

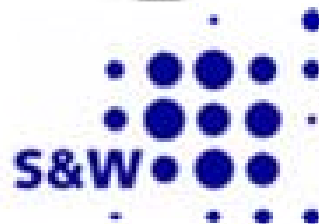
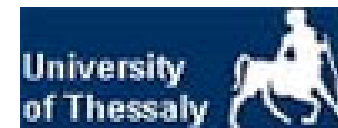


Making the European Territory Open and Polycentric

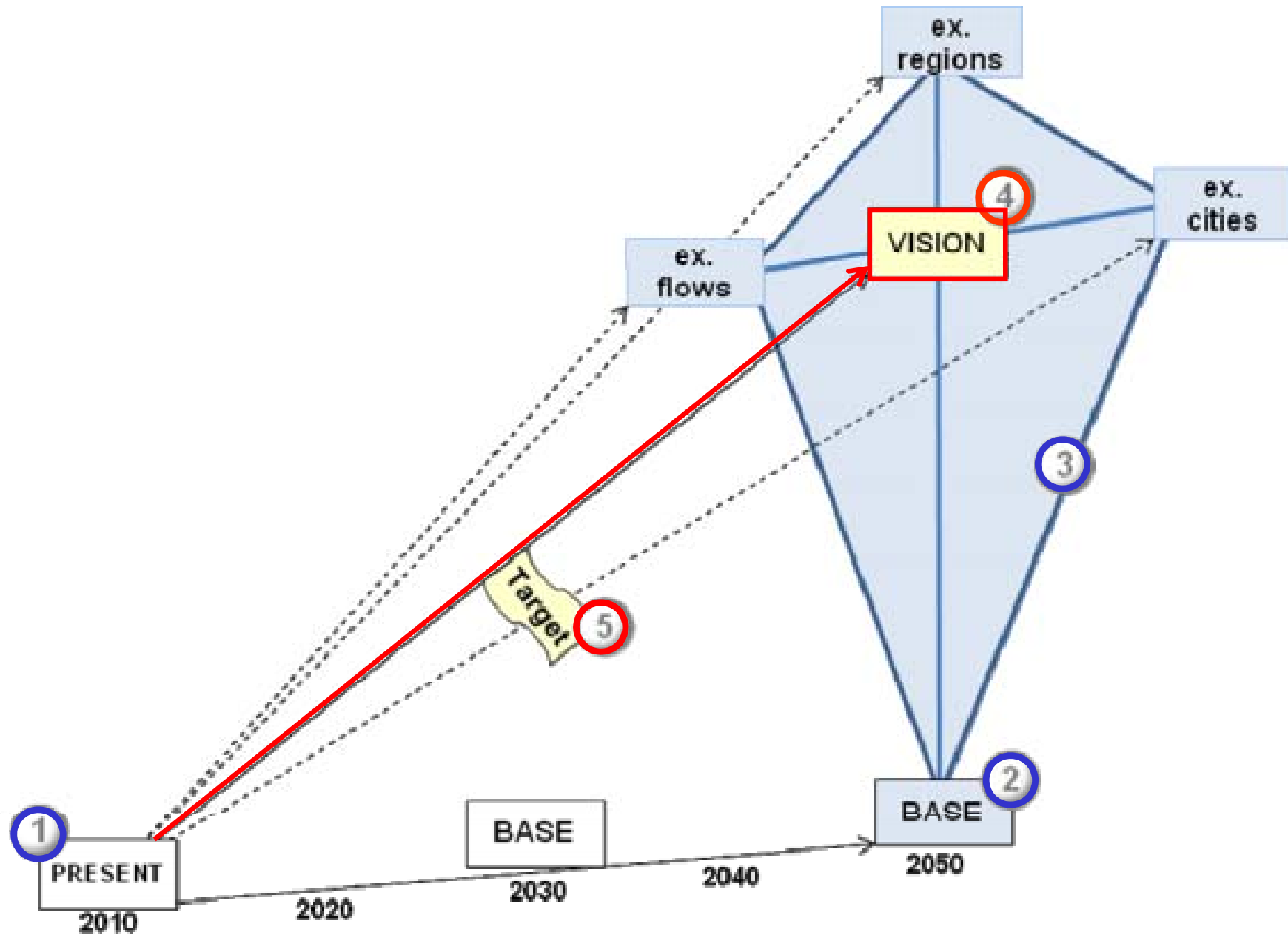
ESPON Conference
Brussels, 29th April 2014



ESPON ET2050 Consortium: 13 partners from 11 countries



Methodology: Scenarios, Vision & Political pathways





Demography	MULTIPOLES (2010-2030) Cohort-component, hierarchical, multiregional, supranational model of population dynamics (up to 2030)	ESPON at NUTS2	IOM
Economy	MASST3 (2010-2030) Econometric: social, macroeconomic and Territorial (up to 2030)	ESPON at NUTS2	POLIMI
Transport	MOSAIC (2010-2030) Integrated modal split and traffic assignment based on TRANSTOOLS OD trip matrices (up to 2030)	EU27 at NUTS2	MCRIT
Land-use	METRONAMICA (2010-2050) Spatial and dynamic land use model that Uses constrained cellular automata to allocate land-uses (up to 2050)	EU27 at Cells 1 km2	RIKS
Integrated	SASI (2010-2050) Dynamic System (up to 2050)	ESPON and Western Balkans at NUTS3	S&W

ESPON Monitoring Committee Workshops



Kraków, 29-30 November 2011



Aalborg, 13-14 June 2012



Brussels, 28 September 2012



Paphos, 4-6 December 2012



Dublin, 12-14 June 2013

European Commission, Parliament and Committee of Regions



22 Nov 2012 in Warsaw



Mrs. Hubner, 26 February 2013



European Parliament, 25 June 2013



DGREGIO EC, 25 June 2013



COTER 9th October 2013



Stakeholders, 11 October 2013



Scenarios > Vision > Pathways





Scenarios > Vision > Pathways

Baseline 2030

Territorial Scenarios 2050

ESPON Conference, Brussels, 29th April 2014

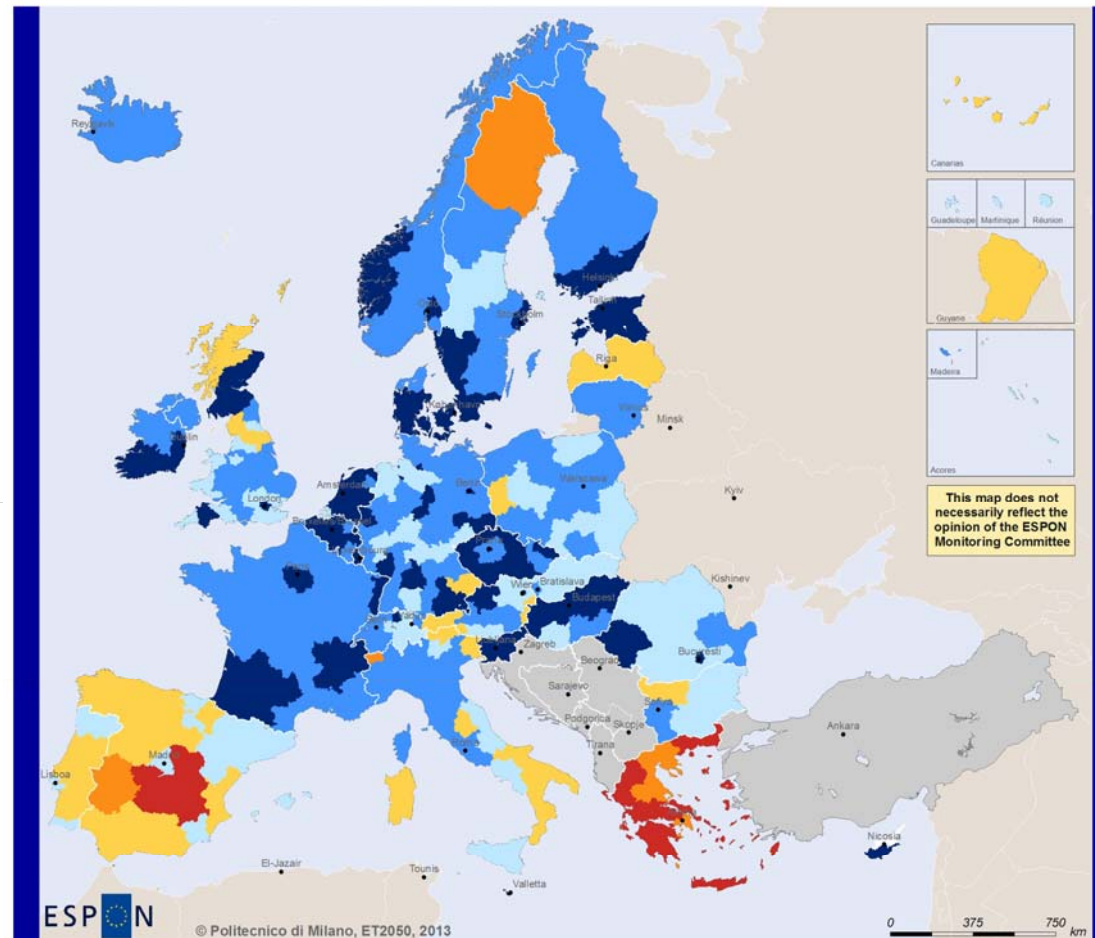


Present Situation: Europe in the crisis aftermath

- Before the 2008 crisis:
 - The progress towards the Single Market and Cohesion Policy were considered an overall successful history
 - Concerns on the “Steady Decline” of most developed European economies
- After the crisis:
 - Growing social and regional unbalances
 - Gaps with neighbouring countries as cause of social and political instability
 - Stronger claims for deep reforms in European policies

GDP Growth 2010 - 2030 (Baseline)

Measured as annual average GDP growth rate along the period



ESPON
 EUROPEAN UNION
 Part-financed by the European Regional Development Fund
 INVESTING IN YOUR FUTURE

Regional level: NUTS2
 Source: Politecnico di Milano, 2013
 Origin of data: MASST3 Model
 © EuroGeographics Association for administrative boundaries

GDP Growth annual average rate (Units: %)

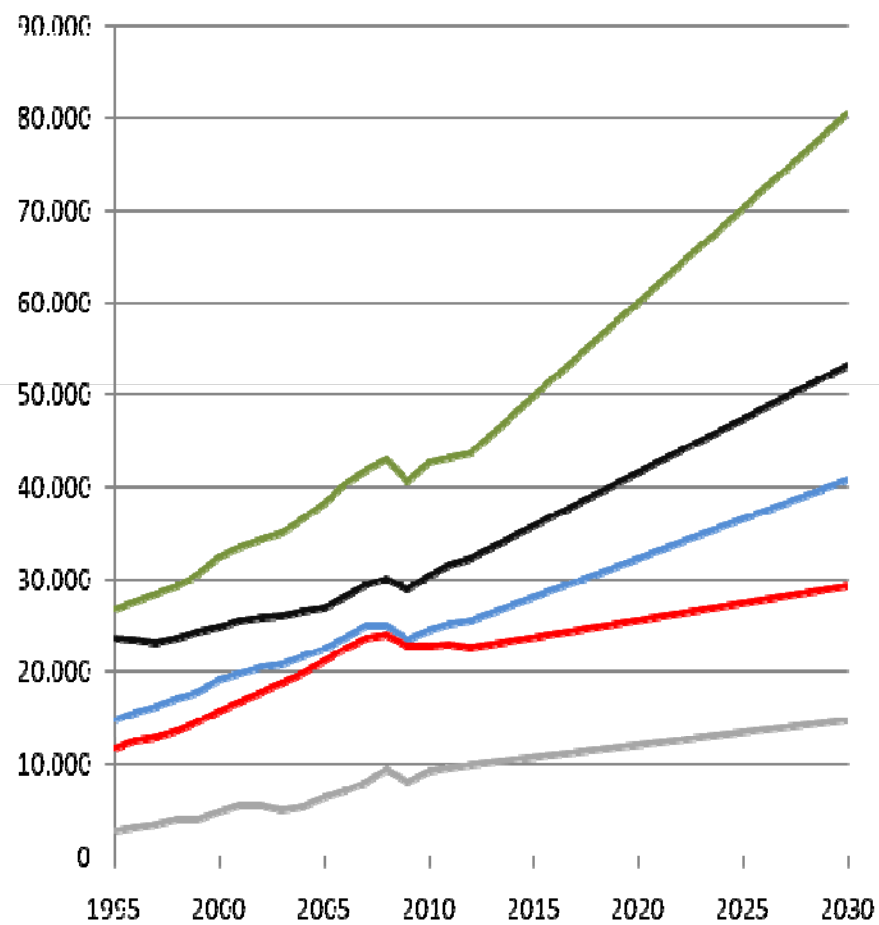
Results obtained by MASST3 forecast model



