.1.1	Density of expressways by population	fig511_density_motorways.jpg	71	
Figure 5.1.2	Density of rail lines by population	fig512_density_railway_pop.jpg	73	
Figure 5.1.3	Commercial seaports infrastructure	fig513_commercial_seaports_infrastructure.jpg	75	
Figure 5.1.4	Commercial aiports infrastructure	fig514_commercial_airports_infrastructure.jpg	77	
Figure 5.2.1	Degree of vertices of the European transport network	fig521_degreeofvertices.jpg	80	
Figure 5.2.1b	Average of vertices of the European transport network by NUTS 2	fig521b_averageofvertices.jpg	81	
Figure 5.2.2	Multimodal European Network	fig522_multimodal_network.jpg	83	
Figure 5.2.2b	Main European corridors and weak links	fig522b_main_corridors.jpg	84	
Figure 5.2.3.1	Evolution of the motorway network	fig5231_evolution_motorways.jpg	86	
Figure 5.2.3.2	Main railway network	fig5232_mainnetwork_railway.jpg	88	
Figure 5.2.3.3	Inland waterway network	fig5233_inland_waterways.jpg	90	
Figure 5.2.6.5	Cartogram of population in Europe 27 with main transport corridors	fig5265_maintransport_pop.jpg	94	
Figure 5.2.6.6	Cartogram of GDP in europe 27 with main transport corridors	fig5266_gdp_europe27.jpg	95	
Figure 5.2.6.7	Cartogram of density of motorway by surfaces of NUTS 2 in Europe	fig5267_density_motorways_bysurfaces.jpg	96	
Figure 5.2.6.8	Cartogram of density of road by population of NUTS 2 in Europe (km/inhabitants)	fig5268_density_roads_pop.jpg	97	
Figure 5.2.7	Fractal dimension of European countries	fig527_fractal_dimension.jpg	100	
Figure 5.2.8.1	European road network with a square grid of 2.5 Km	fig5281_roadnetwork_squaregrid25.jpg	103	
Figure 5.2.8.2	European road network with a square grid of 5 Km	fig5282_roadnetwork_squaregrid5.jpg	104	

TIR 1.2.2 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
figure	Proportion of population subscribing to broadband (DSL and Cable Modem) in European Countries, 2002	figure_proportion_pop_2002.jpg	20	6
figure	Internet users in Europe per 10,000 inhabitants 2001	figure_internetuser_2001.jpg	21	7
figure3.1	Figure 3.1: main telephone lines per 100 inhabitants	figure3.1_main_tel_lines.jpg	51	37
figure3.4	Figure 3.4 Distribution of ISDN lines in Hungary (ISDN Lines as % of total main lines,2001 at NUTS 3 level.	figure3.4_isdn_lines_hu.jpg	55	41
figure3.5	Figure 3.5: Mobile telephone penetration at regional level (% of households – EU 15) in 1999	figure3.5_mobile_tel_reglevel_99.jpg	57	43
figure3.6	Figure 3.6: Cellular subscribers per 100 inhabitants 2001(and compound annual growth rate (CAGR) 1995-2001)	figure3.6_cell_subscribers_2001.jpg	58	44
figure3.7	Figure 3.7: Estimated PCs per 100 inhabitants 200110	figure3.7_estimated_pc_2001.jpg	60	46
figure3.8	Figure 3.8: Internet users per 10,000 inhabitants 2001	figure3.8_internetusers_2001.jpg	61	47
figure3.9	Figure 3.9 The limited availability of sub-national data: Internet users per 100 inhabitants	figure3.9_limit_availability_subnat_data.jpg	62	48
figure3.10	Figure 3.10: Estimated number of Internet users per 100 inhabitants	figure3.10_estim_numb_internetuser.jpg	64	50
figure3.14	Figure 3.14: Estimated proportion of firms with their own web site	figure3.14_estm_prop_firms_website.jpg	72	58
figure4.2	Figure 4.2: ADSL roll-out in North East England	figure4.2_ADSL_NE_england.jpg	83	69

TIR 1.3.1 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Map 1	Large river flood events recurrence 1996-2002	map01_riverfloodevents1996_2002.jpg	80	79
Map 2	Large flood events recurrence 1985-2002	map02_riverfloodevents1985_2002.jpg	81	80
Map 3	Flood hazard intensity on NUTS 3	map03_floodhazards.jpg	82	81
Map 4	Change of precipitation	map04_change_pricipation.jpg	83	82
Map 5	Change of runoff	map05_change_runoff.jpg	84	83
Map 6	Forest fires in NUTS 3 level	map06_forestfires.jpg	87	86
Map 7	Winter storms in Europe	map07_winterstorms.jpg	89	88
Map 8	Winter storm hazard in Europe on NUTS 3 level	map08_winterstorms_nuts3.jpg	90	89
Map 9	Earthquake hazard map	map09earthquakehazardmap.jpg	92	91
Map 10	Eartquakes on NUTS 3 level	map10_earthquakes_nuts3.jpg	93	92
Map 11	Volcanic eruption hazard in Europe (NUTS 3)	map11_volcaniceruptionhazard.jpg	95	94
Map 12	Nuclear power plants in Europe	map12_nuclearpowerplants.jpg	97	96
Map 13	The potential risk of radioactive contamination in case of a nuclear fallout. Based on experiences made after the Chernobyl accident in 1986.	map13_risk_radioactivity.jpg	98	97
Map 14	Locations of large dams in Europe	map14_largedams.jpg	100	99
Map 15	Major oil spills in Europe in 1967-2002	map15_oilspills.jpg	102	101
Map 16	Degree of vulnerability on NUTS 3 level	map16_degree_vulnerability.jpg	104	103
Map 17	Flood risk map on NUTS 3	map17_floodrisk_nuts3.jpg	106	105
Map 18	Winter storm risk in Europe (NUTS 3)	map18_winterstormrisk_nuts3.jpg	107	106
Map 19	Earthquake risk map on NUTS 3 level	map19_earthquakerisk_nuts3.jpg	108	107
Map 20	Volcanic eruption risk in Europe (NUTS 3)	map20_volcaniceruptionrisk_nuts3.jpg	109	108

TIR 1.3.2 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Files arrived directly as *.jpg-files - maps are not included in current pdf-file!!!				

TIR 2.1.1 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Figure 2.1	Motorway density by NUTS-3 region in 1999	fig2.1_motorwaydensitiy_nuts3.jpg	32	30
Figure 2.2	Railway density by NUTS-3 region in 1999	fig2.2_railwaydensitiy_nuts3.jpg	33	31
Figure 2.4	Time to Market, meso Scale	fig2.4_timetomarket_meso.jpg	36	34
Figure 2.5	Time to Market, macro Scale	fig2.5_timetomarket_macro.jpg	37	35
Figure 2.6	Fixed telephony penetration	fig2.6_telephony_penetration.jpg	38	36
Figure 2.7	Internet connections	fig2.7_internetconnections.jpg	39	37
Figure 2.8	ICTs Accessibility	fig2.8_ICTs_accessibility.jpg	40	38
Figure 2.9	Trans-European road network	fig2.9_TE_roadnetwork.jpg	45	43
Figure 2.10	Trans-European rail network	fig2.10_TE_railnetwork.jpg	46	44
Figure 2.11	Trans-European airports	fig2.11_TE_airports.jpg	47	45
Figure 2.12	Trans-European waterway network	fig2.12_TE_waterwaynetwork.jpg	48	46
Figure 3.3	Scenario A3 accessibility difference (%) compared to reference scenario in 2001	fig3.3_scenarioA3_accessdiff.jpg	65	63
Figure 3.4	Scenario B3 accessibility difference (%) compared to reference scenario in 2021	fig3.4_scenarioB3_accessdiff.jpg	66	64
Figure 3.5	Scenario A3 GDP per capita difference (%) compared to reference scenario in 2001	fig3.5_scenarioA3_gdpdiff.jpg	67	65
Figure 3.6	Scenario B3 GDP per capita difference (%) compared to reference scenario in 2001	fig3.6_scenarioB3_gdpdiff.jpg	68	66
Figure 3.7	Welfare change in scenario A1	fig3.7_scenarioA1_welfarechange.jpg	81	79
Figure 3.8	Welfare change in scenario A2	fig3.8_scenarioA2_welfarechange.jpg	82	80
Figure 3.9	Welfare change in scenario A3	fig3.9_scenarioA3_welfarechange.jpg	83	81
Figure 3.10	Welfare change in scenario B1	fig3.10_scenarioB1_welfarechange.jpg	87	85
Figure 3.11	Welfare change in scenario B2	fig3.11_scenarioB2_welfarechange.jpg	88	86

Figure 4.2	Differences in development potential between scenario C3 and reference scenario	fig4.1_diffC3_referencescenario.jpg	140	138
Figure 4.3	Differences in development potential between scenario D and reference scenario	fig4.3_diffD_referencescenario.jpg	141	139

TIR 2.1.2 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Map 5.1	The Structural Funds 2000-2006	map5.1_structuralfunds2000_2006.jpg	57	
Map 6.1	R&D Intensity in the EU-27	map6.1_r&d_intensity.jpg	63	
Map 6.2	Business R&D Intensity in the EU-27	map6.2_businessr&d_intensity.jpg	65	
Map 6.3	Human resources in science and technology core (HRSTC) as percentage of employment in 1999 (EU 15 + Norway and Switzerland)	map6.3_hrstc_employment.jpg	69	
Map 6.4	Medium-high and hightech manufacturing as percentage of total manufacturing employment (1999)	map6.4_manufacturing.jpg	71	
Map 6.5	The proportion of working age population with tertiary education in the	map6.5_tertiary_education.jpg	73	
Map 6.6	High level R&D infrastructure across Europe	map6.6_r&d_infrastructure.jpg	76	
Map 8.1	Number of FP5 project participation per million population 1999	map8.1_fp5project_participation.jpg	83	