GDP a.a.: 1,89 %

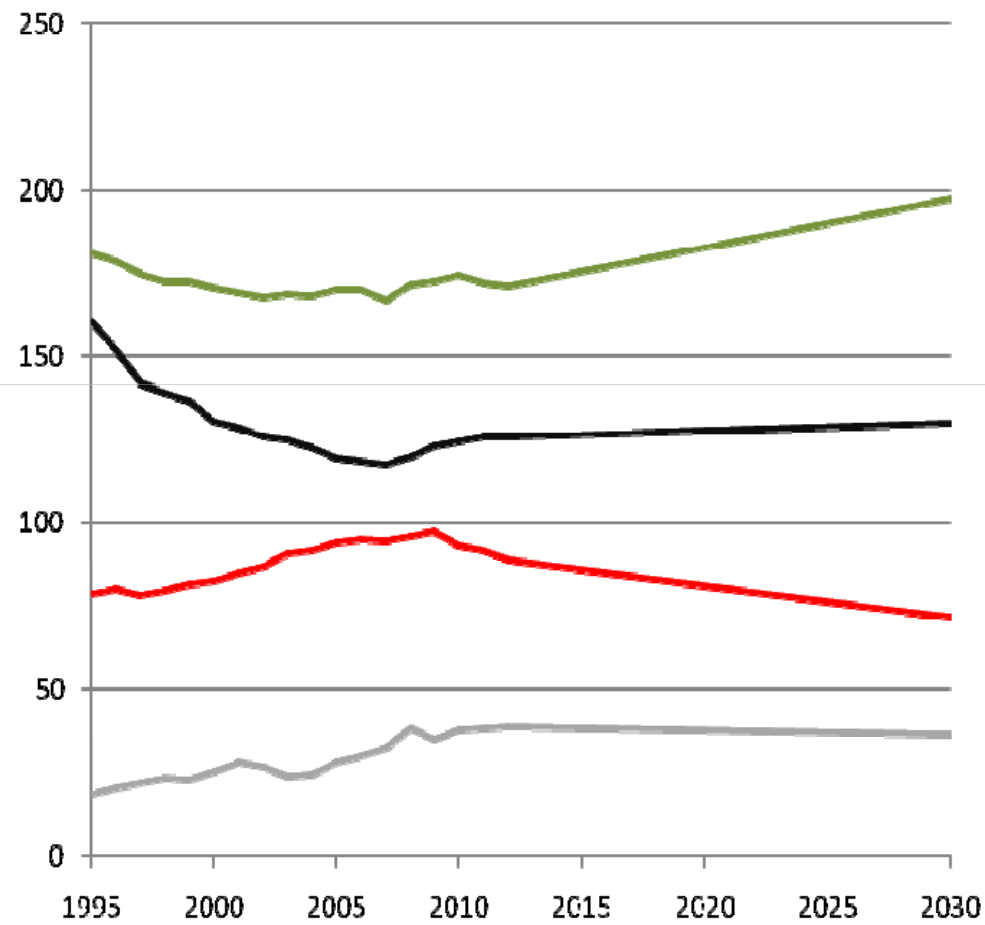
45 regions bellow 1,00 %

GDP/CAP



— European Union (27 countries) — Denmark
— Germany — Spain
— Poland

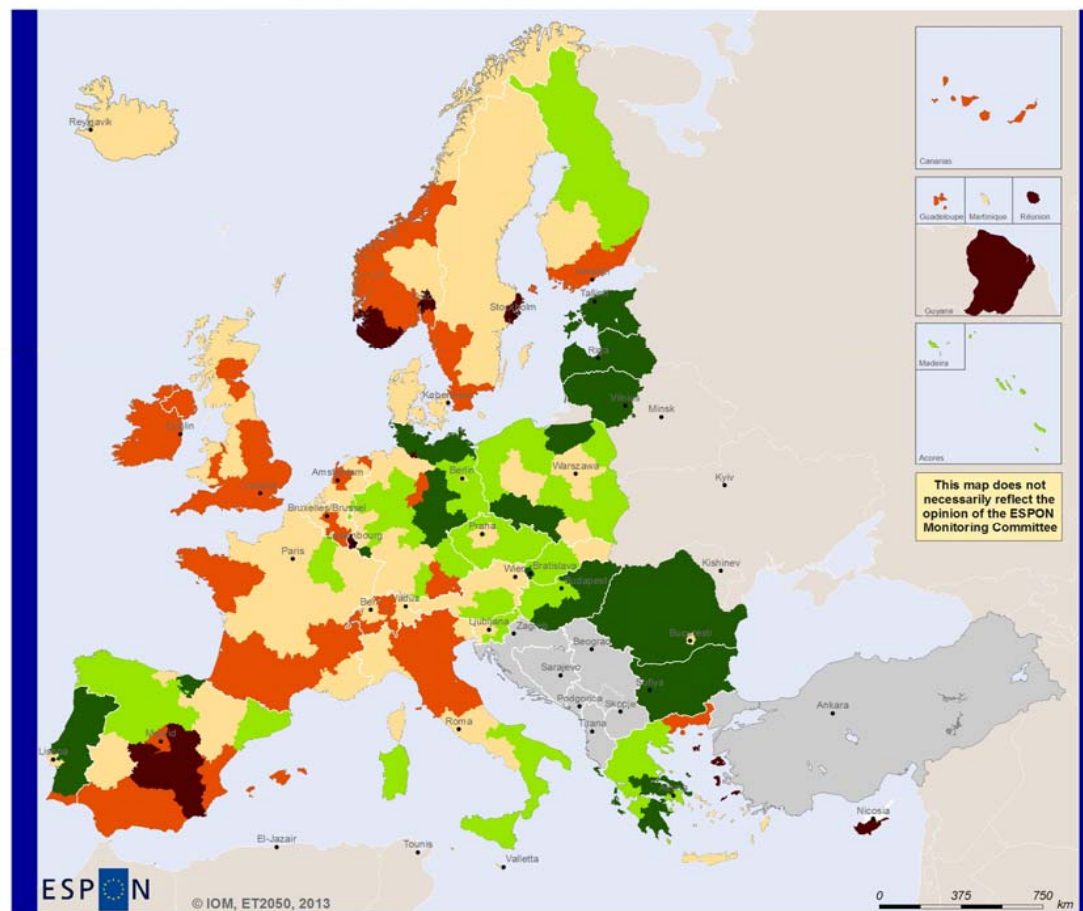
GDP/CAP EU27=100



— Denmark — Germany — Spain — Poland

Total Population 2010 - 2030 (Baseline)

Measured as annual population change

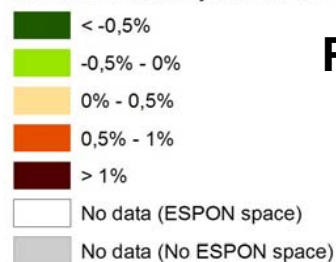


EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS2
Source: IOM, 2013
Origin of data: MULTIPOLES Model
© EuroGeographics Association for administrative boundaries

Annual population change (Units: %)

Results obtained by MULTIPOLES forecast model



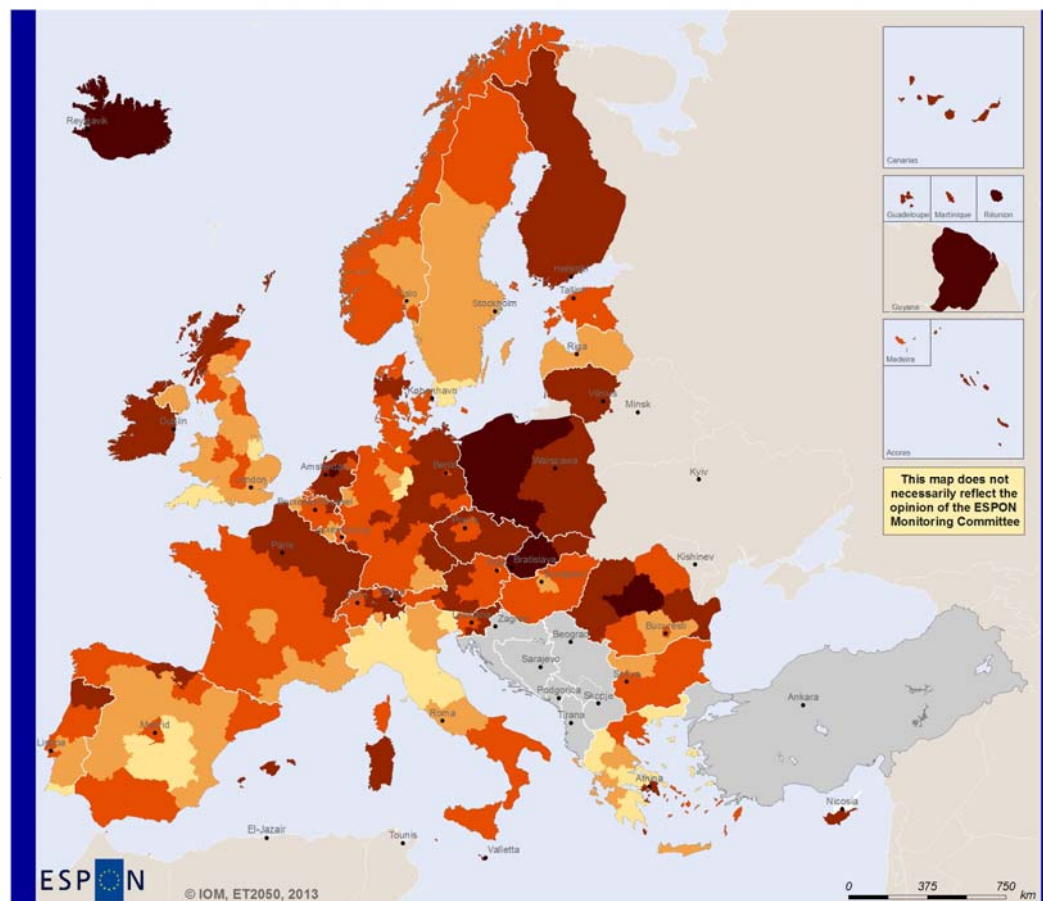
Population: from 514 to 530 inh.

European population growth will tend towards stabilisation. Total population (ESPON Space) will grow from 514 million in 2010 to 530 million in 2030.

MULTIPOLES is a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Ageing 2010 - 2030 (Baseline)

Measured as annual ageing increase rate



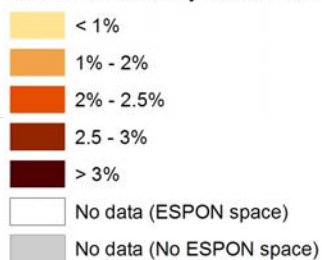
ESPON © IOM, ET2050, 2013

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS2
Source: IOM, 2013
Origin of data: MULTIPOLES Model
© EuroGeographics Association for administrative boundaries

Old-Age Dependency Rate 2010 - 2030 increase (Units: %)

Results obtained by MULTIPOLES forecast model

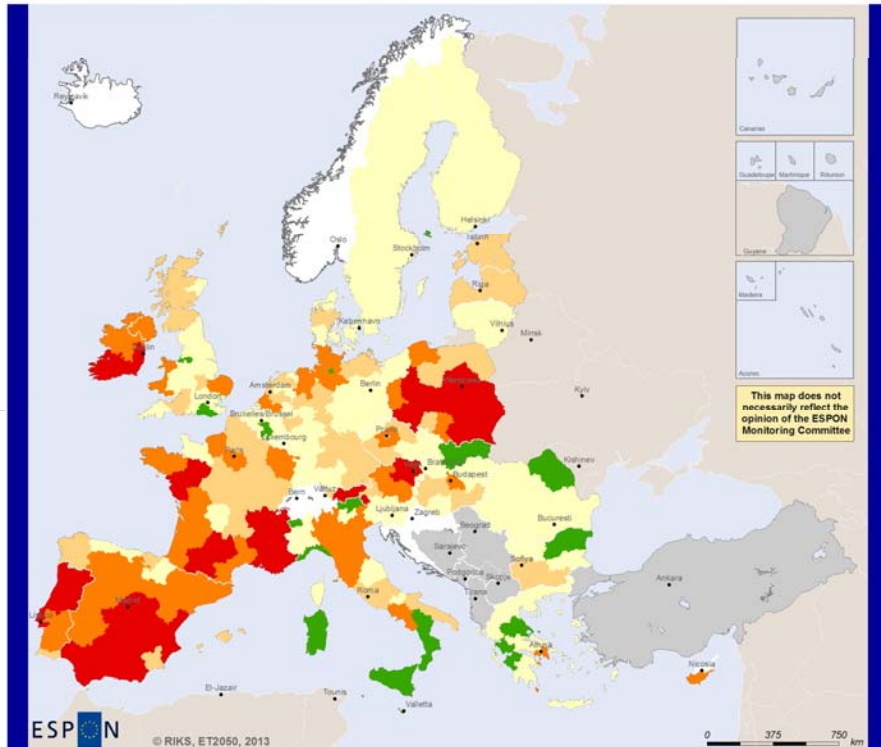


Ageing grows fast across Europe. Percentage of population older than 65 years increases in Europe from 25% to 40% (210M of elderly). MULTIPOLES a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants. The Old-Age Dependency Rate is measured: ODR = Population > 64 / population 16 - 64.

Annual land take 2000 - 2006

Based on CORINE

Measured as km² of res., com. and ind. land take per year (res. tourism not included)

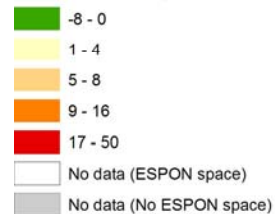


ESPON
© RIKS, ET2050, 2013

Regional level: NUTS3
Source: Research Institute for Knowledge Systems (RIKS), 2014
Origin of data: METRONAMICA Model
© EuroGeographics Association for administrative boundaries

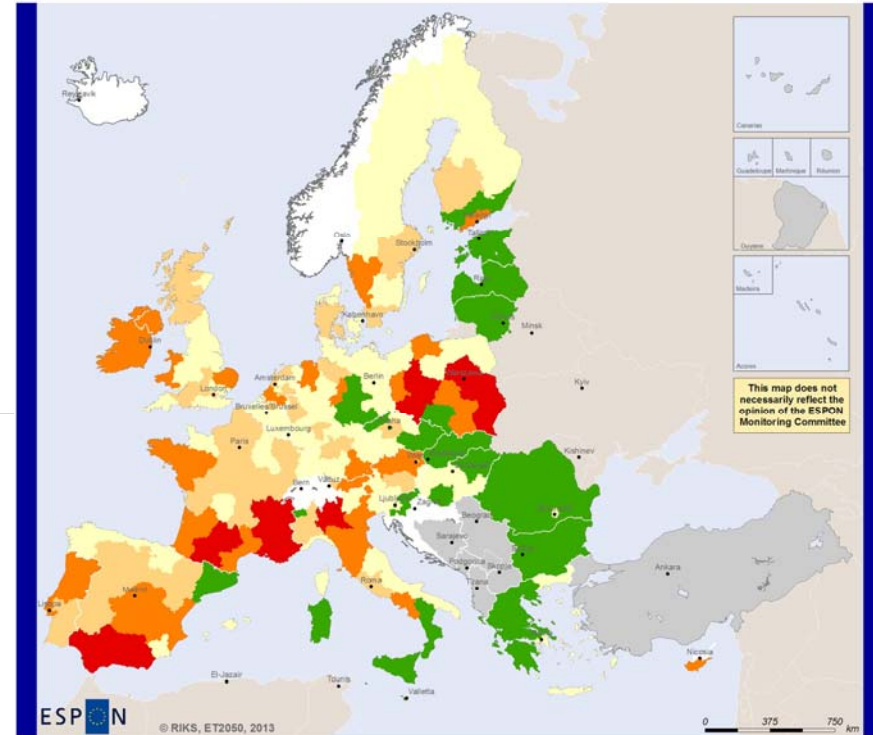
Annual land take 2000 - 2006 (Units: km²/ year)

Results obtained by METRONAMICA forecast model



Annual land take 2010 - 2030 (Baseline)

Measured as km² of res., com. and ind. land take per year (res. tourism not included)

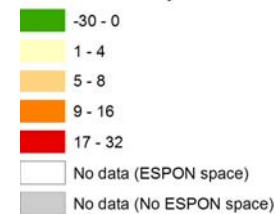


ESPON
© RIKS, ET2050, 2013

Regional level: NUTS3
Source: Research Institute for Knowledge Systems (RIKS), 2014
Origin of data: METRONAMICA Model
© EuroGeographics Association for administrative boundaries