TIR 2.1.3 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	may differ from page in pdf!
map2.1	Percentage Employed in Agriculture, Forestry and Fishing (AFF)	map2.1_employment_aff.jpg	42	16
map2.2	Average size (ESU) of holding	map2.2_esu_holding.jpg	43	17
map2.3	Agricultural Work Units (AWU) per holding	map2.3_awu_perholding.jpg	44	18
map2.4	Agricultural Land Use Intensity (FNVA per ha)	map2.4_fnva_perha.jpg	45	19
map2.5	Agricultural Labour Use Intensity (FNVA/AWU)	map2.5_fnva_awu.jpg	46	20
map2.6	Percentage of Arable Land in Total UAA	map2.6_arableland.jpg	47	21
map2.7	Percentage of Permanent Grass in Total UAA	map2.7_permanentgrass.jpg	48	22
map2.8	Percentage of Permanent Crops in Total UAA	map2.8_permanentcrops.jpg	49	23
map2.9	Percentage of Farmers over 65 years	map2.9_farmersover65.jpg	50	24
map2.10	AWU per ha UAA	map2.10_awu_1000ha.jpg	51	25
map4.1	Total Pillar 1 support per AWU, 1999	map4.1_totalpillar1_awu.jpg	111	85
map4.2	Total Pillar 1 support per ha UAA, 1999	map4.2_totalpillar1_ha.jpg	112	86
map4.3	Market price support per AWU, 1999	map4.3_marketpricesupport_awu.jpg	113	87
map4.4	Direct income payments for crops per AWU, 1999	map4.4_DIP_crops_awu.jpg	114	88
map4.5	Direct income payments for livestock per AWU, 1999	map4.5_DIP_livestock_awu.jpg	115	89
map4.6	Total Pillar 2 support per AWU (based on FADN data), 1999	map4.6_totalpillar2_awu.jpg	117	91
map4.7	Total Pillar 2 support per AWU (RD Fund), 1999	map4.7_totalpillar2_awu_rdfund.jpg	118	92
map4.8	LFA support per AWU, 1999	map4.8_lfasupport_awu.jpg	120	94
map4.9	Agri-environmental payments per AWU, 1999	map4.9_AEP_awu.jpg	121	95
map5.1	Absolute changes in CAP direct payments resulting from the MTR proposals	map5.1_changes_CAP.jpg	136	110

map5.2	Estimated absolute changes in farm incomes resulting from the MTR proposals	map5.2_changes_farmincomes_mtr.jpg	137	111
map5.3	Absolute changes in CO2 equivalents resulting from the MTR proposals	map5.3_changes_co2_mtr.jpg	138	112
map5.4	Percentage change in CAP payments resulting from MTR proposals	map5.4_changes_CAPpayments_mtr.jpg	139	113
map5.5	Percentage change in farm incomes resulting from MTR proposals	map5.5_changes_farmincomes%_mtr.jpg	140	114
map5.6	Percentage change in CO2 equivalents resulting from MTR proposals	map5.6_changes_co2%_mtr.jpg	141	115

TIR 2.1.4 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	may differ from page in pdf!
figura 7	Electricity Production by Hydroelectric Power Plants - NUTS 0 (EU15 1997 and CC12 1998)	fig07_hydroelectricpowerplants_nuts0.jpg	109	
figura 8	Electricity Production by Hydroelectric Power Plants - NUTS 2 (EU15 1997 and CC12 1998)	fig08_hydroelectricpowerplants_nuts2.jpg	110	
figura 9	Final Consumption of Electricity - NUTS 2 (1997)	fig09_electricity_consumption_nuts2.jpg	111	
figura 14	Total Primary Energy supply per capita (2000)	fig14_energysupply2000.jpg	114	
figura 15	Fossil Fuels Dependency (2000)	fig15_fossilfueldependency.jpg	115	
figura 26	Final Energy Consumption per capita (2000)	fig26_energyconsumption_percapita.jpg	119	
figura 29	Final Energy Consumption/GDP (2000)	fig29_energyconsumption_gdp.jpg	121	
Annex				
figura 1	Total Electricity Production by NUTS 0 (1997)	anfig01_electricity_production_nuts0.jpg	148	
figura 2	Total Electricity production by NUTS 2 (1997)	anfig02_electricity_production_nuts2.jpg	149	
figura 3	Thermal Electricity Production by NUTS0 (1997)	anfig03_thermale_production_nuts0.jpg	149	
figura 4	Thermal Electricity Production by NUTS 2 (1997)	anfig04_thermale_production_nuts2.jpg	150	
figura 5	Nuclear Electricity Production by NUTS 0 (1997)	anfig05_nuclear_production_nuts0.jpg	151	
figura 6	Nuclear Electricity Production by NUTS 2 (1997)	anfig06_nuclear_production_nuts2.jpg	152	
figura 7	TPES/GDP (2000)	anfig07_tpes_gdp.jpg	153	
figura 8	GDP/FEC (2000)	anfig08_gdp_fec.jpg	154	
figura 9	Electricity Consumption/GDP (2000)	anfig09_econsumption_gdp.jpg	156	
figura 10	GDP/Electricity Consumption (2000)	anfig10_gdpeconsumption.jpg	157	

TIR 2.2.1 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
figure0	The map of Structural Fund assisted areas for the period 2000-06	fig01_assistedareas2000_2006.jpg	51	47
map01	Structural Fund and accessibility to population (1st draft)	map01_funds_accessibility.jpg	67	63
map02	Structural Fund spending in relation to connectivity to transport terminals by car (1st draft)	map02_funds_connectivity.jpg	68	64
map03	Structural Fund spending and net public capital stock in Spain (1st draft)	map03_funds_netpubliccapitalstock.jpg	73	69
map04	Structural Fund spending per capita 1994-99 (1st draft)	map04_funds_spending_percapita.jpg	87	83
map05	Structural Fund spending and regional performance (1st draft)	map05_funds_spending_performance.jpg	97	93
map06	Structural Fund spending and change or regional performance ranking (1st draft)	map06_funds_spending_performancerranking.jpg	99	95
map07	Structural Fund Spending 1994-99 and Polycentricity (1st draft)	map07_funds_spending_polycentricity.jpg	101	97

TIR 2.2.2 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
map1-1	Map 1-1: Tentative General Regional Typology Based on Meta-Analysis and Potential Analysis	map1.1_tentat_general_typo.jpg	12	12
map7-1	Map 7-1: Regional pre-accession aid as % of regional GDP, 2000-2002, NUTS 2	map7.1_regiona_pre_acc.jpg	119	119
map7-2	Map 7-2: Regional PHARE allocation as % of regional GDP, 2000-2002, NUTS 2	map7.2_regional_phare_allok_N2.jpg	120	120
map7-3	Map 7-3: Regional PHARE CBC allocation as % of regional GDP, 2000-2002, NUTS 2	map7.3_regional_phare_cbc_N2.jpg	121	121
map7-4	Map 7-4: Regional ISPA allocation as % of regional GDP, 2000-2002, NUTS 2	map7.4_regional_ISPA_N2.jpg	122	122
map7-5	Map 7-5: Regional SAPARD allocation as % of regional GDP, 2000-2002, NUTS 2	map7.5_regional_SAPARD_N2.jpg	123	123
map7-6	Map 7-6: Total regional pre-accession aid as % of regional GDP, 2000-2002, NUTS 3	map7.6_total_regional_preacc_N3.jpg	126	126
map7-7	Map 7-7: Regional PHARE allocation as % of regional GDP, 2000-2002, NUTS 3	map7.7_regional_PHARE_N3.jpg	127	127
map7-8	Map 7-8: Regional PHARE CBC allocation as % of regional GDP, 2000-2002, NUTS 3	map7.8_regional_PHARE_cbc_N3.jpg	128	128
map7-9	Map 7-9: Regional ISPA allocation as % of regional GDP 2000-2002, NUTS 3	map7.9_regional_ispa_allok_N3.jpg	129	129
map7-10	Map 7-10: Regional SAPARD allocation as % of GDP, 2000-2002, NUTS 3	map7.10_regional_SAPARD_N3.jpg	130	130
map7-11	Map 7-11: Pre-accession aid aiming at improving labour market potentials, 2000-2002, NUTS 2	map7.11_pre_acc_aid_labour_market_N2.jpg	134	134

TIR 2.2.3 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
map01	Number of Functional Urban Areas in each NUTS 3	map01_numberFUAs.jpg	1	
map02	Functional Urban Areas Density: number of FUAs per NUTS3 surface	map02_FUAdensity.jpg	2	
map03	Typology of Urban Areas	map03_urbanareasby type.jpg	3	
map04a	FUAs in relative or no difficulty in relation to connectivity to transport networks	map4a_Connectivity_urbantype.jpg	4	
map04b	FUAs in absolute difficulty in relation to connectivity to transport networks	map04b_Connectivity_urbantype.jpg	5	
map05	Urban areas in absolute difficulty in relation to regional percentage population growth (1994-1999)	map05_population_urbantype.jpg	6	
map06	FUAs in relative or no difficulty in relation to SF spending per capita (1994-1999)	map06_structuralfunds_urbantype1.jpg	7	
map07	FUAs in absolute difficulty in relation to SF spending per capita (1994-1999)	map07_structuralfunds_urbantype2.jpg	8	
map08	Population index	map08_populationindex.jpg	9	
map09	Social indicator: education	map09_educationindex.jpg	10	
map10	Economic Activitiy	map10_economicactivity.jpg	11	
map11	Regions with dependency on manufacturing based on NACE codes	map11_dependency.jpg	12	
map12	High reliance on industry by subsector based on NACE codes	map12_relianceNACE .jpg	13	

TIR 3.1 - map overview

number of map	heading/name of map	name of *.jpg-file	page in *.pdf-document	text page (may differ from page in pdf!)
Map01	GDP per capita (pps), 1999 – Multiscalar typology of lagging regions	map01_gdp_pps99.jpg	91	
Map02	A cross-analysis of the distribution of economic and demographic discontinuities in 1999-2000	map02_cross_analysis99_00.jpg	93	
Map03	Potential economic polarisation at local scale in 1999 (50-250 km)	map03_econ_pol_local.jpg	95	
Map04	Potential economic polarisation at medium scale in 1999 (100-500 km)	map04_econ_pol_med.jpg	96	
Map05	Employed persons with high education	map05_empl_high.jpg	108	
Map06	Self-employed persons	map06_self_emply.jpg	109	
Map07	Proposal of a World division in region for ESPON research	map07_world_div.jpg	119	
Annex A				
Map01	GDP per capita (euro), 1999 – Deviation to European level	map01_gdp_euro_eu.jpg	11	
Map02	GDP per capita (pps), 1999 –deviation to European level	map02_gdp_pps_eu.jpg	13	
Map03	GDP per capita (euro), 1999 – deviation to national level	map03_gdp_euro_nat.jpg	17	
Map04	GDP per capita (euro), 1999 – deviation to local level	map04_gdp_euro_loc.jpg	21	
Map05	GDP per capita (pps), 1999 – deviation to local level	map05_gdp_pps_loc.jpg	23	
Map06	GDP per capita (euro), 1999 – Position to European and national levels	map06_gdp_euro_eunat.jpg	27	

ESPON
EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

Bundesamt
für Bauwesen und
Raumordnung

3rd

Interim Report

ESPON Project 3.1

Integrated Tools for European Spatial Development

SPECIAL COMPILATION FOR THE 3RD ESPON SEMINAR MATERA, ITALY 7 & 8 OCTOBER 2003

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

Annotation

The page are taken from the original ESPON Project 3.1 3rd Interim Report. The page numbers are therefore the original ones.

Content (taken from the ESPON 3.1 3rd Interim Report)

Contents

Figures

Maps

Tables

Glossary

Abbreviation	Term
AC	Accession Country
CAP	Common Agricultural Policy
CDCR	Committee for Development and Conversion of Regions
CIP	Community Initiative Programme
CSD	Committee for Spatial Development
CU	Co-ordination Unit
DPSIR	Driving force, Pressure, State Impact Response
ECP	ESPON Contact Point
EEA	European Environmental Agency
E-ESDI	Environment – European Spatial Data Infrastructure now called INSPIRE
ERDF	European Regional Development Fund
ESDP	European Spatial Development Perspective
ESPON	European Spatial Planning Observation Network
FUA	Functional Urban Area
GMES	Global Monitoring of Environment and Security
ICT	Information and Communication Technology
IR	Interim Report
LP	Lead Partner
MA	Management Authority
MC	Monitoring Committee
MTR	Mid-Term Review
NC	Neighbouring Country
NFP	National Focal Point (former ECPs)
PA	Paying Authority
RDR	Rural Development Plan
SDS	Sustainable Development Strategy
SEA	Strategic Environmental Assessment
SIA	Sustainability Impact Analysis
SPESP	Study Programme on European Spatial Planing
SUD	Subcommittee on Spatial and Urban Development (working group of the CDCR)
SWOT	Strengths, Weaknesses, Opportunities and Threats

TA	Technical Assistance
TEN	Trans-European Networks
TERM	Transport and Environment Reporting Mechanism
TIA	Territorial Impact Analysis
TPG	Transnational Project Group

The present 3rd Interim Report of the ESPON Project 3.1 is a team effort of all project partners under the leadership of the BBR.

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NORDREGIO - Nordic Centre for Spatial Development
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ÖIR - Österreichisches Institut für Raumordnung
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TAURUS
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UEHR - Institute of Urban Environment and Human Resources (Greece)

UMS RIATE - Interdisciplinary Network for European Spatial Planning (France)

Part A

Executive summary and role of 3.1 in the ESPON

1 Progress by the TPGs

Beside of own research activities this report bases on the outcomes and results of the other 15 ongoing TPGs. As mentioned in the former report not all projects started there work at the same time. Table no. 1: Actual ESPON projects, nick names, interim reports and lead partners of the ESPON Programme 2006 (see Chapter 2) shows which project has to deliver which kind of report. This differs between 2nd and 3rd interim reports. Thus no final reports and consequently no final results are expected at this stage.

General overview/ impression

Generally it has to be emphasised that all TPGs made a good job and delivered useful outcomes. Partly that was not expected at this stage, because the contracts haven't required such a fast and pressurised modus operandi.

Implementation of the Crete Guidance Paper

In general a very positive conclusion about the implementation and application of the Crete Guidance Paper and thus the creation of a Common Platform can be given at this stage. In the actual August 2003 Interim Reports (2nd or 3rd) the majority of the TPGs (12 of 15) have refered to the Common Platform and the Crete Guidance Paper. Only three of them have neither mentioned nor implemented the Common Platform or the Crete Guidance Paper. Nine of the fifteen reports have listed the Common Platform and Crete Guidance Paper in the content. Some reports have a whole chapter, in which the application of the Crete Guidance Paper is explained and discussed. Other TPGs have only itemized the Crete Guidance Paper in a paragraph.

Typologies[Po1]

Indicators[Po2]

Maps/ application of the standard layout[Po3]

Policy Recommendations

First tentative policy recommendations, concerning to the contract, for this reporting period are only asked from TPGs, which deliver their 3rd IR. The purpose

of these policy recommendations depends on the different TPGs. Some give first tentative and relative precise policy recommendations. Other TPGs are acting very hesitant. But it has to be mentioned that in general under the given circumstances the outcome could be evaluated as positive. The results in the corresponding final reports can be awaited with eagerness. A comprehensive and compact resume as well as first tentative analysis is given in Chapter 4.2 of this report.

SWOT

All TPGs of the first round delivered a SWOT analysis. For the TPGs of the second round it's, except of one TPG, the same situation. For the third round projects one project delivered a SWOT. All in all only three SWOTs are missing. This should not belie on the fact that the completeness and also the level of detail of the SWOTs is varying. More information as well as first positive outcomes contains the Chapter 4.3.

Resume/ Conclusions/ Outlook

The reports presented in August 2003 show, as mentioned above, a good performance. Some outcomes will find their way into the 3rd Cohesion Report. Very positive is the involvement of the accession countries as well as Norway and Switzerland. This contributes in substantial way to the well-founded outcomes. This very positive start in the co-operation is an obligation for the future.

The previous outcomes and tentative results generate a different perspective. This permits a differentiated consideration and observation from the European level to the regional and partly to the local level, which for European politics is fundamental and of high importance.

Often only partly and separated thematic fields, like transport, urban-rual development, demography, etc. are consolidated and merged in the ESPON. It's getting clear that it is very important to observe, interpret and analyse the mostly separated aspects under a common spatial planning and territorial development point of view. Therewith the appreciation and understanding of Europe gets amplified and a sound base. Important are here the work on the database, the creation and set up of new indicators and typologies. Current lacks which can be filled by ESPON are getting now very obvious.

The projects in general are working very satisfying, because the projects abide to their contracts and the given time table. Also the projects are concentrating predominantly on the aims, concepts and terms of the ESDP, e.g. polycentrism. It is visible that the projects at this point of time are advanced in their work. This is to laud.

Important impulses for the further development of for example TEN, CAP, etc. emerge through the approach of the ESPON Programme.

A few projects lacking of compliance of formalities. Some are hesitant concerning policy recommendations. This should change until the ‘final report’.

2 Executive summary

The ESPON project 3.1 “Integrated Tools for European Spatial Development” is the co-ordinating and cross-thematic project of the ESPON Programme 2006[1]. It gives support to the technical and scientific co-ordination of the ESPON 2006 Programme and the projects under measures 1 and 2, including data collection, development of a GIS facility and map-making, thematic co-ordination preparing for the cross thematic exploitation of integrated results based on all projects prepared under the programme.

The ESPON Project 3.1 delivered a Draft First Interim Report before the first ESPON Seminar in Mondorf-les-Bains, its final Interim Report afterwards in December 2002 and the 2nd Interim Report in April 2003 before the ESPON Seminar on the island of Crete, Greece. Different points were raised in the response to the Second Interim Report which will be reflected in this report.

The 3rd Interim Report (IR) of the ESPON project 3.1 is not an extended version of the 1st and 2nd IR. It is an enhancement. ESPON is a “living” programme and therefore the interim reports have to react in a flexible way. This 3rd IR focuses especially on the first tentative results given by the different projects in their 2nd or 3rd Interim Report.

This report fulfils the requirements of the deliverables mentioned in the addendum of the contract of the TPG 3.1 as well as in the ‘Guidelines for [the] Interim Report in March 2003’ developed by the CU after the 1st Transnational Project Group (TPG) Leadpartner meeting in February 2003[2] and the guidelines established during the 2nd TPG Leadpartner meeting in June 2003[3].

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1 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.“ ESPON Programme 2006 (2002).*ESPON Programme 2006* [online] Available from : http://www.espon.lu/online/documentation/projects/index.html [31.03.2003]

2 see ‘Guidelines for [the] Interim Report in March 2003’ developed by the CU after the 1st Transnational Project Group (TPG) Leadpartner meeting, 28 February 2003

3 see the e-mail from 19th June 2003 ‘ESPON Follow up of Lead Partner meeting on 16-17 June 2003’ and the included document ‘GUIDELINES FOR INTERIM REPORT IN AUGUST 2003’

Addendum – Contract for ESPON 3.1

September 2003 (third interim report)

h) Identification of orientations on an implementation of territorial objectives into EU policies – from analytical tools to feasible policy measures based on TPG results;
i) Compilation of intermediate results on the territorial trends and impact of policies based on the variety of studies and themes covered by the ongoing projects;
j) Working document on tentative recommendations to policy development towards the ESDP and the Structural Funds after 2006, including possible European priorities in different part of the enlarged EU territory and the necessities to coordinate the impacts of spatially relevant sector policies, taking into account recommendations of TPG's;
k) Working document to prove first steps towards the preparation of methodologies for prospective scenarios

Additional:

Data integration
All relevant datasets, scripts/programmes, eventual models and algorithms produced under the research contracts will, as far as they are made available, be included as elements in the ESPON information system.

Outputs/deliverables
Working maps and thematic data sets: The direct findings and deliverables of the respective research themes will be presented via ESPON GIS by means of the standardised templates – a common style.
Schematic policy material - illustrations: Progress towards a consensus on the legends and symbology to be adopted across the full range of themes under study. A comprehensive set of examples will be presented, with alternatives.
First diagnosis of territorial trends and disparities.
Policy development
Principal findings, conclusions and proposals for an integrated policy framework, particularly in response to the priority theme of polycentrism and accessibility.

A guideline for the Interim Reports addressed to all TPGs added special requirements:

The 'Guidelines for [the] Interim Report in August 2003'[4] add:

- to apply to the 'Crete Guidance Paper'
- to reflect the CU response [on the last interim report]
- to include the provided disclaimer
- to divide the structure and content into two parts:

Part one:

- Executive Summary with main preliminary results, including policy recommendations (approx. 20 pages)

[4] see 'Guidelines for [the] Interim Report in August 2003' developed by the CU after the 2nd Transnational Project Group (TPG) Leadpartner meeting, 16 and 17 June 2003

- Short presentation on concepts, methodologies and typologies used/developed
- List of indicators developed/provided to the ESPON Data base
- List of maps and tables in the Interim Report
- Short report on the application of common platform and Crete Guidance paper
- Networking undertaken towards other TPG.

Part two:

- to cover all points in the Addendum to the contract on results requested for the Interim Report in August 2003 (minimum requirement)
- to add any additional elements developed by the TPG

All mentioned points by the addendum or the so called 'guidelines' are fulfilled with this report. In particular,

- identification of orientations on an implementation of territorial objectives (**addendum h**) is addressed in Chapter 4.1
- territorial trends and impact of policies (**addendum i**) are addressed in the Chapter 4.3
- tentative recommendations to policy development (**addendum j**) is addressed in the Chapter 4.2
- proving first steps towards the preparation of methodologies for prospective scenarios (**addendum k**), see Chapter 6.1

The added request on data integration is part of the Chapter 5 on the ESPON database and GIS.

The different topics mentioned in the 'Guidelines for [the] Interim Report in August 2003[5] are, as it is visible, considered and implemented in this report

With this report the project 3.1 goes straight forward to fulfil requirements of the terms of reference mentioned-.[6] Also the responses towards the 2nd IR were taken in mind and are included in the content of the different chapters of this report.

[5] see 'Guidelines for [the] Interim Report in August 2003' developed by the CU after the 2nd Transnational Project Group (TPG) Leadpartner meeting, 16 and 17 June 2003

[6] see: http://www.espon.lu/online/documentation/projects/cross_thematic/185/tor_3.1.pdf, page no. 10 (Political challanges for the ESPON projects), 4th paragraph and following

This report is subdivided into seven chapters. It integrates the work and current results of meanwhile 15 TPGs of the first, second and third round. Mentioned 15 TPGs started their work at different times. Therefore this report includes outcomes of 2nd and 3rd interim reports.