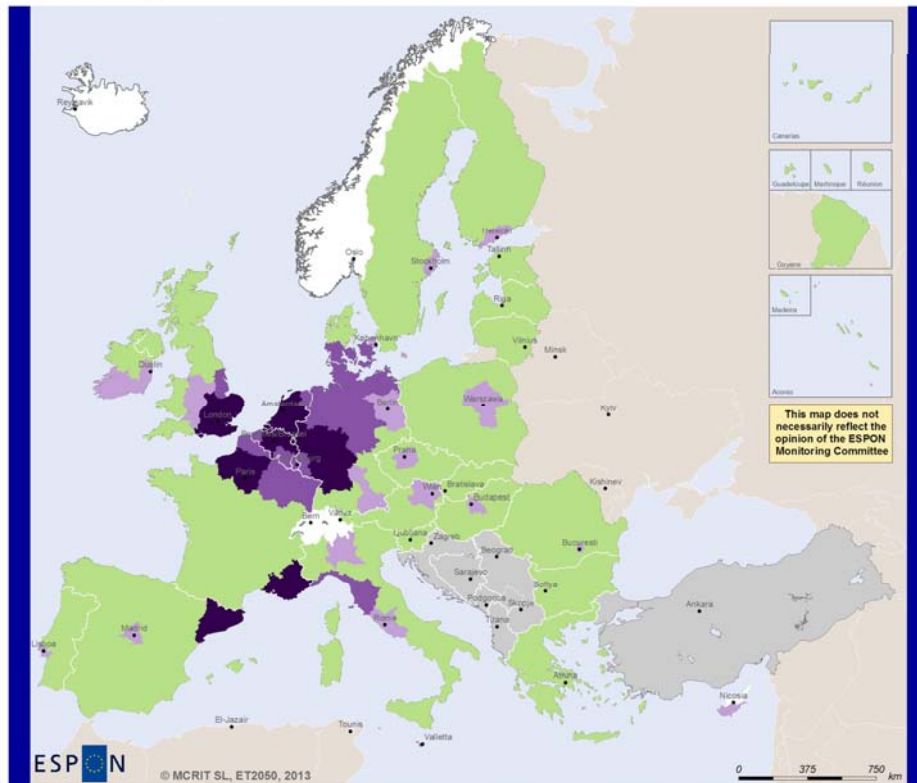
Annual land take 2010 - 2030 (Units: km²/ year)

Results obtained by METRONAMICA forecast model



Global Accessibility 2010 - 2030 (Baseline)

Measured as potential intercontinental airplane seats and containers in relation EU average



This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS2
Source: MCRIT, 2013
Origin of data: MCRIT

© EuroGeographics Association for administrative boundaries

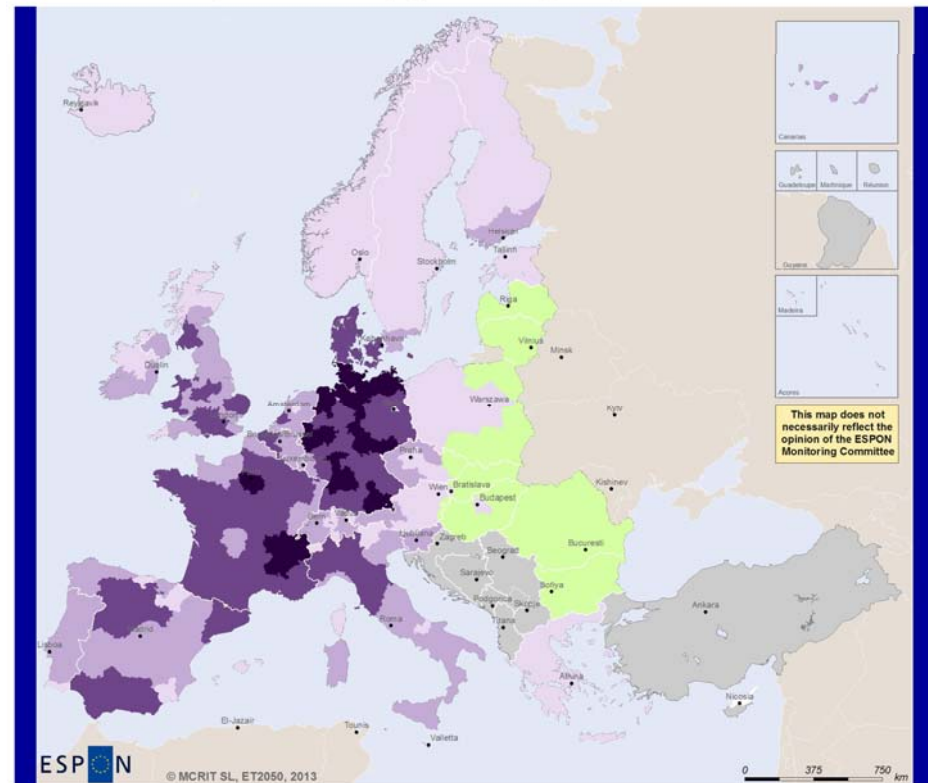
Passengers and Freight Global Accessibility

- Passengers and Freight accessibility are expected to increase below EU average
- Passengers accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- Passengers and Freight accessibility are expected to increase over EU average
- No data (ESPON space)
- No data (No ESPON space)

Global accessibility will increase around transport nodes: intercontinental airports and freight ports.

European Accessibility 2010 - 2030 (Baseline)

Measured as change in accessible population weighed by shortest access time



This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

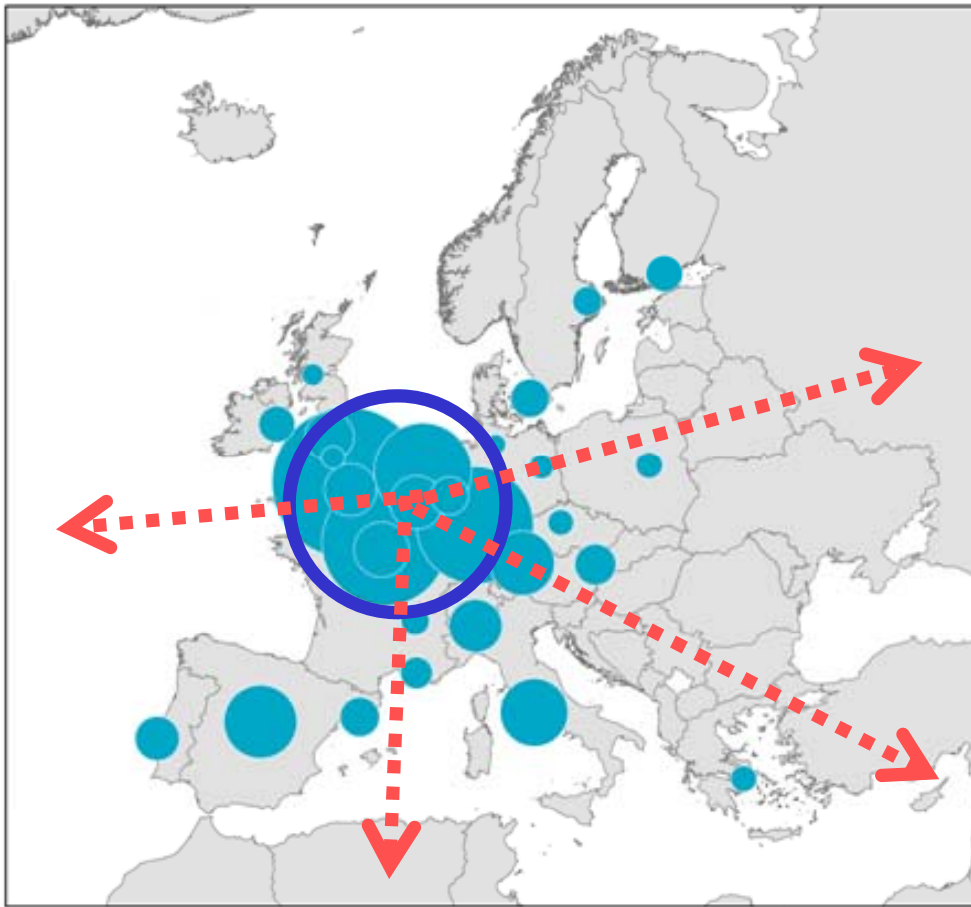
Regional level: NUTS2
Source: MCRIT, 2013
Origin of data: MCRIT

© EuroGeographics Association for administrative boundaries

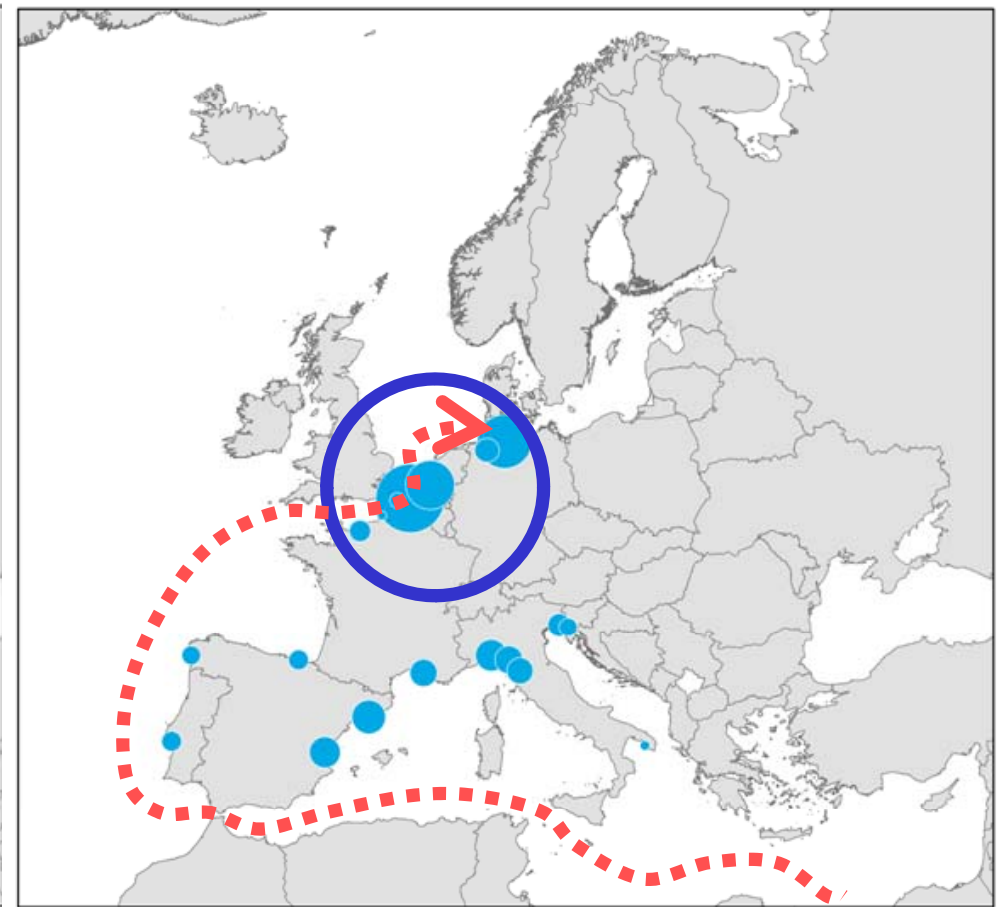
Absolute variation in accessibility 2010-2030 (Units: Millions Equivalent population)

- < - 0
- 1 - 5
- 5 - 25
- 25 - 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

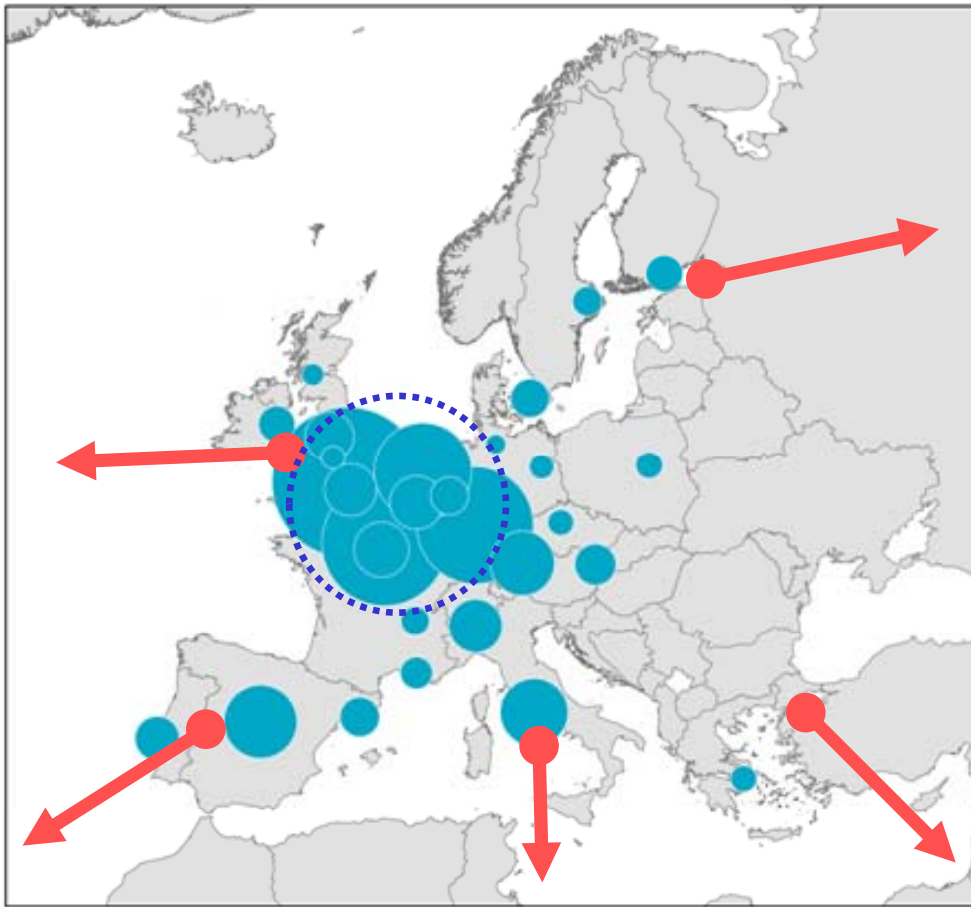
Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions. The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighed by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPLES-MASST models and shortest multimodal access by MOSAIC model.