Table no 1: Actual ESPON projects, nick names, interim reports and lead partners of the ESPON Programme 2006

PROJECT NUMBER	TITLE	"NICKNAME"	REPORT No.	TPG Lead Partner
1.1.1	The role, specific situation and potentials of urban areas as nodes in a polycentric development	POLYCENTRISM	3rd	NORDREGIO
1.1.2	Urban-rural relations in Europe	URBAN-RURAL	3rd	Helsinki University of Technology Centre for Urban and Regional Studies
1.1.3	Particular Effects of enlargement of the EU and beyond on a polycentric spatial tissue with special attention on discontinuities and barriers	ENLARGEMENT	2nd	The Royal Institute of Technology (KTH)
1.1.4	The spatial effects of demographic trends and migration	DEMOGRAPHY TRENDS	2nd	ITPS (Swedish Institute for Growth Policy Studies)
1.2.1	Transport services and networks: Territorial trends and basic supply of infrastructure for territorial cohesion	TRANSPORT TRENDS	3rd	University of Tours
1.2.2	Telecommunication and energy services and networks: Territorial trends and basic supply of infrastructure for territorial cohesion	TELECOM TRENDS	3rd	Centre for Urban & Regional Studies (CURDS), University of Newcastle
1.2.3	Identification of spatially relevant aspects of information society.	INFORMATION SOCIETY	----------	---------
1.3.1	Territorial effects and management of natural and technological hazards in general and in relation to climate change	NATURAL HAZARDS	2nd	Geologian Survey of Finland
1.3.2	Territorial trends in the management of natural heritage	NATURAL HERITAGE	2nd	Royal Haskoning
1.3.3	The role and spatial effects of cultural heritage and identity.	CULTURAL HERITAGE	---------	----------

Continuation: Actual ESPON projects, nick names, interim reports and lead partners of the ESPON Programme 2006

PROJECT NUMBER	TITLE	"NICKNAME"	REPORT No.	TPG Lead Partner
2.1.1	Territorial impact of EU transport and TEN policies	TRANSPORT IMPACTS	3rd	Christian-Albrechts-Universität zu Kiel Institute of Regional Research
2.1.2	Territorial impact of EU research and development policy	R&D IMPACT	3rd	ECOTEC Research and Consulting Ltd.
2.1.3	The territorial impact of CAP and rural development policy	CAP IMPACT	3rd	University of Aberdeen Arkleton Centre for Rural Development Research Department of Land Economy
2.1.4	Territorial trends of energy services and networks and territorial impact of EU energy policy	ENERGY	2nd	CEEETA
2.2.1	Territorial effects of EU Structural Funds	STRUCTURAL FUNDS IMPACTS	2nd	NORDREGIO
2.2.2	Territorial effects of the "Aquis Communitaire", Pre-accession Aid and Phare/Tacis/Meda Programmes	ENLARGEMENT AID IMPACT	2nd	Institute for Regional Development and Structural Planning
2.2.3	Territorial effects of structural funds in urban areas	STRUCTURAL FUNDS URBAN IMPACT	2nd	ECOTEC Research and Consulting Ltd.
2.3.1	The application and effects of the ESDP in Member States	ESDP IMPACTS	---------	----------
2.3.2	The governance of the territorial and urban oriented policies from the EU to the local level.	GOVERNANCE	---------	----------
3.1	Integrated tools for European spatial development territorial	SPATIAL TOOLS	3rd	BBR, Federal Office for Building and Regional Planning
3.2	Spatial scenarios and orientations toward the ESDP and the Cohesion Policy.	SCENARIOS	---------	----------

Since the delivery of the 1st Interim Report of the TPG 3.1 various meetings of the TPGs, the first and 2nd TPG lead partner meeting as well as the first and second ESPON Contact Point meeting took place.
Ideas, suggestions, and proposals were discussed and further developed. The results will be echoed in this report.

In the following an overview about the seven chapters of this report is given. Special emphasis is placed in this report on the chapter “From territorial objectives and analyses to policy recommendations”. First tentative policy recommendations are requested for this reporting time from all TPGs. The focus is on three key terms, accessibility, polycentrism and territorial cohesion. This has not only the reason in the ESDP. At this stage first outcomes of the ESPON should find encroach upon / find its way into the 3rd Cohesion Report.

2.1 The 1st chapter – Progress by the TPGs

This chapter gives a short overview on the progress the 15 ongoing ESPON projects made, how they are implemented the given guidance, what is the overall impression about their work, first outcomes and partly improvements.

2.2 The 2nd chapter - Executive summary

This first chapter is an abstract and gives a guidance as well as a comprehensive glance for the reader who wants to have a fast and compact overview of the content of the different chapters.

2.3 The 3rd chapter - The role of the ESPON 3.1 Project – Integrated Tools for European Spatial development

The third chapter “The role of the ESPON Project 3.1 – Integrated Tools for European Spatial Development” informs about the achievement of the ESPON and gives an overview about the ESPON project 3.1. In this chapter the relation between ESPON, the ESDP including its spatial goals and EU sectoral policies is described. The overview about the project 3.1 introduces briefly into the specific objective of the transnational project group (TPG).
The progress of the project is explained by reporting on the creation of a common platform for ESPON projects, including networking, exchanges, etc. with other TPGs as well as the integration of accession and neighbouring countries,

meetings and seminars. Also the way in which the project 3.1 gives guidance to the other TPGs, e.g. through the ESPON data base or discussions on different concepts is presented. Main aspects are the technical and analytical support undertaken since the 1st IR and 2nd IR. Progress was made towards common concepts, typologies, indicators, data sets and cartography. The last subchapter gives a tabularly overview of the activity plan 2003/2004, its outcome and expected results.

2.4 The 4th chapter – From territorial objectives and analysis to policy recommendations

This chapter is the main chapter of the present interim report. EU Enlargement and socio-economic, technological macro trends, such as globalisation, increasing competition, ageing population, shifting labour force participation, migration bring about an EU with extremely wide disparities both between and within countries. The challenge is thus to identify in which areas what kind of measure can strengthen territorial cohesion throughout Europe.

Preliminary results presented in the various ESPON interim reports underline the importance of a policy framework which is needed for a coherent policy addressing the spatial challenges. Solutions for horizontal and vertical policy co-ordination are sought after. Furthermore, the need for a more place based policy is underlined, as not at least expressed in the concept of polycentrism trying to strengthen specific development potentials.

Tentative policy recommendations address issues relating to the need of a more integrated approach to policy making involving mechanisms for horizontal and vertical integration of policies, e.g. through co-operation and governance. As regard European structural policies, the main emphasis is on the question of area delimitation, the need for tailor made policies for territorial entities and support of border regions. Regarding EU sector policies such as transportation, information and communication, rural development and nature protection are addressed regarding their potential contributions to territorial cohesion. Furthermore, tentative policy recommendations address the question how in particular structural policies influence polycentric development, especially at European level.

The forth chapter is divided into three parts. The first sub-chapter on “Territorial objectives into EU policies” the in the title mentioned objectives. Central role plays the ESDP and the effort of the EU to reach the targets. The sub-chapter can be seen as an introduction into the subject matter. The approach towards tentative policy recommendations by the project 3.1 is also presented.

The following sub-chapter “Tentative recommendations for an integrated policy framework’ presents policy recommendations which are based on the work of various ESPON projects. The aim of the section is to identify preliminary overall ESPON policy recommendations in the light of territorial cohesion and polycentric development and to present a first approach to an integrated policy framework.[7]
The third and last sub-chapter “Instruments and tools for identifying territorial trends and impacts of EU policies” presents the approach of a SWOT-based Regional Classification (RCE) of Europe and the Territorial Impact Assessment (TIA). In the ideal case the SWOT/RCE carries out an analysis which will provide a picture of multidimensional spatial trends and impacts which can be compared with the EU-territorially relevant policies. The last part describes the application of the TIA.

2.5 The 5th chapter – ESPON data base and GIS

According to the 3.1 task of establishing an ESPON data base, tools for spatial analysis and harmonised cartographic presentation and for the dissemination of ESPON results via web, fundamental progress has been made since the Second Interim Report from end of April.

During this period, especially the data base turned out to be a continuous undertaking related to updating and quality control, but even more related to the data and indicators included. The integration of ESPON exclusive regional indicators resulting from special processing of Labour Force data from Eurostat was one of the milestones for the ESPON data base in this period.

[7] The recommendations presented are of tentative character because there are no final ESPON findings and recommendations as all projects have at least one more year of work before presenting their final report. The work is based on the tentative policy recommendations presented in the Interim Reports of the single ESPON projects.

All TPG data, as far as they were made available, have been included as elements resp. data files in the ESPON data base founding the information system.

The ESPON mapping kit provided by 3.1 has been revised according to the TPG's suggestions related to corrections and improvement. In the actual use of the ESPON map standards considerable progress has been achieved, visible in the SIR and TIR end of August 2003, whereby results of the several TPG's necessarily might serve as examples for other TPG's.

In the course of the TPG Lead Partner Meeting in Brussels on 18th June 2003 the first results of the ESPON Web-GIS and the Hyper-Atlas have been introduced to the ESPON public showing the future possibilities of web-based map data selection and making and analytical representations. Since then the tools have been improved considering the interesting points of discussion at that meeting.

2.6 The 6th chapter – Outlook

This chapter consists of four sub-chapters which deal with:

- policy scenarios
- Europe in the world
- Interreg
- policy support system

The first section "Recommendation on political scenarios towards ESPON 3.2" summarises some ideas by the ESPON Project 3.1 which were part of the discussion about the terms of reference for the ESPON project 3.2 on the elaboration of political scenarios. The approach of the 3.1 project was to organise the elaboration of policy scenarios along four strands, trend analysis, analysis of forces shaping the European territory, elaboration of scenarios and validation of policy scenarios.

Another task of the project 3.1 is to suggest first ideas on a future research report about "Europe in the World". As requested the focus is on the clarification of concepts and methods, which should be introduced for the evaluation of the European position in the world. First examples of applications of those concepts and methods are presented in Sub-chapter 6.2, a more detailed paper on this

topic, presenting some first examples, is documented as Annex 2 to this report. Approaches for empirical studies on selected political questions with related cartographic illustrations are included in this section. The section concentrates on the elaboration of an efficient statistical and cartographic framework for future ESPON research on Europe in the world and the delimitation of the European influence area according to various matrixes of flows, which is seen as very important for the elaboration of long term strategies in this field.

Approaching “Interreg and its contribution to territorial cohesion and polycentric development” forms the third sub-chapter. Since the second 3.1 interim report two fields of activities have been identified. One is the networking and integration of Interreg activities and results. The other one is the assessment of Interreg co-operation regarding their contribution to implement the ESDP, in particular the creation of new transnational regions.

First steps have been undertaken to develop an approach for assessing the contribution of Interreg co-operation to the creation of transnational European regions. However, in cooperation with the ESPON Co-ordination Unit, it has been decided to wait for the clarification of the role Interact can take regarding the networking and integration of the ESPON, Interreg IIIB and IIIC projects. Currently there are three options to deal with Interreg, either as part of Interact or as work package in 3.2 or in 3.1.

The last sub-chapter works on the idea of the integration of ESPON Information and knowledge tools into a an ESPON Policy Support System (EPSS). The need for such a system is very obvious. ESPON is a highly decentralised process, with many different networks of universities, research institutions, consultancies and independent experts working to provide sound scientific support to European policy makers for the construction of the European Union. The initial goal of ESPON 3.1 was to deliver harmonised material, maps and indicators to the Commission for consideration in the Third Cohesion Report. The consolidation of information and knowledge generated by ESPON in such a service-oriented approach is what is known as a Policy Support System.

Technically the EPSS may consist of four modules, a user interface, an information base, a forecast base and an evaluation base. As a medium an internet web page is envisaged. The need and feasibility of a number of initiatives are worth considering:

- A portal website with links to other TPG webs with their own project material.
- In addition to policy indicators, TPG raw databases to be integrated into the system or become somehow available.
- Data storage and retrieval through the Internet and Internet mapping services.
- Availability after ESPON of computer models used by TPGs, and if so, for what type of analysis, and under what commercial conditions. Creation of a directory of models and modellers with the specific services they can provide.
- Interactive simulators available on the Internet focusing on key policy questions and scenarios, using the knowledge gathered.

2.7 The 7th chapter – Further activities

The chapter gives an outlook to the further activities of the TPG 3.1 in general and specifically with regard to the different topics. In twelve months, October 2004, the TPG 3.1 has to submit its final report. Until that time the TPG has to fulfil different tasks and to make progress in its work.

It could be the case that the impression comes up that the transnational project groups have now the time to twiddle the thumbs. That is not the case. The below presented table shows the work which has to be done until the end of the 3.1 project time in October 2004. A new task will be the co-operation with the 3.2 project. As known the 3.2 project will continue part of the work of the 3.1 project. Therefore interchange, support and assistance is of high importance.

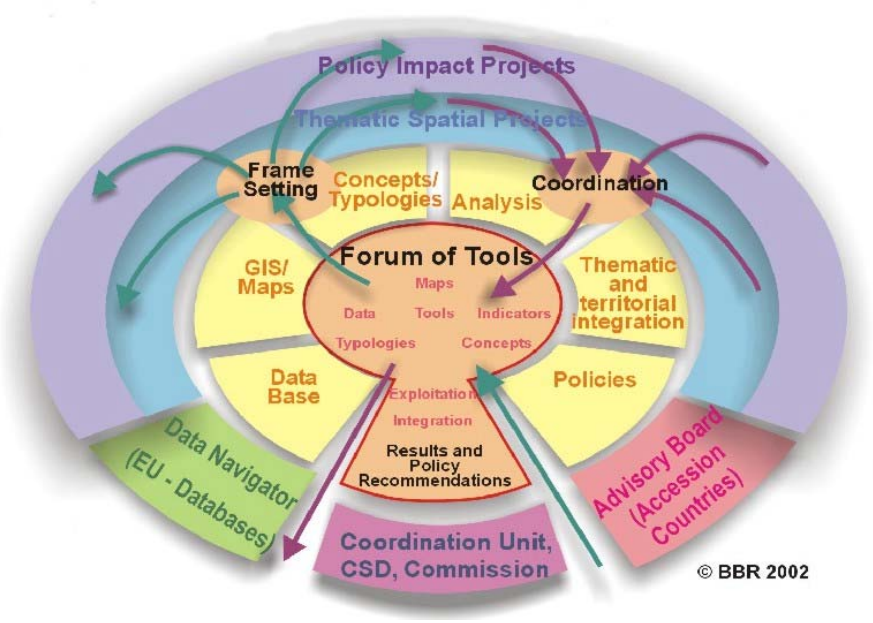
Field of work	*Title/ Content*	*Period of time*
General	Preparation/support and assistance ESPON Seminar 4 and 5	May 2004 and October 2004
General	Preparation/support and assistance TPG Lead Partner Meeting	February 2004 (estimated)
General	Supporting the co-ordination activities of the ESPON CU	Continuous process
General	Co-ordination Meetings with the ESPON CU and the DG Regio	Regularly
General	Analysis of the different Interim Reports	March / April 2004
General	Analysis of the final reports of the ‚1st round TPGs'	August/ September 2004
General	Analysis of the different Interim Reports of the TPGs from the 2nd, 3rd ... rounds	August/ September 2004
General	Delivery of the own final 3.1 report	October 2004
Policy Recommendations	- analysis of reports of further reports - different workshops towards sound bases policy recommendations (incl. TPG Leadpartner, MC-Members...)	1st and 2nd half of 2004 August 2004 2004
Policy Recommendations	SWOT/RCE - further development - final results	
Policy Recommendations	TIA - description of methodological approach - instruction manual - final results	October 2004
Database/ GIS	Completition of the ESPON GIS ready for operation and handover	September 2004
Database/ GIS	Completition of the Hyperatlas ready for operation and handover	September 2004
Database / GIS	Completition of the ESPON Database	July 2004
Design and development	Policy Support System - first light dummy version up-gradeable light final version	 1st half of 2004 October 2004
Design and development	"Europe in the world"	October 2004
Design and development	Specific outlook on "Approaching Interreg and its contribution to territorial cohesion and polycentric development"	October 2004
Preparation of special meeting	Meeting with east European experts (Seminar, work shop...)	mid 2004
Preparation of special meeting	Work shop on ESPON results with political, scientific and practice experts	End of August 2004 or October 2004
ESPON 3.2	Co-ordination meetings - support (with regard to administrative tasks) - assistance (with regard to administrative tasks) - interchange	Various / until October 2004

3 The role of the ESPON 3.1 Project – Integrated Tools for European Spatial Development

3.1 Philosophy and approach of the project

The ESPON Project 3.1 is the co-ordinating cross thematic project of the ESPON Programme 2006. In the graphic below, one important task of project 3.1 is formalised as transforming the interaction between project 3.1 and the project environment (other TPGs, European Agencies, Experts from Accession Countries, etc.) into outputs and deliverables. This task is described by the set of rings around the core of the output.

Figure no 1: Project scheme – integrated tools for the spatial dimension



The figure above indicates the input by the outer ring, namely:

- policy impact projects
- thematic spatial projects
- data navigator and data bases
- accession countries and neighbouring countries advisory

The output is indicated by the “Forum of Tools” in the centre of the figure:

- spatial tools
- integrated data bases
- indicators

- typologies
- territorial concepts
- maps

These core outputs are complemented by the deduction of policy recommendations, indicated by the flow from the core towards the users and applicants. These flows are representing the main outputs and deliverables for external use which will be provided by the project.

Between these input and output layers the reference points of the tasks of the project are listed by different partitions:

- thematic structures and reference points deriving from the input provided by other projects and by own additional efforts
- territorial structure reference points such as countries, spatial integration zones, etc.
- data base development and cartography
- policy impact methodologies
- policy development

Project 3.1 will gain added values for the ESPON programme by deliver products which support the programme on different levels, like the 'Crete Guidance Paper'. By working in a cross-project manner a significant surplus value will arise.

- Added values (1): final products for the European Policy Makers

The main products will be delivered for the use by the Co-ordination Unit (and via the Co-ordination Unit by the European Commission, the Monitoring Committee and Sub-Committee an Spatial and Urban Development (SUD)). These are, e.g.: common database and indicator system, papers on concepts and policy recommendations, contributions for European documents (3rd Cohesion Report etc.).

- Added values (2): frame-setting for other ESPON projects

Another type of product will be used internally, i.e. within the ESPON programme. These internal products will be addressed to other TPGs and include, for instance, the setting up and delivery of standards and guidelines (referring to data collection, cartography, concepts etc.) which can be used by other TPGs for their work and help the Co-ordination Unit in its co-ordination task.

- Added values (3): exploiting results gained by other ESPON projects

In the other direction, TPG 3.1 makes use of results and recommendations of the other TPGs, e.g. by creating links between the different TPGs, synergetic effects could fructify the work in a reciprocative way. For the purpose of integration, results will be cross-checked and evaluated for contributions to synthetic reports.

- Added values (4): genuine contributions by project 3.1

Besides the networking aspect, an important part of added value of project 3.1 is based on genuine contributions that are not covered by the single projects of the themes 1 and 2, i.e. building a common data set and a joint system of indicators and tools, and defining and operationalizing concepts and tools. The activities and outcomes of the project 3.1 should be balanced with respect to giving room for “innovative” methods and thinking without loosing sight of meeting the demand of policy decisions based on EU-wide data and analysis that is currently available.

- Added values (5): promotion strategy / publications / networking

Finally, TPG 3.1 will support the CU in its task for internal and external networking and co-operation and it will contribute to the promotion and publication of ESPON results.

The outcome of ESPON can be seen as a Policy Support System. The need for a Policy Support System comes from two contradictory demands by policy makers: more advanced and yet more user-friendly and just-in-time decision-making support from experts and scientists. One possible strategy for resolving the conflict

between more advanced and more friendly and just-in-time support is developing corporate intelligence inside governmental institutions by introducing efficient management of information and knowledge. The first strategy to move in this direction is to continuously consolidate and formalise disperse information and knowledge generated in the institution. This can be done by simply creating virtual libraries with synthesis of studies, storing databases in compatible formats, creating intelligent search-engines, etc., and linking it all together into open systems, driven by user-friendly and customised interfaces and accessible to any interested policy-advisor or policy-maker from his/her computer desk. The open system should integrate interactive explanatory tools of use for communication and educational purposes, but should also provide access to multiple remote advanced information and knowledge systems developed and maintained by universities, research institutions and consulting firms that can answer a number of legitimate policy-questions.

However, clever computer systems that interface end-users and improving computer tools may not be the complete answer to the problem. The key to close the gap between policy makers and state-of-the-art scientific models is establishing an encouraging and co-operative environment where scientists, experts and policy makers interact personally and can understand each other.

The SPESP experience is an example of a successful experience since most of the information and knowledge generated along the process was actually gathered, harmonised and distributed afterwards by BBR, Nordregio and Mcrit. Today, the virtual library including databases of policy-indicators, reports, interactive mapping facilities etc. is still publicly available through the web.

At this point, it is necessary to develop a clear vision of the future integration of all ESPON information and knowledge in order to guarantee that it becomes operational as a whole once the work programme has been concluded.

A step forward in this direction is the idea of a European policy support system (see Chapter 6.4).

3.2 Progress of the project

Since the 2nd Interim Report of the TPG 3.1 various action and progress has taken place. This progress is based on different activities and expressed in various fields of work covered by the ESPON Programme and therewith by the co-ordination activities of the TPG 3.1.