60% of intercontinental Revenue Passenger-kilometres (RPK) through 4 European Hubs: Heathrow, Paris CDG, Frankfurt and Schiphol

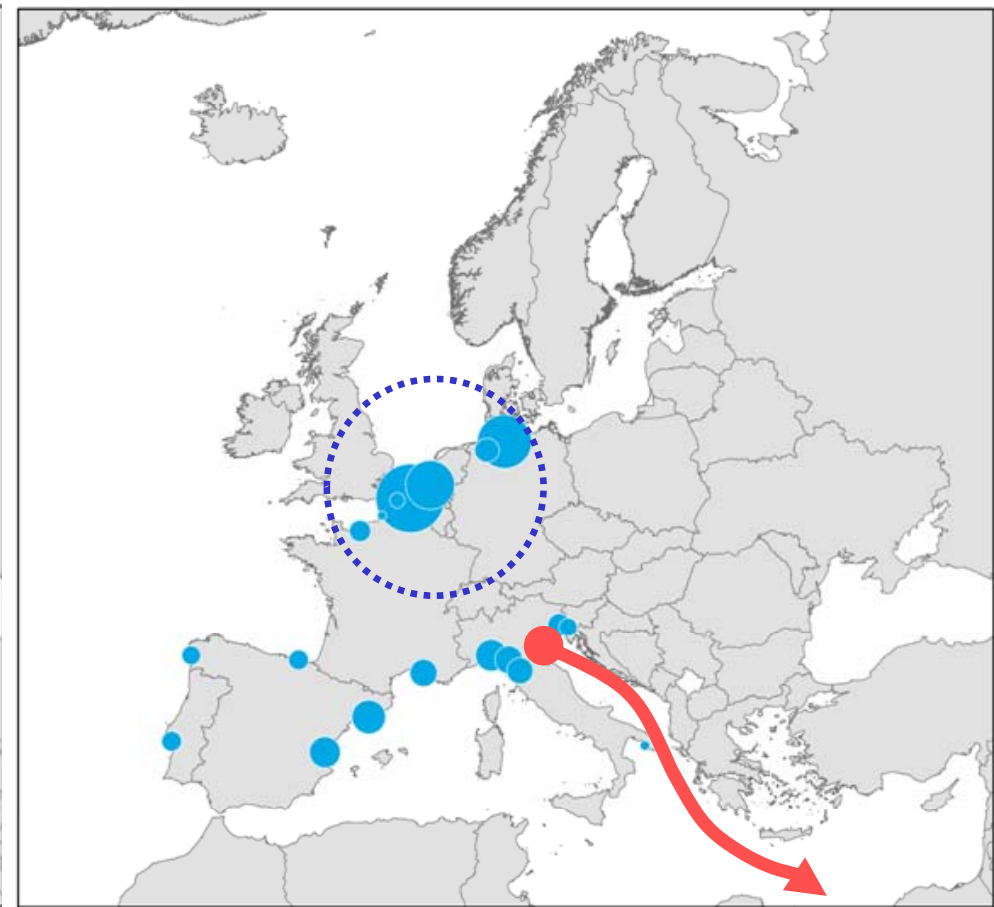


50% of the container traffic in Europe handled in 4 major hubs: Antwerp, Rotterdam, Hamburg, Bremerhaven



A redistribution of intercontinental air transport involving 25% of existing traffics in four hubs towards more favourable airport locations: **savings between €1.05 billion and €10.45 during the next thirty years**

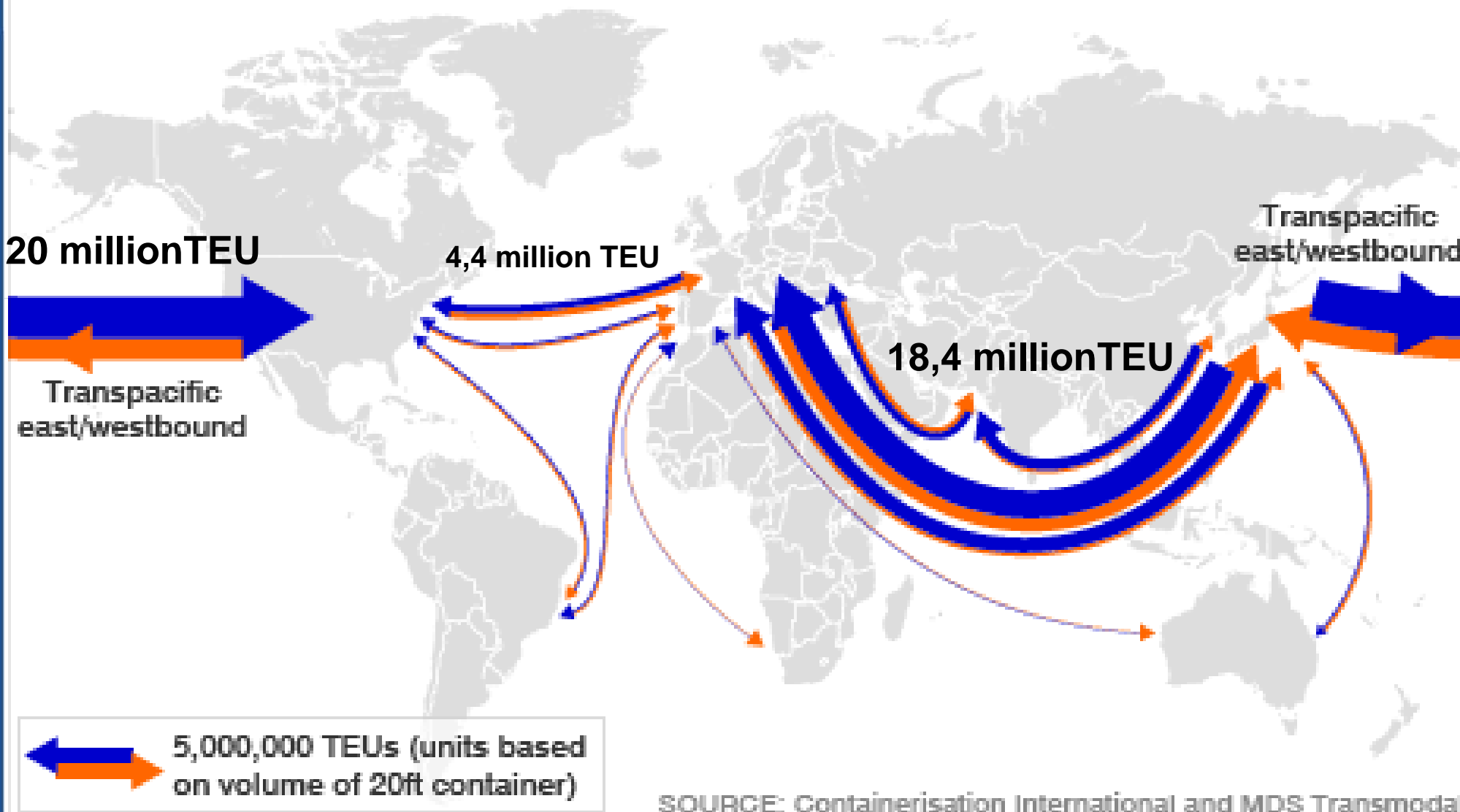
(EU Parliament 2014)



A gradual decentralisation of entry and exit ports until 2041 in terms of container traffic: **savings between €8.3 billion and €43.7 billion during the next thirty years**

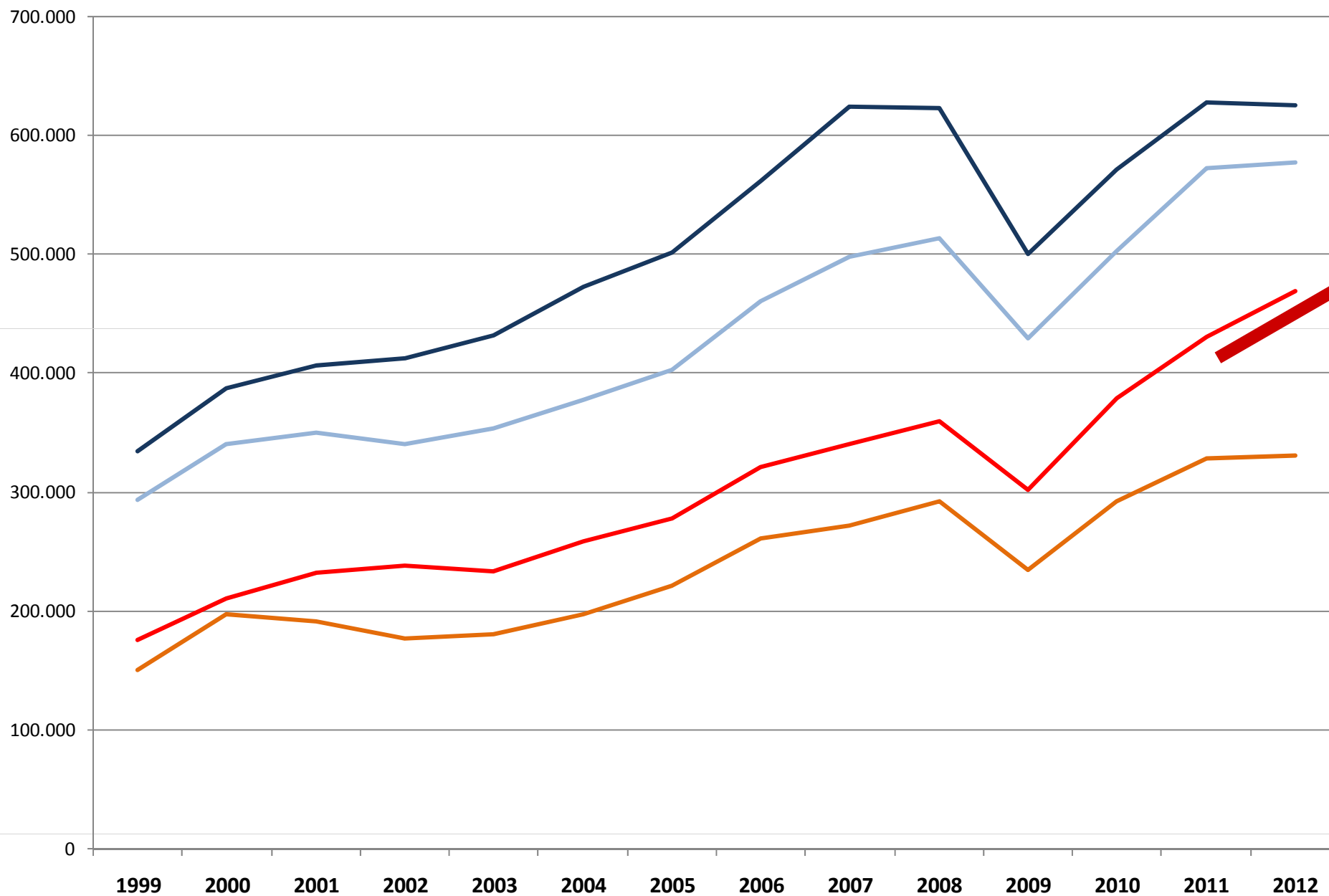
(EU Parliament 2014)

MAIN CONTAINER SHIPPING ROUTES 2008



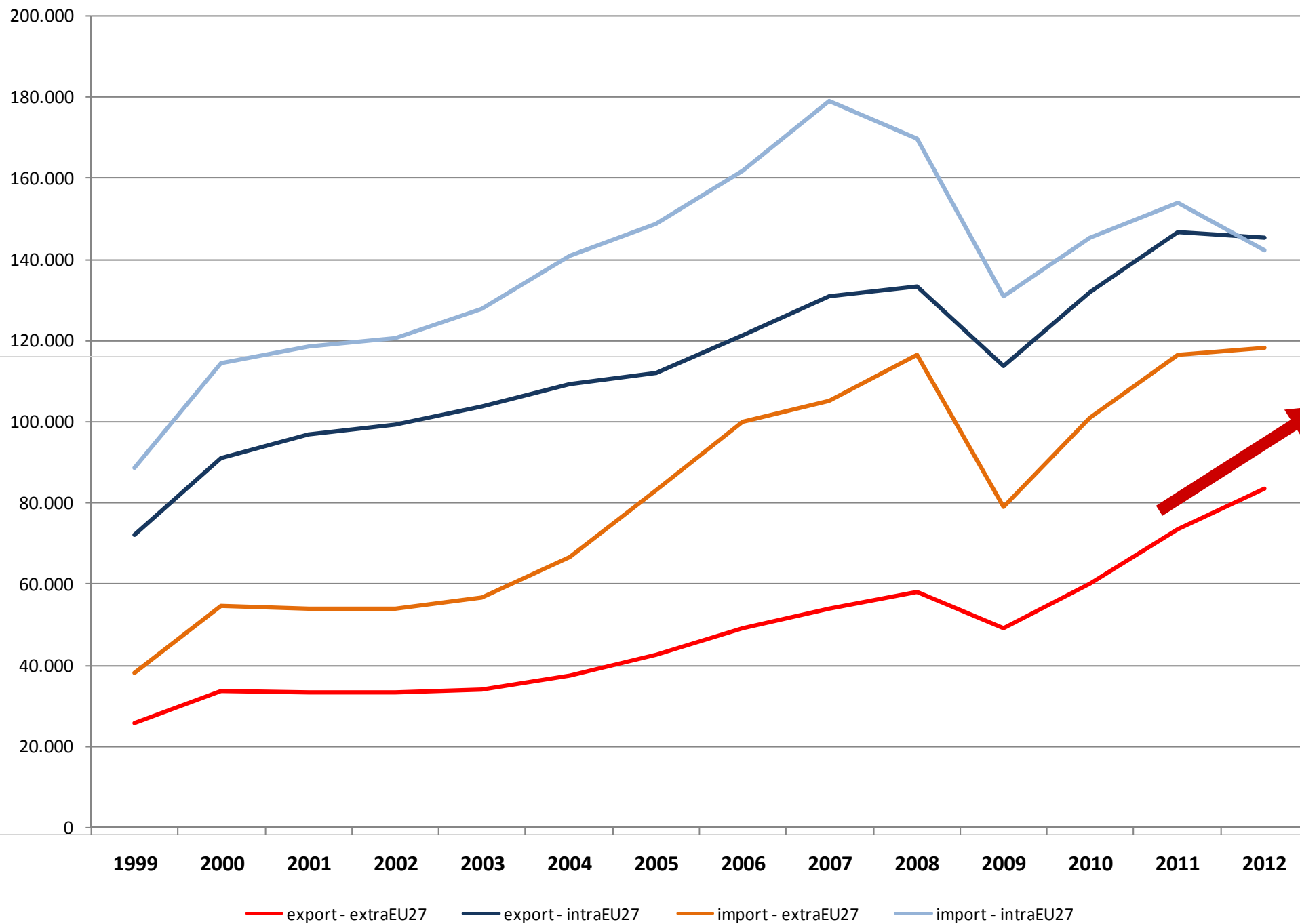
Exports to the rest of the world from Germany (M€)