3.2.1 Networking undertaken

The central aim of the project 3.1 is to strengthen the ESPON programme level and by supporting the ESPON Co-ordination Unit in its task to secure integrated approaches and results of the whole ESPON programme.

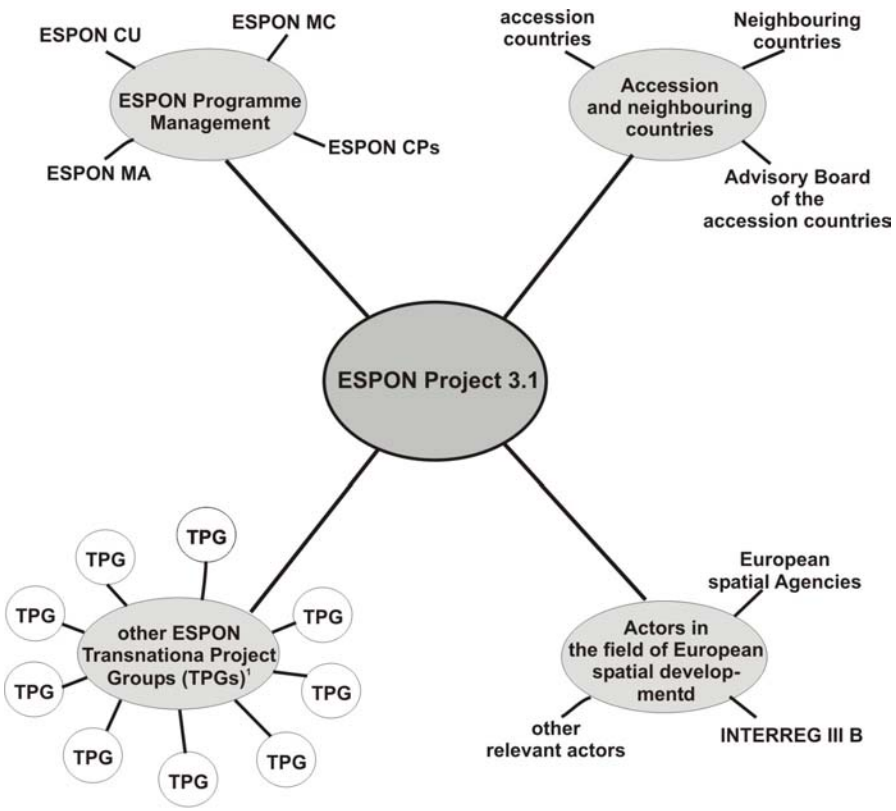
The first step to get good results is to create a fundamental common ground. For the ESPON Programme 2006 this means to get a common understanding about ESPON and a common "ESPON thinking". In this regard it was necessary to establish a good networking using effective tools.

Meetings with different actors were organised and realised by the ESPON CU and the project 3.1 to get, beside of the contact mostly realised by modern telecommunication facilities, real face to face contacts and to bring all key persons together. The TPG 3.1 gave guidance to the other TPGs in various ways, e.g. through technical and analytical support or indirectly through the ESPON META SWOT, TIA or the before mentioned 'Crete Guidance Paper' (see Chapter 4.3).

The philosophy or model of networking of the 3.1 project was explained already in the 1st IR. The networking activities of the project 3.1 can be subdivided in four groups. Networking with:

- the other ESPON Transnational Project Groups (TPGs)
- ESPON Programme management, i.e. ESPON Co-ordination Unit, ESPON Managing Authority, ESPON Monitoring Committee, ESPON Contact Points etc.
- INTERREG III B co-operation areas, European agencies and other actors in the field of European spatial development
- accession countries and neighbouring countries

Figure no 2: Networking activities of ESPON 3.1

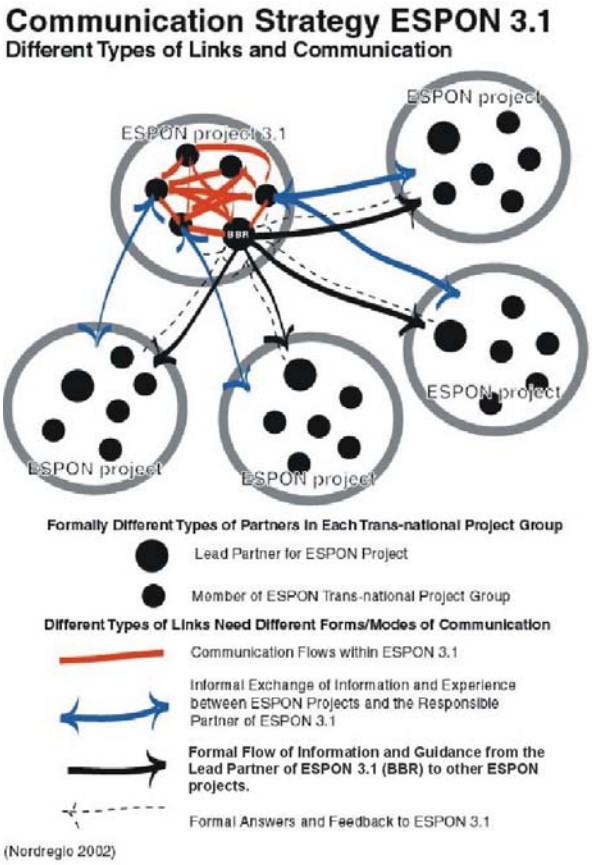


[1]total: 19 other TPGs

In the project 3.1 the team reflects the European range of different perspectives. The main goal is to come to joint results and conclusions and policy recommendations that are consensual in the working team wherever possible. In this sense, the working method is based on good internal communication and networking and the search for common results rather than a strict division of labour. Therefore the project is in close contact with the ESPON Programme management, other actors in the field of European spatial development (i.e. European Spatial Agencies), the accession countries as well as some neighbouring countries of the EU.

Beside of the important external work of the project, the internal co-operation and collaboration plays an important role. The internal project networking consists of an internal network between the members of the 3.1 project.

Figure no 3: Communication Strategy ESPON 3.1



The graphic shows that the partners inside of the 3.1 project are responsible for the informal exchange and information flows between 3.1 and the other TPGs.

Networking of the TPGs

The biggest success is that a lot of TPGs started the networking between themselves, especially since first useful outcomes brought to light. Beside of the success made, it seems that some TPGs still need the advice and guidance of the TPG 3.1 and the ESPON CU to get in touch with content related TPGs.
At this stage it can be said that the TPGs have to make more use of the TPG network by their own effort, for example, if data gaps are obvious they have also to contact related TPGs. A good result is that TPGs of the first round of ESPON projects are not only seen as providers or distributors. The projects of the further rounds do fundamental research and scientific work to support the programme. All participants make use of the common data base and first tentative results.

An important aspect is also to call on the ECPs, if data or documents are needed. It is one of the ECP roles to help the TPGs.

Networking between the project 3.1 and the TPGs

A lot of progress has been made in the field of networking in different ways since the first two ESPON seminars in Mondorf-les-Bains and in Panormo as well as the corresponding 3.1 interim reports.

The networking between the TPGs and the project 3.1 extended. Since the beginning of the year 2003 all TPGs are in contact with the co-ordinating, cross thematic project. Especially the work on the ESPON META SWOT, the TIA, and the 'Crete Guidance Paper' supported the networking and communication.

Former existing prejudices and doubts of the TPGs disappeared through good practise. More and more also informal ways of communication are being used, which shows good relationship between the different actors. Most of the networking activities currently is related to the data and GIS. This was the case until the end of the most projects in October 2003. One important new element for the networking is starting now, i.e. the exchange and improvement of policy recommendations. At this stage recommendations are provisional and tentative. During the process until October next year this will change to precise conclusions.

Beside of this the networking covers the full range of inquiries concerning practical aspects as well as theoretical aspects of the work. The participation of most of the 3.1 project partners in other TPGs helps networking.
Nevertheless, networking has to be further improved and some TPGs should be more active in the future. Networking is a mutual activity! The TPG 3.1 needs the input to do its work and to provide a useful and sound base.

Networking between the project 3.1, the ESPON CU and the DG Regio

The networking in particular with the ESPON CU and also with the DG Regio was implemented in different co-ordinating meetings as well as in an intensive and stable contact via modern telecommunication media. The ex-change is of utmost importance for the success of ESPON. It generated until now fruitful outcomes and facilitated the work of the parties.

Networking with the accession and neighbouring countries

ESPON project 3.1 tries to integrate the Accession Countries (ACs) as well as Neighbouring Countries (NCs) to facilitate common views on the spatial development trends and policy issues in an enlarging European Union. It should help to bring in the knowledge and specific views of ACs into the ESPON results and allow exchange of experience between the 3.1 TPG and experts of the ACs and NCs.

At this stage the networking of the 3.1 project with the ACs and NCs focus on the field of database and GIS. Especially inquiries towards the accession and neighbouring countries have been realised and will be continued during the next time. The data of mentioned countries are very important for the creation of a well founded and comprehensive data base.

Some ACs and NCs acceded the ESPON Programme formally and participate in an active way. At present, these countries are Hungary, Slovenia, Norway, Switzerland. Other countries still are observer countries. The acceded countries join different TPGs.

As mentioned in the former interim reports the TPG 3.1 will start deepening its networking with the ACs and NCs at a later stage. It should deal with specific thematic, political and methodological issues concerning the enlargement and neighbouring areas in the context of the ESPON 2006 Priorities and Measures.

Networking with other actors in the field of European Spatial Development

At the present time the networking with other related actors is not very developed in a formal way. A lot of ESPON TPG participants are working also for other European programmes or initiatives. In this way an 'informal' and limited exchange takes place. But the foreseen intensive networking with the different Interreg offices has not yet been started. (please see Chapter 6.3) The future role of the INTERACT Points, which are currently being implemented, with reference to ESPON 3.1 and the ESPON CU will have to be explored.

3.2.2 Guidance undertaken

As mentioned above a main task of the TPG 3.1 is to give guidance to the other TPGs.

Technical and analytical support

Since the first two ESPON Seminars and the first interim reports of the TPG 3.1 great efforts and good progress were made in the field of the ESPON data base, which is one of the headstones of the further work.

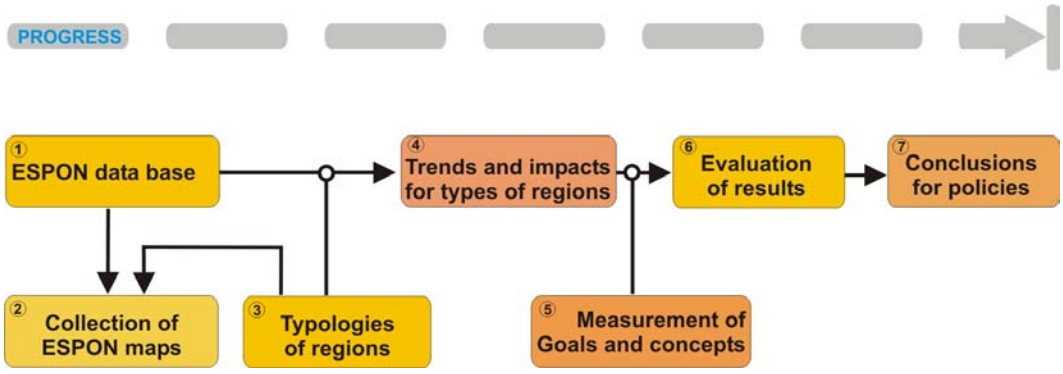
After the 2nd ESPON Seminar in Panormo, Crete, Greece, the so called 'Crete guidance paper'[8] was developed and sent to the TPGs. The guidance paper together with the standard layout for ESPON maps laid down a concerted action or common platform of all TPGs.