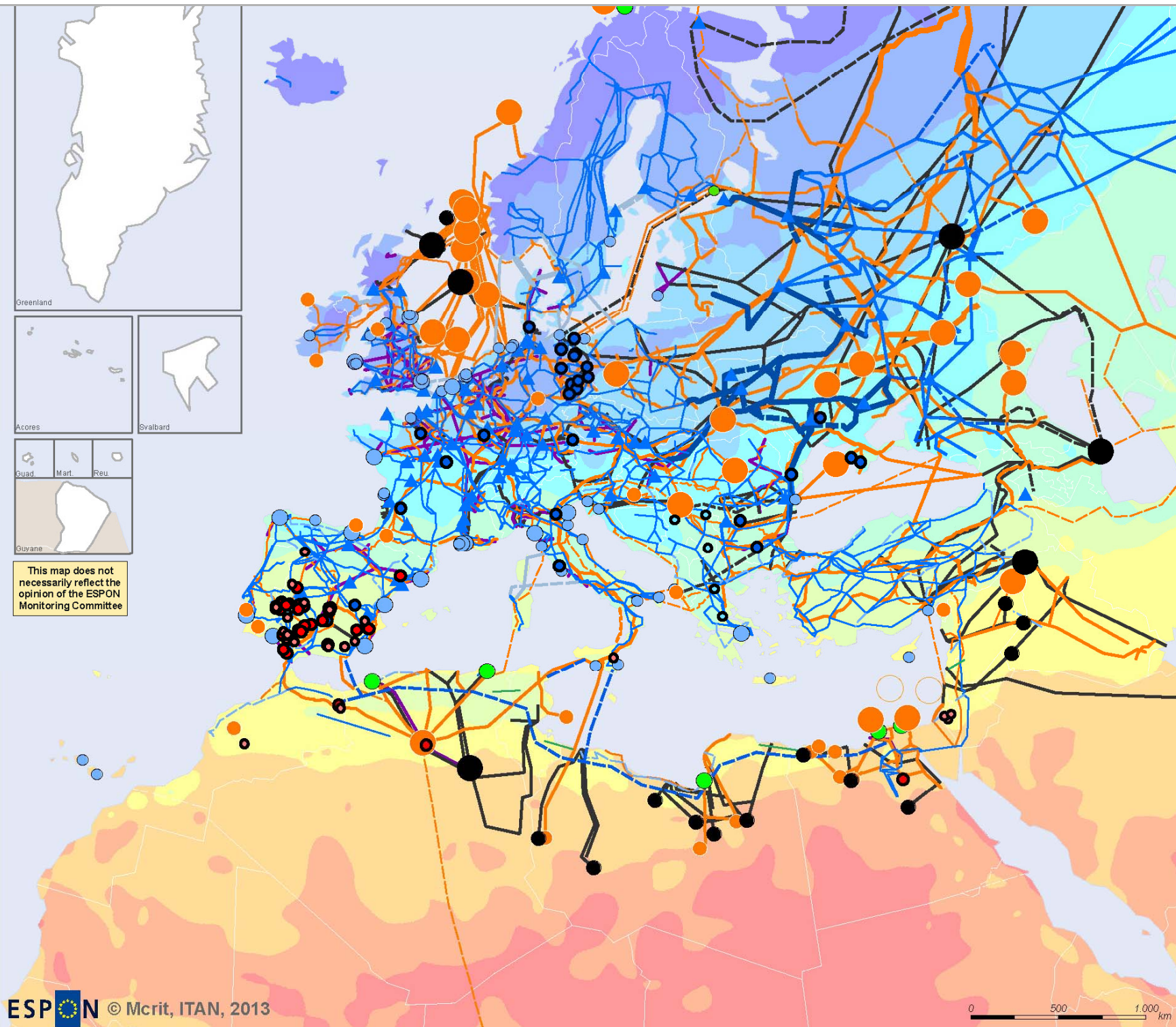
EUROSTAT

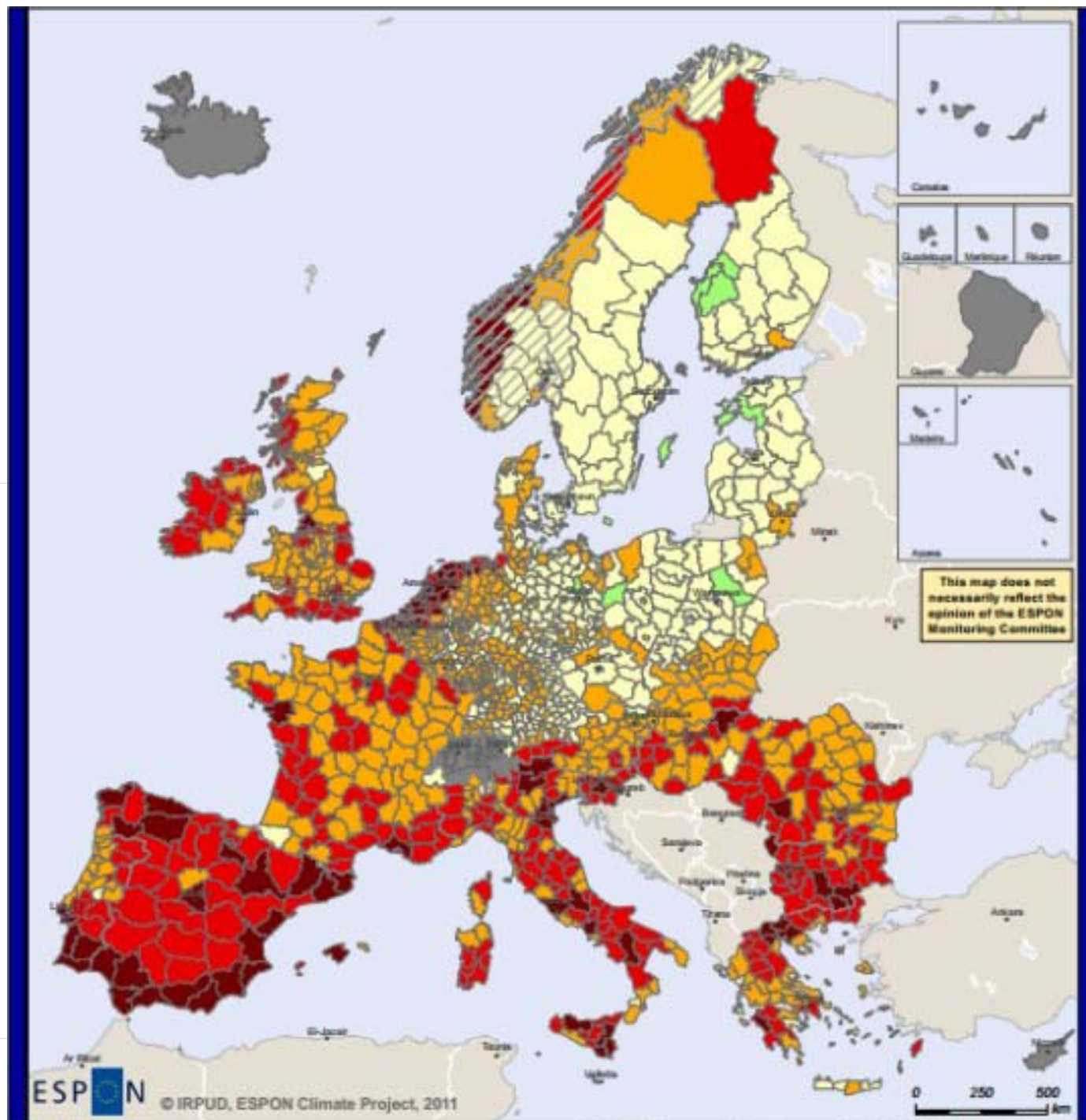


— export - extraEU27 — export - intraEU27 — import - extraEU27 — import - intraEU27

Exports to the rest of the world from Spain (M€)







- highest negative impact (0.5 - 1.0)
- medium negative impact (0.3 - <0.5)
- low negative impact (0.1 - <0.3)
- no/marginal impact (>-0.1 - <0.1)
- low positive impact (-0.1 - >-0.27)
- no data*
- reduced data*

Baseline macro-trends for Europe towards 2030

- Moderate average growth with high risks of increasing national and regional economic disparities
- Risk of increasing social disparities
- Stable population, universal ageing and increasing internal and external migration
- Diminishing economic global share of European countries
- Trade with the rest of the world higher than trade in the Single/Internal market.
- Diverging trade patterns across European countries and firms.
- Possible rebalancing of European hubs and gateways
- Interdependency with Eastern & South Mediterranean regions
- Increasing stress on resources: land and ecosystems, energy.



Scenarios > Vision > Pathways

Baseline 2030

Exploratory Scenarios 2050

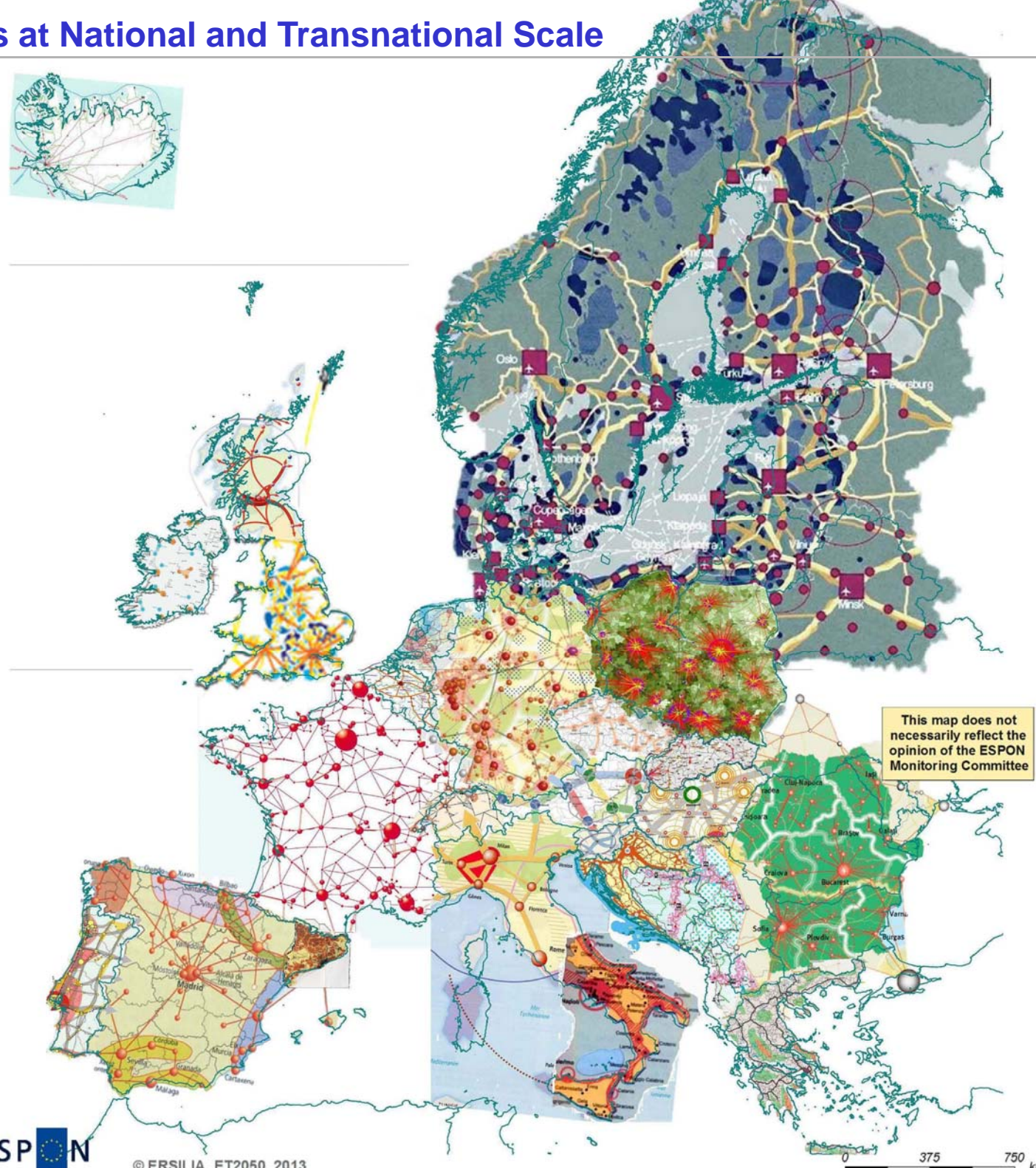
ESPON Conference, Brussels, 29th April 2014



Scenarios & Visions for the European Territory: from 1968 to 2014

- European Outline Convention (1968)
- European Spatial Planning Charter (1983)
- Europe 2000: Outlook for the development of the Community's territory (1991)
- Europe 2000+, Cooperation for European territorial development (1994)
- ESDP: European Spatial Development Prospective (1999)
- SPSP: Study Program on Spatial Planning (2000)
- ESPON: European Observation Network for Territorial Development (3.2, 2006)
- Green Paper on Territorial Cohesion (2008)
- Territorial Agenda 2020 (2011)

Existing Territorial Visions at National and Transnational Scale



Europe towards 2050: Territorial Scenarios

- **Promotion and networking of European Metropolises**

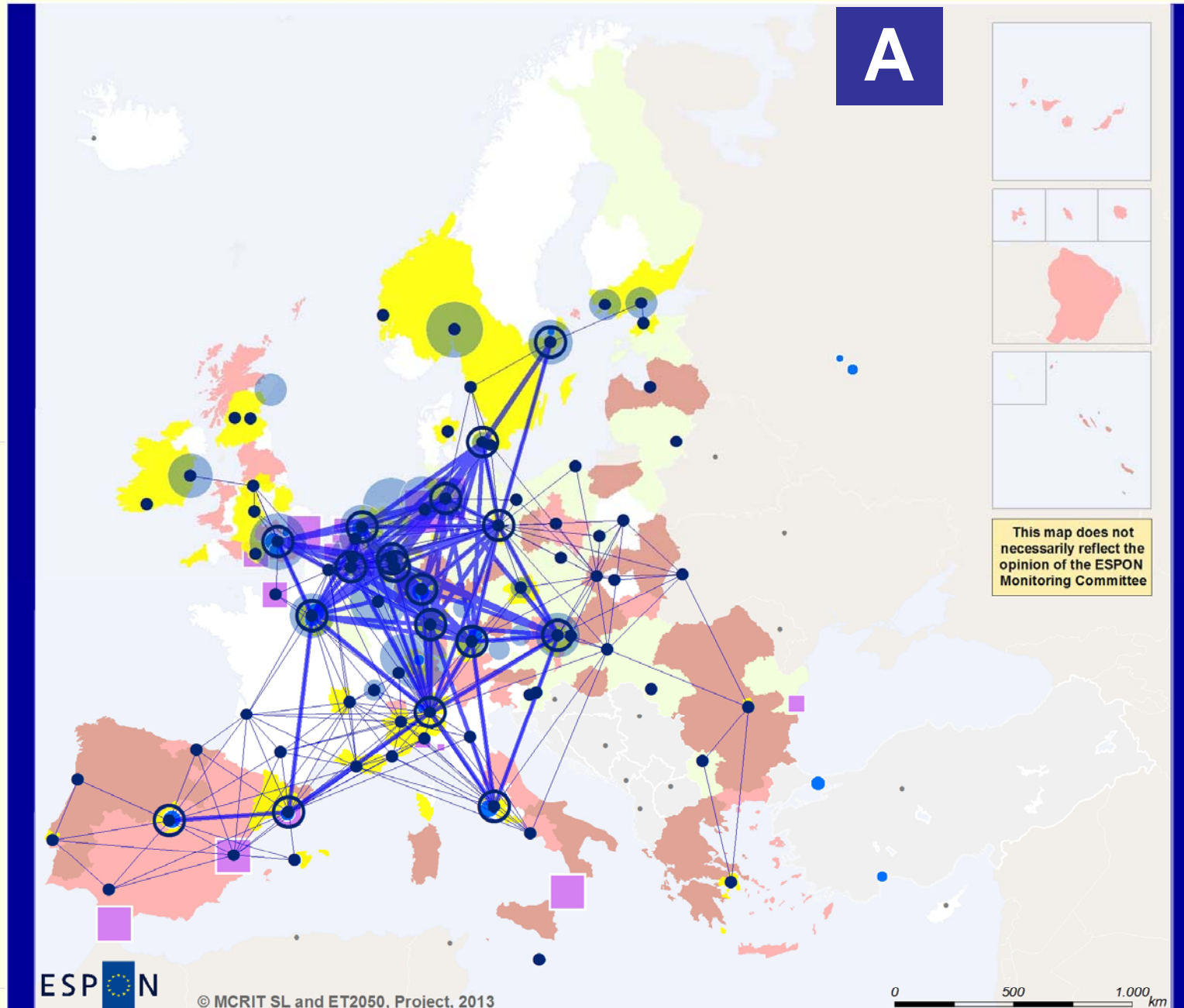
Development of capital and global metropolis, as well as existing global gateways. Based on “Europe 2020” strategy.

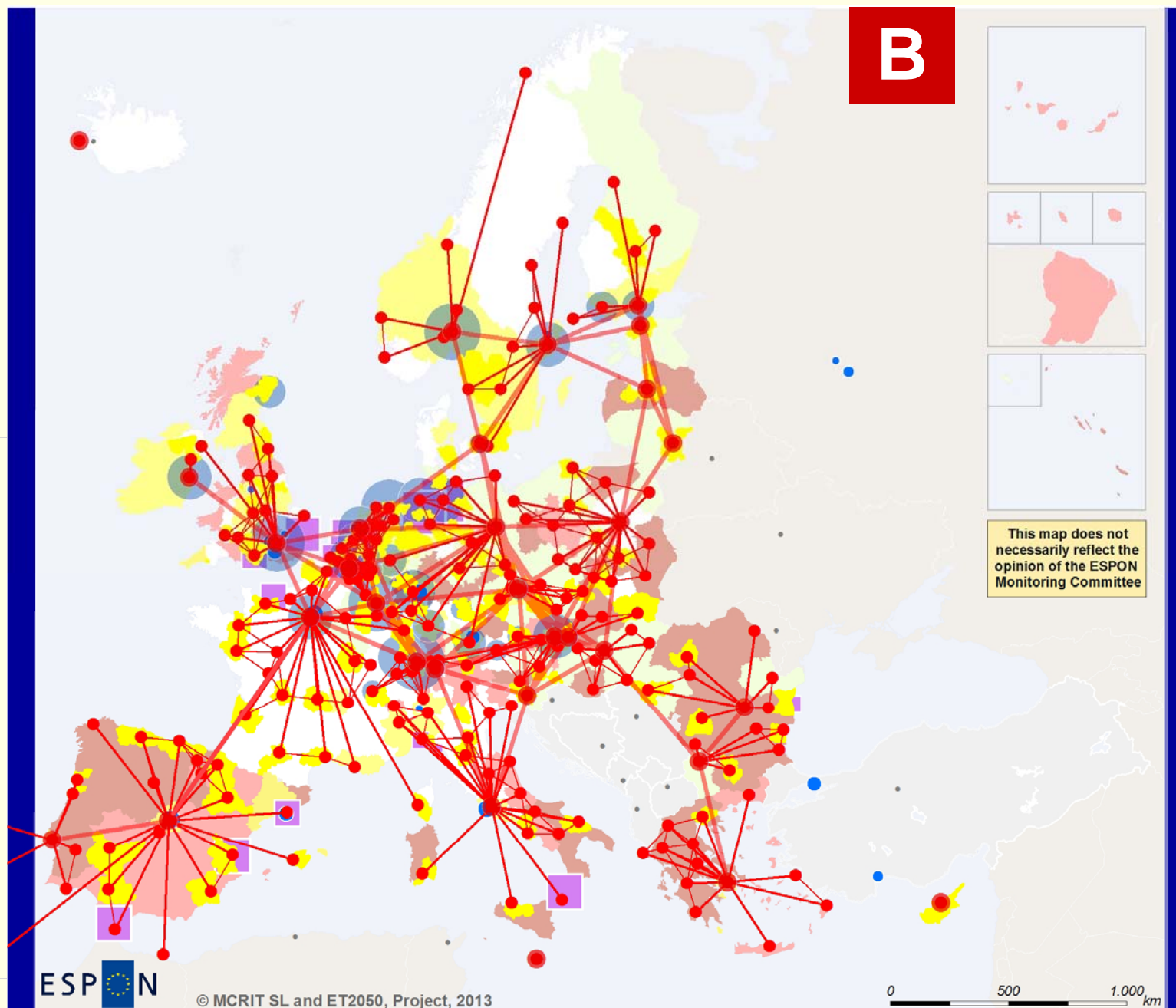
- **Promotion and networking of Second Tier Cities**

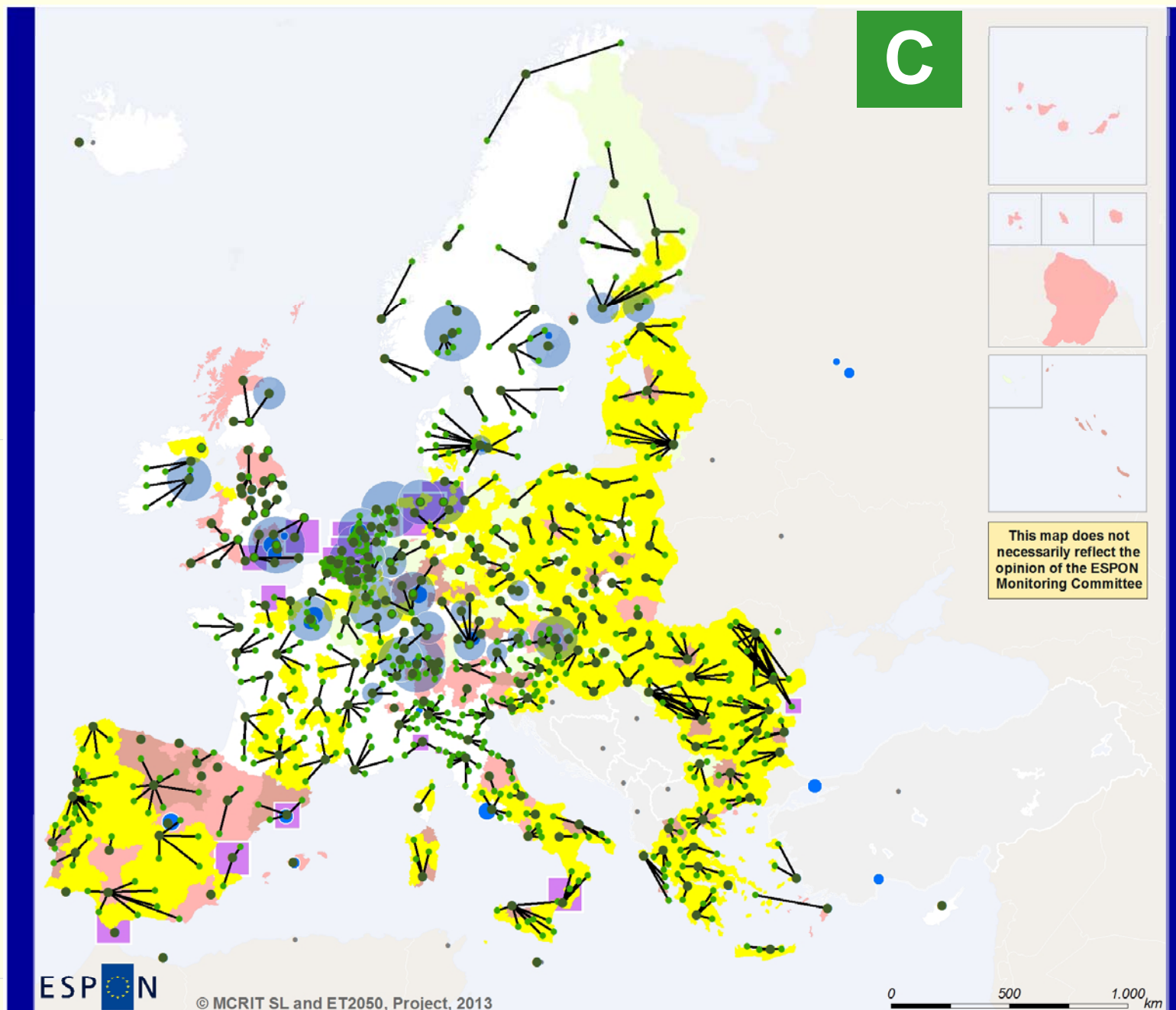
Development of networks of Secondary Tier Cities. More inspired by ESDP strategies.

- **Promotion of cities in less developed regions**

Responds to the challenges of energy scarcity and climate change expressed in the Territorial Agenda 2020.