The Crete Guidance Paper

In Crete all TPGs agreed that common elements are needed that can be used by different TPGs. These common elements are necessary
(1) to make things simple and efficient by using results from other TPGs and
(2) to achieve coherent ESPON results.

The most important elements of the common platform are:

1. the ESPON data base (core indicators) including
2. a collection of ESPON maps (visualising the ESPON data base)
3. typologies of regions;
4. the analysis of trends and policy impacts related to different types of regions;
5. the operational definition and measurement of policy goals and concepts as a base for
6. the assessment and evaluation of results (trends and policy impacts) with reference to these policy goals and concepts;
7. conclusions for policies.



The structure of the Crete Guidance Paper follows these main topics

The latest version of the list of core indicators as well as typologies, extracted from the different inputs of the TPGs, has been further developed and is part of this report. See table Chapter 3.3 Activity Plan and Chapter 7.

Again it has to be stressed that the TPG 3.1 needs the queries of the other TPGs to EUROSTAT and the EU institutions to perform its work and contribute to the TPGs.

[8] Send out on 02.06.2003 by the 3.1 Project

Operational and methodological support undertaken since the last IR

Depending on the start of the projects, most of them started trying to define or have defined the concepts as well as typologies they are using. The project 3.1 noted that especially in this field the given guidance was needed to come to a common ESPON understanding. Here 3.1 as well as the ESPON Programme has to continue its way to come to excellent results.

Mayor effort is made since the last report on central issues: polycentrism and accessibility. The central role of this report play obviously the tentative policy recommendations

Undertaken activities, namely the SWOT analysis and the territorial impact analysis, show that for a lot of the corresponding TPGs the work on these types of analysis gave a good and productive impulse.

Beside of this, 'Guidance undertaken' of the TPG 3.1 goes also a little bit beyond the TPG frontier. Enquiries of different ESPONians[9] were managed and fulfilled in an informal way.

3.3 The activity plan second half 2003

Time	Activity
May	
04.05.2003	Informal 3.1 meeting
05. / 06 05.2003	2nd ESPON Seminar
07.05.2003	3rd Meeting of the TPG 3.1
20.05.03	Meeting with the ESPON CU and DG Regio
30.05.03	Delivery of the 'Crete Guidance Paper'
June	
16 / 17.06.2003	Meeting of the TPG Lead Partners
18.06.2003	4th Meeting of the TPG 3.1
24.06.2003	Participation of the 3.1 Lead Partner in the SUD-Meeting
August	
07.08.03	Meeting with the ESPON CU and DG Regio
15.08.2003	Standard Layout for the ESPON Map Collection
31.08.2003	Delivery of interim reports by the other TPGs

[9] ESPONians = people participating in the projects of the ESPON Programme 2006

September	
23.09.2003	Participation of the 3.1 Lead Partner in the SUD-Meeting
30.09.2003	Delivery of the 3rd IR of the TPG 3.1
October	
05.10.2003	Informal 3.1 meeting
06./ 07.10.2003	3rd ESPON Seminar
08.10.2003	5th Meeting of the TPG 3.1
xx.10.03	Meeting with the ESPON CU and DG Regio
End of November	Meeting with the ESPON CU and DG Regio

7 Further activities of the TPG 3.1

This chapter gives an outlook to the further activities of the TPG 3.1 in general and specifically with regard to the different topics. In twelve month, October 2004, the TPG 3.1 has to submit its final report. Until that time the TPG has to fulfil different tasks and to make progress in its work.

General outlook for the TPG 3.1 – the next 12 month

For the next twelve months the timetable shows different activities and tasks. It may seem that most of the work is done already, because of the very advanced results at this time. But its not the time to twiddle the thumbs.

Field of work	***Title/ Content***	***Period of time***
General	Preparation/ support and assistance ESPON Seminar 4 and 5	May 2004 and October 2004
General	Preparation/ support and assistance TPG Lead Partner Meeting	February 2004 (estimated)
General	Supporting the co-ordination activities of the ESPON CU	Continuous process
General	Co-ordination Meetings with the ESPON CU and the DG Regio	Regularly
General	Analysis of the different Interim Reports	March / April 2004
General	Analysis of the final reports of the ‚1st round TPGs'	August/ September 2004
General	Analysis of the different Interim Reports of the TPGs from the 2nd, 3rd ... rounds	August/ September 2004
General	Delivery of the own final 3.1 report	October 2004
Policy Recommendations	- analysis of further reports - different workshops towards soundly based policy recommendations (incl. TPG Leadpartner, MC-Members...)	1st and 2nd half of 2004 August 2004
Policy Recommendations	SWOT/ RCE - further development - final results	
Policy Recommendations	TIA - description of methodological approach - instruction manual - final results	October 2004
Database/ GIS	Completition of the ESPON GIS - ready for operation and handover	September 2004
Database/ GIS	Completition of the Hyperatlas ready for operation and handover	September 2004
Database / GIS	Completition of the ESPON Database	July 2004
Design and development	Policy Support System - first beta version - up-gradeable final version	 1st half of 2004 October 2004
Design and development	"Europe in the world"	October 2004
Design and development	Specific outlook on "Approaching Interreg and its contribution to territorial cohesion and polycentric development"	October 2004

Preparation of special meeting	Meeting with east European experts (Seminar, work shop...)	mid-2004
Preparation of special meeting	Work shop on ESPON results with political, scientific and practice experts	end of 2004
ESPON 3.2	Co-ordination meetings - support (with regard to administrative tasks) - assistance (with regard to administrative tasks) - interchange	various / until October 2004

Specific outlook on policy recommendations

For this reporting time no final report was required from the TPGs. Therefore the given first tentative policy recommendations were the base for the work of the corresponding chapter of this report. For the final report it is envisaged to provide precise policy recommendations. On the one hand the reports of the different TPGs should be part of the base for this work. On the other hand expert discussion and work shops are planed. Experts are the members of the ESPON MC, the DG Regio, other personal expert staff from the EC and different ESPON project partners. Final ESPON policy recommendations should have a maximum sound base.

Specific outlook on SWOT/RCE and TIA

As mentioned in the corresponding chapter, the work on the SWOT/RGE is not finished. The SWOTs by the TPGs are presently not all fully filled in and completed. The level of detail is varying. Until the mid of 2004 it is expected to receive all SWOTs completed. Only with the full filled in SWOTs and qualitatively high information the ideal can be reached. The chosen approach is highly ambitious. The RCE is an instrument which produces at the end interesting outcomes. The final result should be integrated into the work on policy recommendations.

The task on TIA is nearly fulfilled. The final result will include a description of the methodology as well as an instruction manual for further ESPON projects.

Specific outlook on the ESPON data base

Transfer of the data base from the TPG - orientated structure of the tables to a thematic structure according to the Data Navigator categories after all data have made available by all TPG's . The reconstruction of the data base will be

accompanied by final quality control and improving the data availability (missing values) through the TPG's responsible.

Extraction of additional separate tables which indicate the core indicators and typologies for fast and easy access to the main characteristics of the regional structures and developments and selected analytical and reporting tables resulting from queries within the Access data base.

Establishment of an integrated system that guarantee connections and nodes between data, GIS, Web-GIS, stools for spatial analysis and Hyperatlas.

Elaboration of a component for the generation of tables (just to mention the need producing tables in special format like those of the DG Regio table formats) and reports (including text, tables, graphics, maps).

Specific outlook on "Europe in the world"

This topic will presumably not be part of the final report, because it should be part the project 3.2, as it was planned since the start of the 3.1 project.

Specific outlook on "Approaching Interreg and its contribution to territorial cohesion and polycentric development"

As soon as the situation concerning the participation of the ESPON CU in Interact is clarified, an exact work plan for 3.1 can be decided. At present it is intended to include a case study on the Interreg North West Metropolitan Area in the final report.

Specific outlook on the ESPON Policy Support System (EPSS)

If the ESPON management agrees to the suggested approach and procedure, the TPG 3.1 would provide a first beta version of the EPSS in July/ August 2004. The mentioned version should be discussed by all concerned parties. An improved up-gradeable version could be a product for the final report.