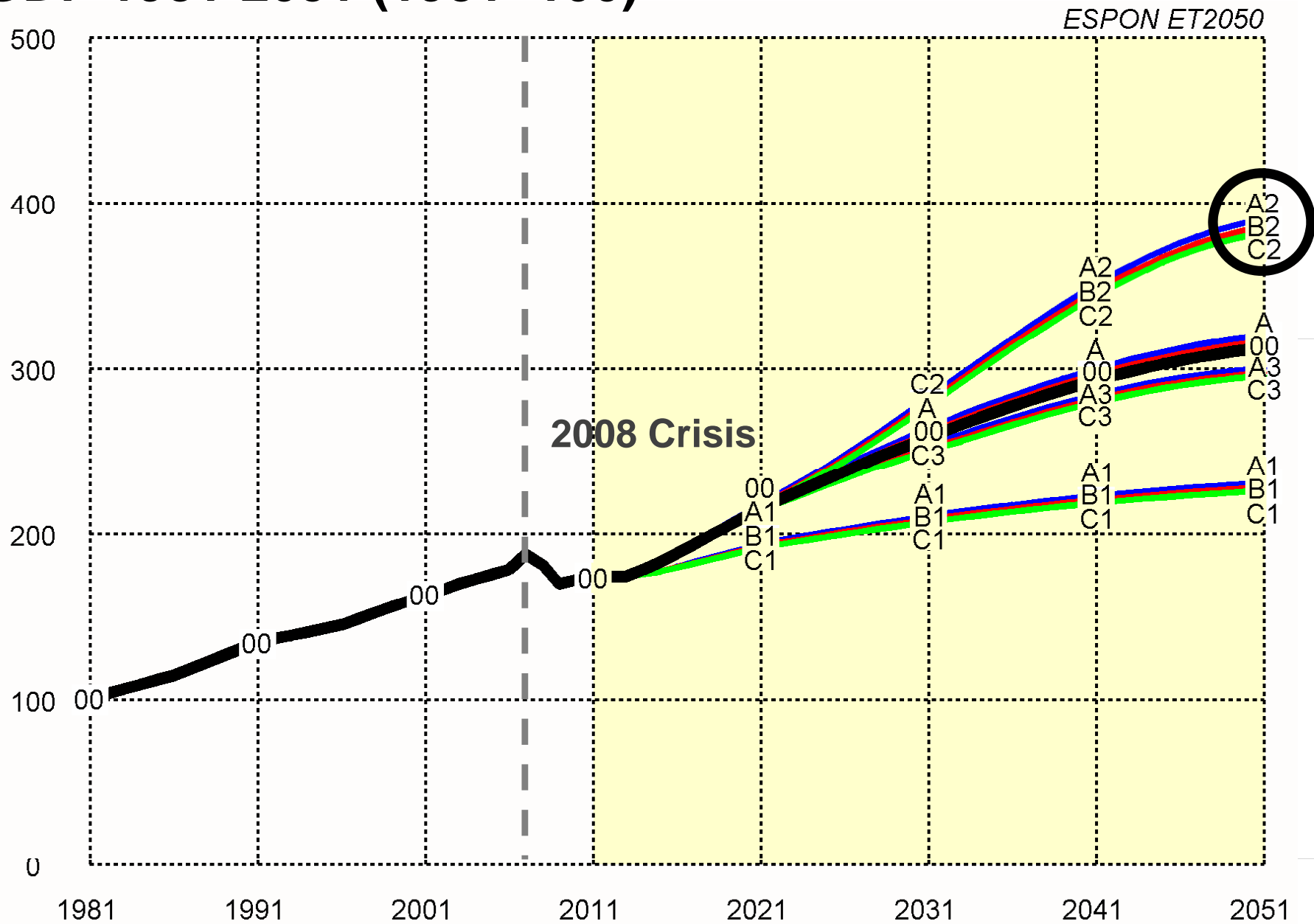




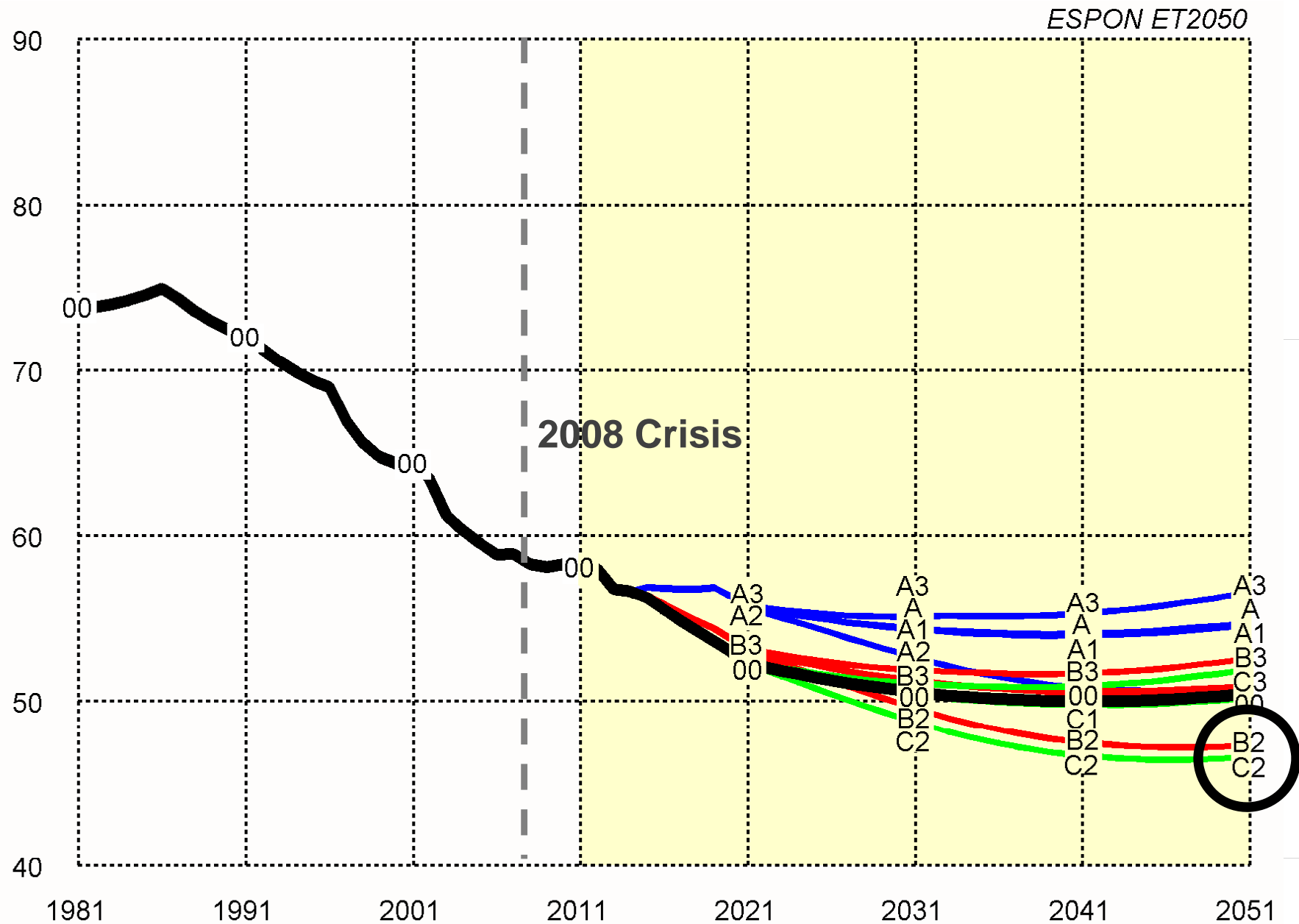
Exploratory Scenarios towards 2050

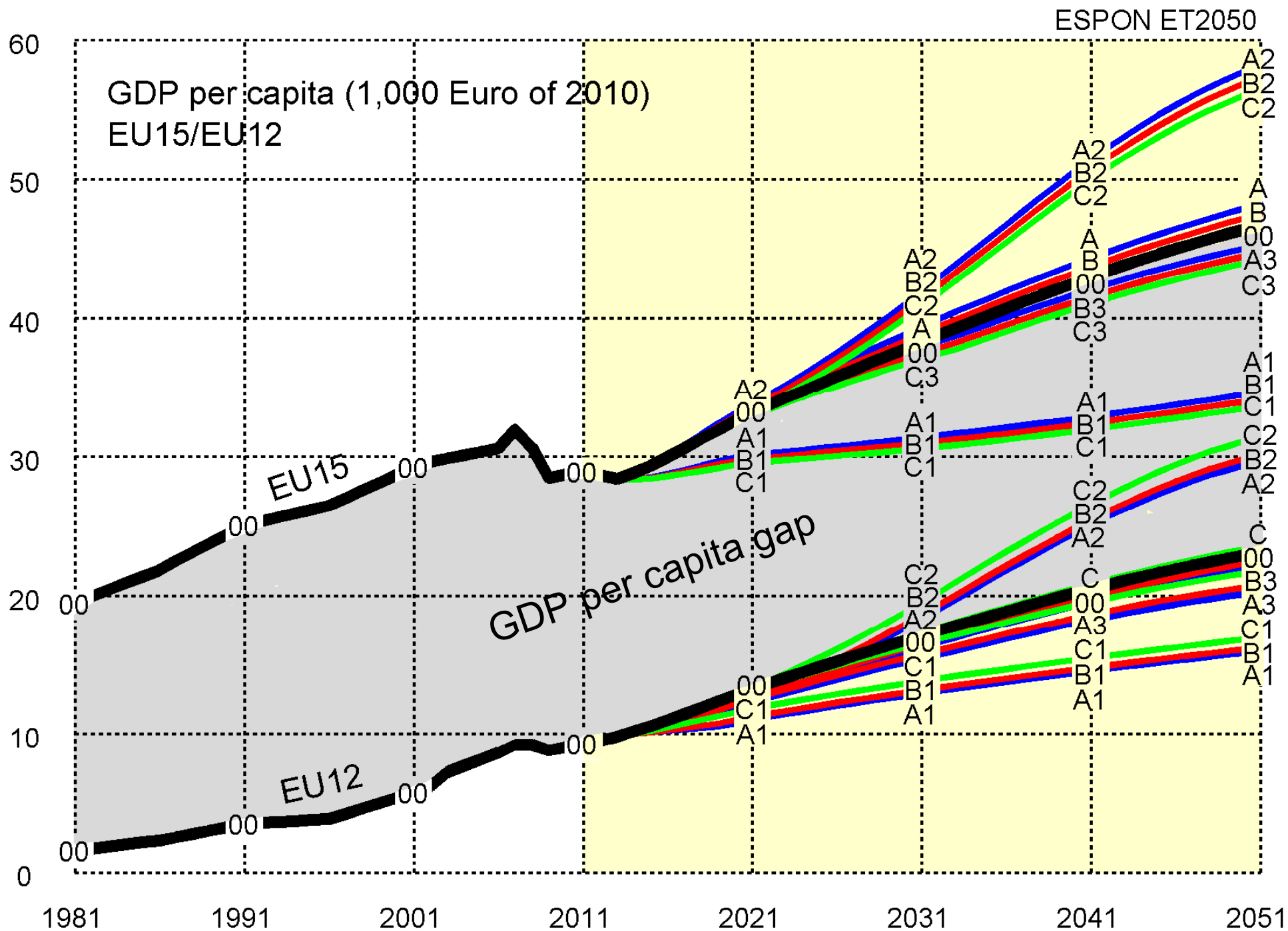
Spatial Scenarios	Extreme Framework Variations			
	Scenarios	1 Economic decline	2 Technologic progress	3 Energy/ Climate Costs
Promotion of Metropolis	A	A1	A2	A3
Promotion of Second Tier Cities	B	B1	B2	B3
Promotion of cities in less developed Regions	C	C1	C2	C3

GDP 1981-2051 (1981=100)



Cohesion: Reduction of disparities in CoV of GDP/capita 1981-2051



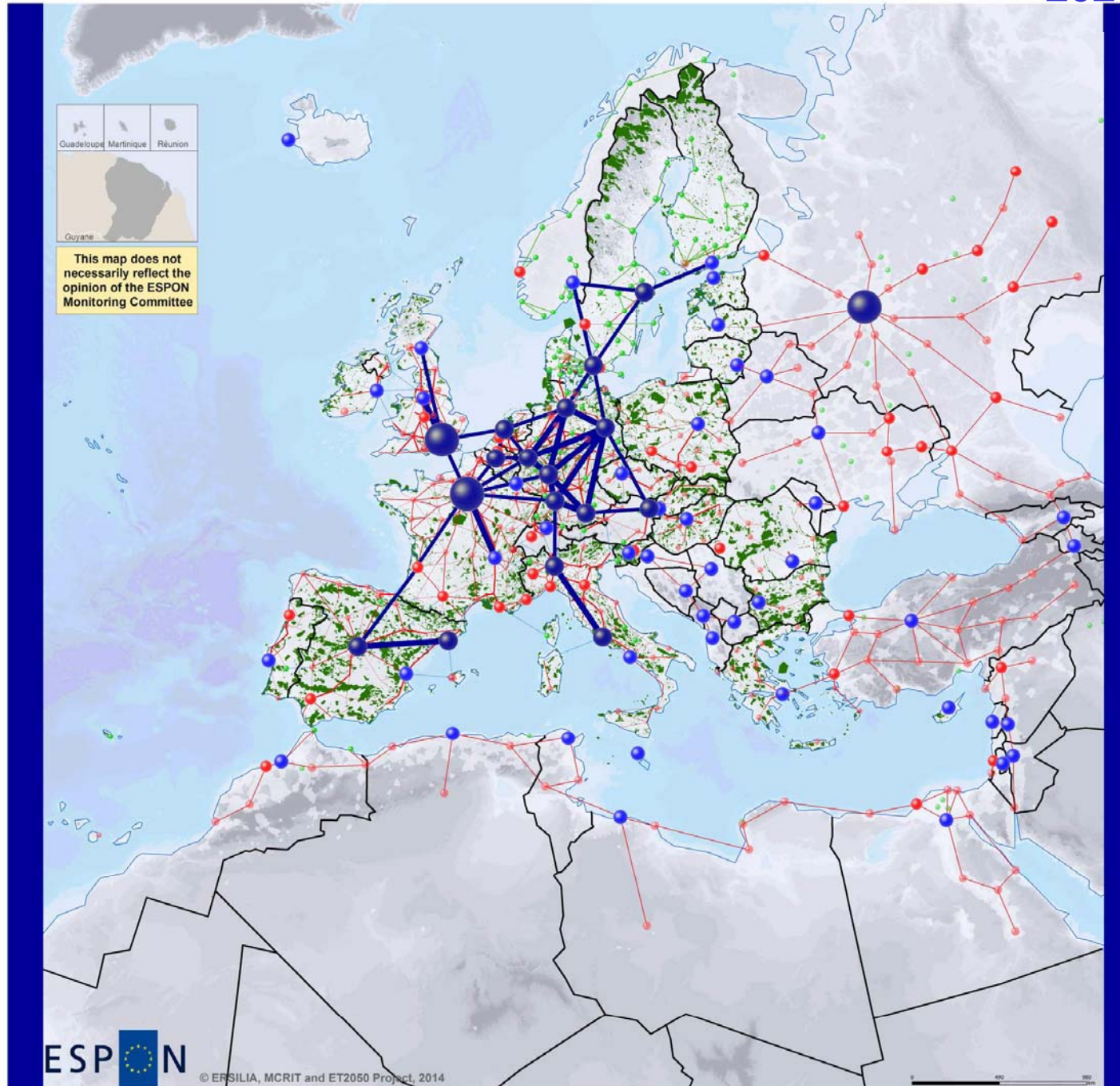


Europe towards 2030 and 2050

- Scenario: + **Polycentricity: A (2020) > B (2030) > C (2030)**
- Framework: **Technologic progress (Variation type 2)**
 - Increasing productivity
 - Smart Cities and Territories
 - Further decentralised, highly interconnected networks
 - Successful transition towards a low carbon economy, with energy costs maintained
 - Efficient land and resource management systems

TERRITORIAL VISION 2020

2020



ESP  N

© ERSILIA, MCRIT and ET2050 Project, 2014



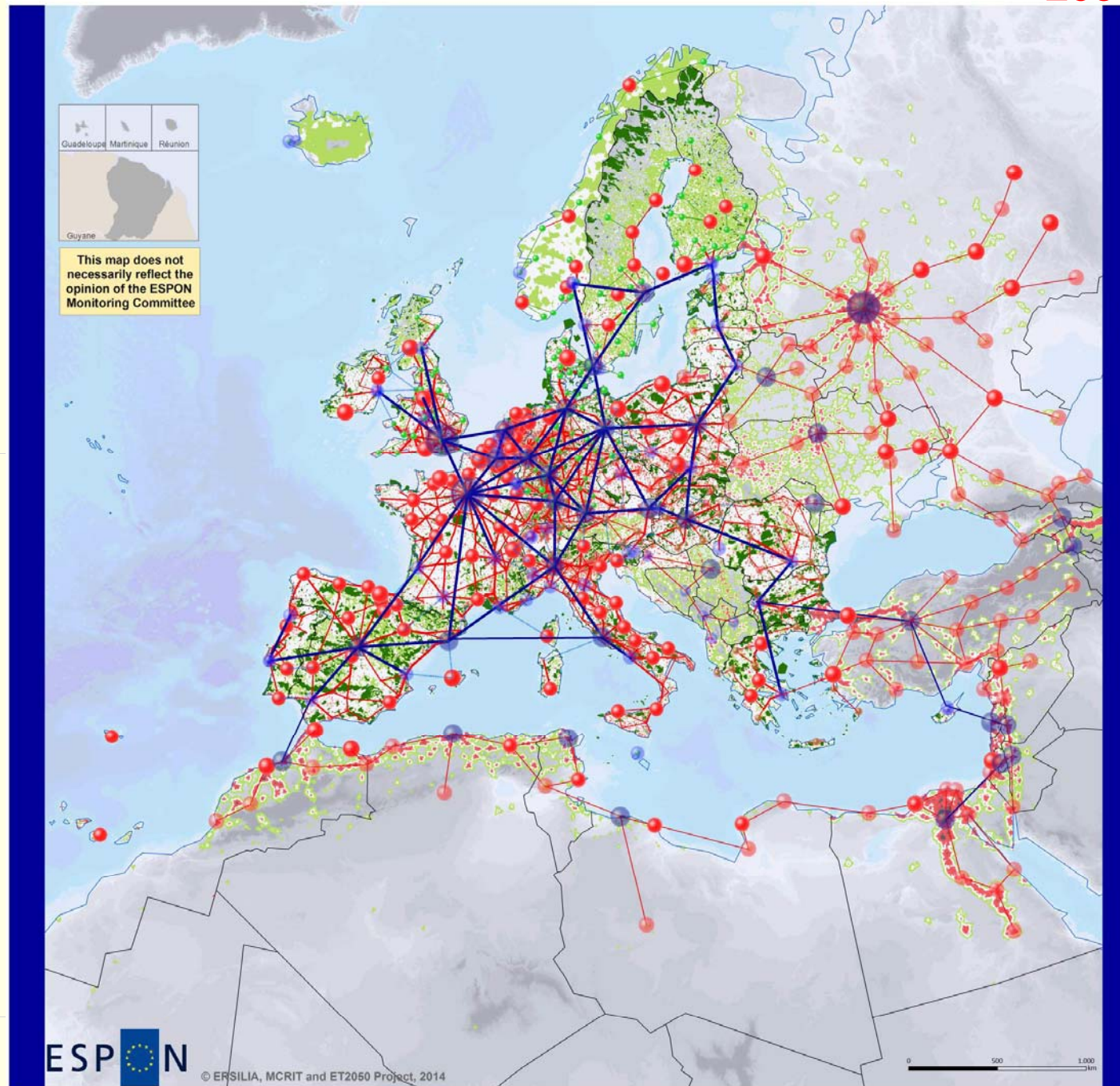
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 3
Source: MCRIT, 2013
Origin of data: ET2050, 2013