Table no 5: ESPON – Core Typologies

	Typology according Crete Guidance Paper					
	Typology according end of August report					
Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Urban areas	1 Global level	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	2 International level					
	3 National/tansnational level					
	4 Regional level					
	5 Local level					
Functional urban areas (FUAs)	1 Metropoltain European Growth Areas (MEGAs)	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	2 transnational / national FUAs					
	3 Regional / local FUAs					
MEGAs	1 Global nodes	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	2 European Engines					
	3 Strong MEGAs					
	4 Potential MEGAs					
	5 Weak MEGAs					
6 Type NUTS 3 FUAs	1+ Monocentric NUTS 3 (FUA exceed NUTS 3 boundaries)	1.1.1	EU27+2	NUTS 3	NUTS 5	2000
	0+ NUTS 3 region neighbouring 1+ NUTS 3 region					
	1 monocentric NUTS 3 (only 1 FUA)					
	2 bipolar NUTS 3 (two FUAs)					
	3 polycentric NUTS 3 (three or more FUAs)					
	0 no FUA					
19 Type NUTS 3 FUAs	1+A MEGA FUA (exceeds NUTS3 boundaries)	1.1.1	EU27+2	NUTS 3		2000
	1+B Transnational/national FUA (exceeds NUTS3 boundaries)					
	1+C Regional/local FUA (exceeds NUTS3 boundaries)					
	1B transnational/national FUA					
	1B- transnational/national FUA, but FUA population smaller than non-FUA population					
	1C regional/local FUA					
	1C- regional/local FUA, but FUA population smaller than non-FUA population					
	2A at least one of FUAs is MEGA					
	2B at least one of FUAs is transnational/national FUA					
	2B- at least one of FUAs is transnational/national FUA, but FUA population smaller than non-					
	FUA population					
	2C two regional/local FUAs					
	2C- two regional/local FUAs, but urban population smaller than rural population					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
	3A at least one of FUAs is MEGA					
	3B at least one of FUAs is transnational/national FUA					
	3B- at least one of FUAs is transnational/national FUA, but FUA population smaller than non-					
	FUA population					
	3C only regional/local FUAs					
	3C- only regional/local FUAs, but FUA population smaller than non-FUA population					
	0+ neighbouring 1+ NUTS3 region					
	0 no FUA					
Rural - urban Relation	1 regions dominated by a large metropolis	1.1.2	EU27+2	NUTS 3		2000
	2 polycentric regions with high urban and rural densities					
	3 polycentric regions with high urban densities					
	4 rural areas under metropolitan influence					
	5 rural areas with small and medium sized towns					
	6 remote rural areas					
Typology of population density and Functional urrban areas	1 Densely populated with high urban integration	1.1.2	EU27+2	NUTS 3		2000
	2 Not densely populated but high urban intgration					
	3 Not densely populated and low urban integration					
Urban - rural typology	1 Urban denely populated and high urban integration	1.1.2	EU27+2	NUTS 3		2000
	2 Urban-rural, densely populated and high urban integration					
	3 Urban-rural, not densely populated but high urban integration					
	4 Urban-peripheral, not densely populated and low urban integration					
	5 Rural -urban, densely populated and high urban integration					
	6 Rural -urban, not densely populated but high urban integration					
	4 Rural-peripheral, not densely populated and low urban integration					
	8 Peripheral-urban, densely populated and high urban integration					
	9 Peripheral-rural, densely populated but high urban integration					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
	10 Peripheral, not densely populated and low urban integration					
Cross-border functionality and participation	Symmetric with small differences between neighbouring regions and suitable infrastructure for cross-border integration (1)	1.1.3	EU27+2	NUTS 3		
	Symmetric with small differences between neighbouring regions but important barriers for cross-border integration (3)					
	Asymmetric with large differences between neighbouring regions and suitable infrastructure for cross-border integration (2)					
	Asymmetric with large differences between neighbouring regions but suitable infrastructure for cross-border integration (4)					
Population change	Increase of population with in-migration and natural increase (1)	1.1.4	EU27+2	NUTS 3		1995-1999
	Increase of population with in-migration and natural decrease (2)					
	Increase of population with out-migration and natural increase (3)					
	Decrease of population with out-migration and natural decrease (4)					
	Decrease of population with in-migration and natural decrease (5)					
	Decrease of population with out-migration and natural increase (6)					
Population change in regions with high share of elderly people	Increase of population with in-migration and natural increase (1)	1.1.4	EU27+2	NUTS 3		1995-1999
	Increase of population with in-migration and natural decrease (2)					
	Increase of population with out-migration and natural increase (3)					
	Decrease of population with out-migration and natural decrease (4)					
	Decrease of population with in-migration and natural decrease (5)					
	Decrease of population with out-migration and natural increase (6)					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Typology of depolulation	Very strong depopulation (1)	1.1.4	EU27+2	NUTS 3		1995-1999
	Strong depolulation (2)					
	Depopulation (3)					
	Possible depopulation (4)					
	No depopulation (5)					
Accessibility and GDP	1 Successful regions with high accessibility	1.2.1	EU27+2	NUTS 3	NUTS 5	2000
	2 Successful peripheral regions					
	3 Lagging regions in the European core					
	4 Lagging peripheral regions					
Typology of infrastructure endowment	D Strongly mobitlity dependancy with need of process governement (Low level of infrastructrual density and poor use level)	1.2.1	EU27+2	NUTS 3	NUTS 5	2000
	C Risk of congestion and need for distribution of activity (High level of infrastructrual density and poor use level)					
	B Congestion regions with need of infrastructrual improvement (Low level of infrastructrual density and good use level)					
	A Unproblematic and use adequate poor infrastructure but (Low level of infrastructrual density and good use level)					
Broadband penetration	1 Low	1.2.2	EU27+2	NUTS 2		
	2 Medium					
	3 High					
Introduction of Competitive provision	1 Early	1.2.2	EU27+2	NUTS 2		
	2 Late					
Broadband penetration / Introduction of Competitive provision	1 High broadband - early competition	1.2.2	EU27+2	NUTS 2		
	2 High broadband - late competition					
	3 Medium broadband - early competition					
	4 Medium broadband - late competition					
	5 Low broadband - early competition					
	6 Low broadband - late competition					
Telekom supply and demand characteristics	1 Core Urban Rich	1.2.2	EU27+2	NUTS 2		
	2 Core Urban Poor					
	3 Core Rural Rich					
	4 Core Rural Poor					
	5 Periphery Urban Rich					
	6 Periphery Urban Poor					
	7 Periphery Rural Rich					
	8 Periphery Rural Poor					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Nodal structure of telecommunicatio n networks	to be specified	1.2.2				
Differentation related to advanced technologies	to be specified	1.2.2				
TN&S related spatial selectivity	to be specified	1.2.2				
Mountainous Regions	to be specified	1.3.1	EU27+2	NUTS 3	NUTS 5	2000
Extent and magnitude of natural and technological hazards	to be specified	1.3.1	EU27+2	NUTS 3		2000
Hazrad potential and vulnerability	Ordinal typology taking inti account degree of hazards and vulnerability	1.3.1	EU27+2	NUTS 3		2000
Costal Regions	to be specified	1.3.2	EU27+2	NUTS 3	NUTS 5	2000
Regions by type of impact of ICTs policies	Lagging regions reacting to cohesion ICTs policies	2.1.1	EU27+2	NUTS 3	NUTS 5	2000
	Lagging regions reacting to all ICTs policies					
	Non lagging regions with low needs of ICTs policies					
	Non lagging regions reacting particularly to efficiency policies					
Central-peripherical typology	1 Most accessible region	2.1.1	EU27+2	NUTS 3	NUTS 5	2000
	+ or - centrality and periperality					
	n peripheral regions					
EU Structural Funds Objective regions	Objective 1 regions	2.1.1 / 3.1	EU27+2	NUTS 3	NUTS 2	Structural fund period 2000-2006
	Objective 2 regions					
Pentagon	Regions within the Pentagon	2.1.1	EU27+2	NUTS 3	NUTS 2	
Lagging Regions	1 lagging regions	2.1.1	EU27+2	NUTS 3	NUTS 2	
	2 potentially lagging regions					
	3 non lagging regions					
R&D and innovation capacity	High R&D capacity and high innovation capacity	2.1.2	EU15 (EU27+2)			
	High R&D capacity but low or medium innovation capacity					
	Low or medium R&D capacity but high innovation capacity					
	Medium R&D capacity and medium innovation capacity					
	Low R&D capacity and low innovation capacity					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
R&D Regions	1 R&D Rich Regions	2.1.2	EU27+2			2000
	2 R&D Poor Regions					
R&D Market Regions	1 R&D Producing Regions	2.1.2	EU27+2			2000
	2 R&D Using Regions					
	3 R&D Poor Regions					
Rural Areas	1 predominantly leading rural areas	2.1.3	EU27+2			2000
	2 predominantly lagging rural areas					
	3 intermediate leading rural areas					
	4 intermediate lagging rural areas					
	5 leading urban areas					
	6 lagging urban areas					
Less favoured areas	1 permanent handicaps (altitude, poor soils, climate, steep slopes)	2.1.3	EU27+2			2000
	2 undergoing depopu-lation or having very low densities of settlement					
	3 experiencing poor drainage, having inade-quate infrastructures, or needing support for rural tourism, crafts and other supplementary activities.					
Predominant Farmtype	to be specified	2.1.3				
Agricultural holdings	Level 1: General farm types	2.1.3	EU27+2			2000
	Level 2: Principal farm types					
	Level 3: Particular farm types					
	Level 4: Subdivisions of level 3					
Regions towards Energy Ladders		2.1.4	EU27+2	NUTS 3		2000
Energy involvement and sensitivity	1 economically dynamic and energy efficient regions	2.1.4	EU27+2	NUTS 3		2000
	2 regions where energy is a bottleneck impeding development					
	3 regions with a strong potential for alternative energies					
	4 regions that are more influenced (either positively or negatively) by energy trends					
Dominant Structural funds spending	R Regional developement, productive infra-structure	2.2.1	EU15	NUTS 3		Structural fund period
	A Agricultural, fishery, rural development					
	S Social integration, human resources					
	C Basic infrastructure, European cohesion					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Structural Fund spending and regional performance	Low Spending - High Performance	2.2.1	EU15	NUTS 2		Structural fund period
	Low Spending - Medium Performance					
	Low Spending - Low Performance					
	Medium Spending - High Performance					
	Medium Spending - Medium Performance					
	Medium Spending - Low Performance					
	High Spending - High Performance					
	High Spending - Medium Performance					
	High Spending - Low Performance					
Structural Fund spending and change or regional performance ranking	Low Spending - Rise in Ranking	2.2.1	EU15	NUTS 2		Structural fund period
	Low Spending - Stable in Ranking					
	Low Spending - Fall in Ranking					
	Medium Spending - Rise in Ranking					
	Medium Spending - Stable in Ranking					
	Medium Spending - Fall in Ranking					
	High Spending - Rise in Ranking					
	High Spending - Stable in Ranking					
	High Spending - Fall in Ranking					
Sectoral Economic structure in the Candidate Countries	Regions with large agriculture and low to medium employment density	2.2.2	ACC12	NUTS 3		
	Regions with medium agriculture and low employment density					
	Regions with low agriculture, mostly strongly industrialised and low to mediu employment density					
Regional conditions based on potentials and bottlenecks	Capital cities/major urban agglomerations	2.2.2	ACC12	NUTS 3		
	Western border regions					
	Peripheral eastern and rural regions					
	Old industrial regions					
Typology of urban area	Absolute difficulty	2.2.3	EU27+2	NUTS3	NUTS 5	
	with 5 subtypes according absolute and relative difficulties					
	Relative difficulty					
	with 2 subtypes according absolute and relative difficulties					
	Not in difficulty					

Typology	Regional Types	TPG responsible	Spatial scope	Regional level		Year
Urban Structural changes	1 Declining urban industrial areas	2.2.3	EU27+2	NUTS 3		2000
	2 Strengthening urban industrial areas					
	3 Urban industrial areas in transformation to a service economy					
	4 Urban areas exhibiting strong socio-economic disparities					
	5 Urban areas exhibiting a balanced distribution of wealth and opportunity					
Underlying urban features	1 Economic capital	2.2.3	EU27+2	NUTS 3		2000
	2 Social capital					
	3 Network capital					
	4 Environmental capital					
Settlement structure	1 Central Areas in agglomerated regions	3.1	EU27+2	NUTS 3	NUTS 2	2000
	2 Highly densely areas in agglomerated regions					
	3 Densely areas in agglomerated regions					
	4 Rural areas in agglomerated regions					
	5 Central Areas in densely populated regions					
	6 Densely areas in in densely populated regions					
	7 Rural areas in in densely populated regions					
	8 Rural area more densely populated					
	9 Rural area less densely populated					
Border regions		3.1	EU27+2	NUTS 3	NUTS 5	2000
Interreg III A regions		3.1	EU27+2	NUTS 3	NUTS 5	2000
Interreg III B regions		3.1	EU27+2	NUTS 3	NUTS 5	2000