© EuroGeographics Association for administrative boundaries

TERRITORIAL VISION 2030

2030



ESPON

© ERSILIA, MCRIT and ET2050 Project, 2014



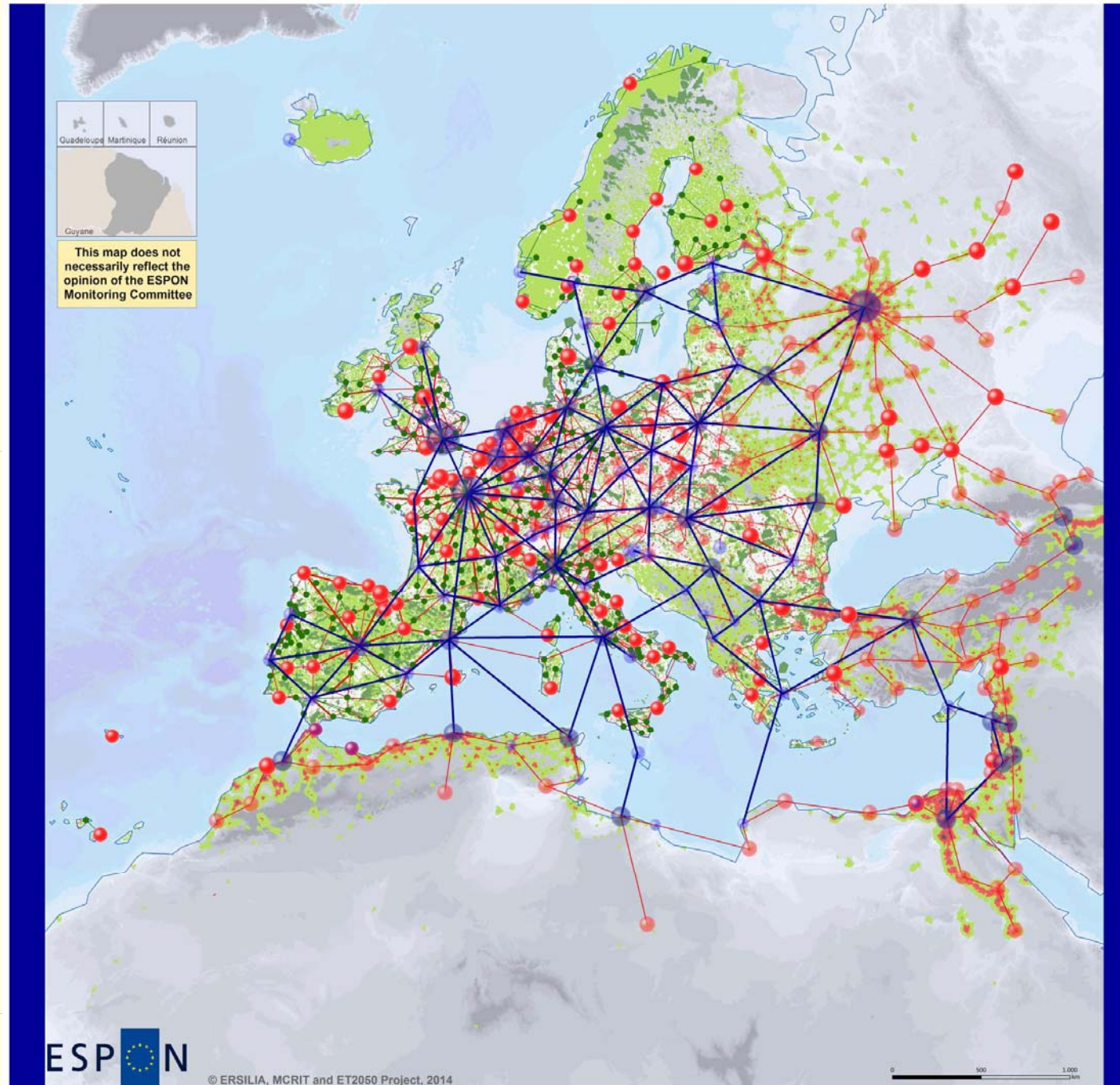
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 3
Source: MCRIT, 2013
Origin of data: ET2050, 2013

© EuroGeographics Association for administrative boundaries

TERRITORIAL VISION 2050

2050



ESP  N

© ERSILIA, MCRIT and ET2050 Project, 2014



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 3
Source: MCRIT, 2013
Origin of data: ET2050, 2013

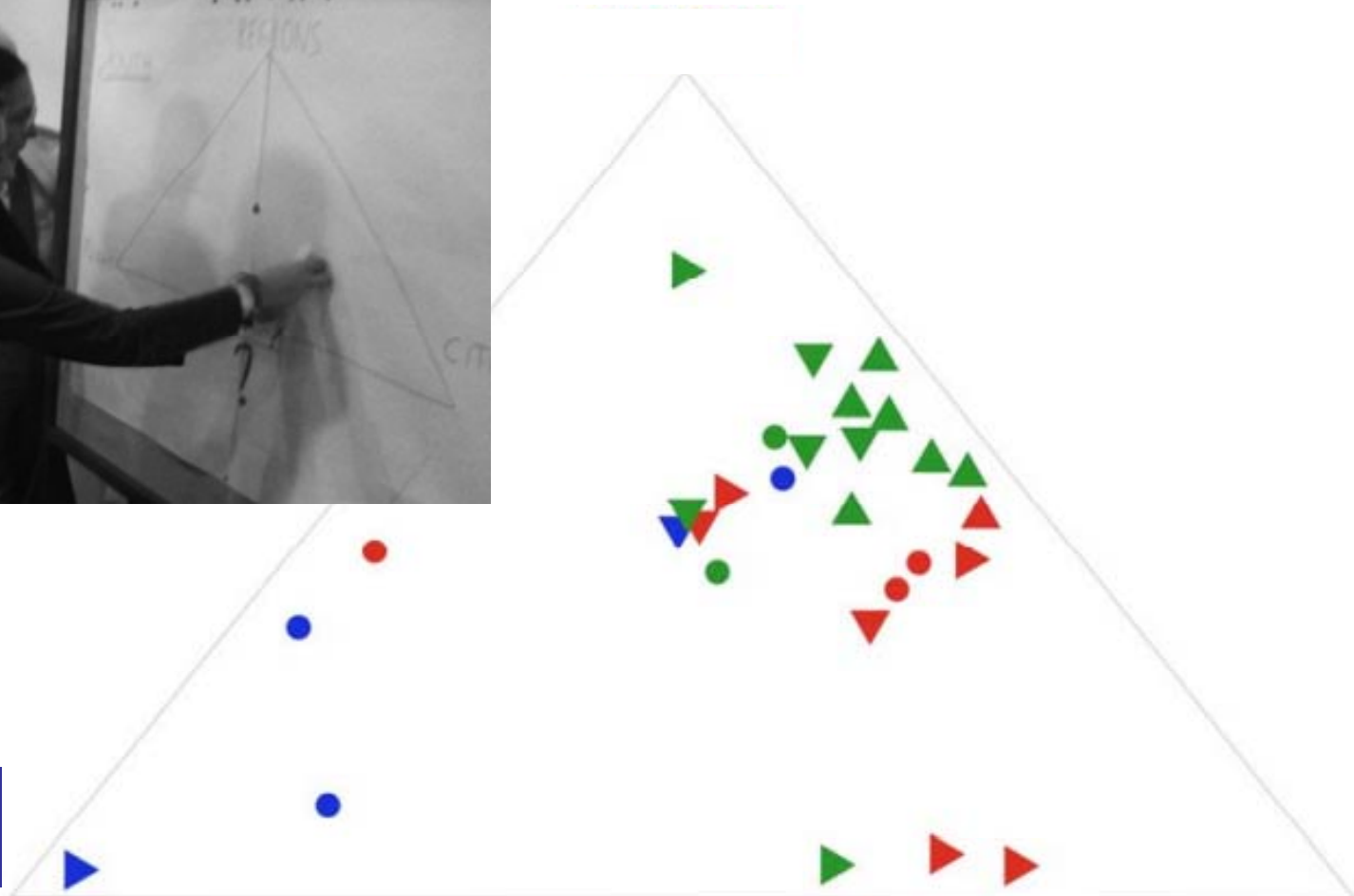
© EuroGeographics Association for administrative boundaries



C

A

B



- ▶ Eastern Europe
- ◀ Southern Europe
- ▲ Northern Europe
- Central Europe



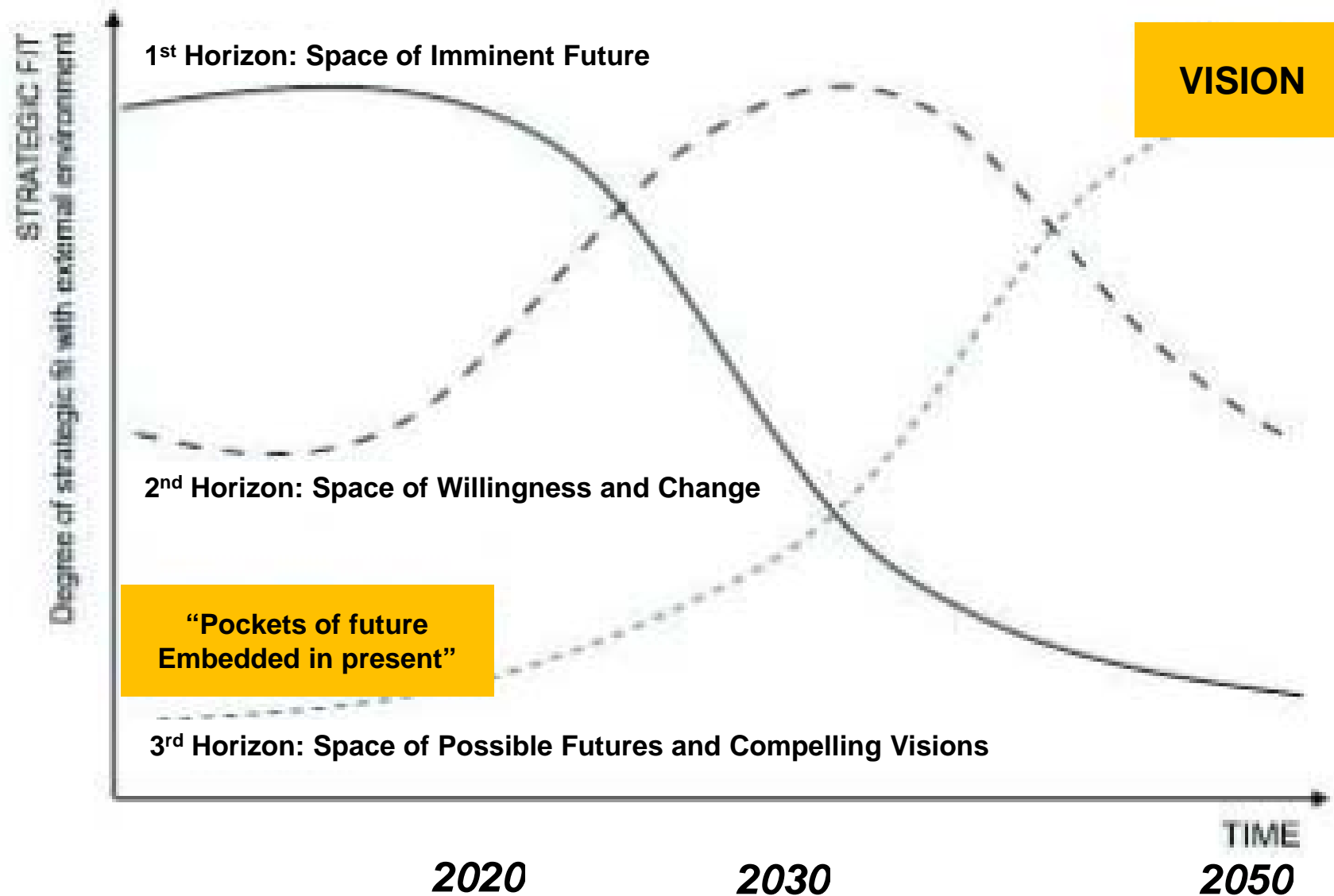
Scenarios > **Vision** > Pathways

Making the European Territory Open and Polycentric

ESPON Conference, Brussels, 29th April 2014



“Three-Horizons Model”



Lasting values and paradigms

- Treaty of Rome (1956):

“An **open** Community of **equals** with **common strong institutions**”

- Treaty of Lisbon (2007):

“The Union shall promote **economic, social and territorial cohesion, and solidarity among Member States**. It shall respect shall ensure that Europe's cultural heritage is safeguarded and enhanced”.

- Europe 2020 (2010):

“In a changing world, we want the EU to become a **smart, sustainable and inclusive economy**”

Lasting values and paradigms (the “European model”)

- **Deep Governance and good government:** predominance of the rule of law, compliance with the Charter of Fundamental Rights, and the rights of minorities. Transparent and accountable institutions, and public service oriented to empower citizens
- **Sustainable development, well being and quality of life:** universally accessible human development, encompassing three dimensions: economic, environmental
- **Territorial efficiency and cohesion:** overall harmonious development reducing disparities between regions.
- **Internal solidarity:** space of stability in terms of finances, migration, energy, adaptation to Climate Change.
- **External solidarity:** with Neighboring countries and the world. promotion of the values of the “European model” –democracy, open and inclusive societies and

European Roadmaps and Visions towards 2050

- Roadmap for moving to a competitive low carbon economy in 2050
- Roadmap to Resource Efficient Europe 2050
- Roadmap to a Single European Transport Area 2050
- Energy Roadmap 2050
- Roadmap for maritime spatial planning in the EU
- “Global Europe 2050” (Polycentric Europe, Sustainable and Smart Cities)

Vision: ***Making Europe Open and Polycentric***

The efficiency and quality of the European territory lies in:

- Networking cities of all sizes, from local to global level
- Empowering people and local activities to valorise their own assets at European and global scale.

First Policy-aim: *Openness*

The long-term sustained development of the European territory requires:

- Removing internal borders
- Reinforcing co-development strategies with the Neighbourhood
- Further integrating European markets with the rest of the world.

Second Policy-aim: *Polycentricity*

The long-term sustained development of the European territory requires:

- Promoting endogenous sustainable development
- Diminishing regional disparities.
- Renewing and networking cities at both regional and global scale

Main Territorial Strategies:

- **Connecting Europe Globally**
 - **Smart Regeneration of European Cities**
 - **Enhancing Natural and Cultural assets**
 - **Making Europe regionally balanced**
-
-

Territorial Strategy: **Connecting Europe Globally**

- Opening up European markets and promoting global sustainable development
- Enhancing the efficiency of European network industries
- Decentralising European transport global gateways
- Enhancing cooperation with Neighbouring regions
- Reinforcing the global centrality of European Metropolises

Territorial Strategy: **Smart Regeneration of European Cities**

- Promoting Second Tier Cities as engines of growth
- Renewal of European cities
- Developing more compact settlement structures

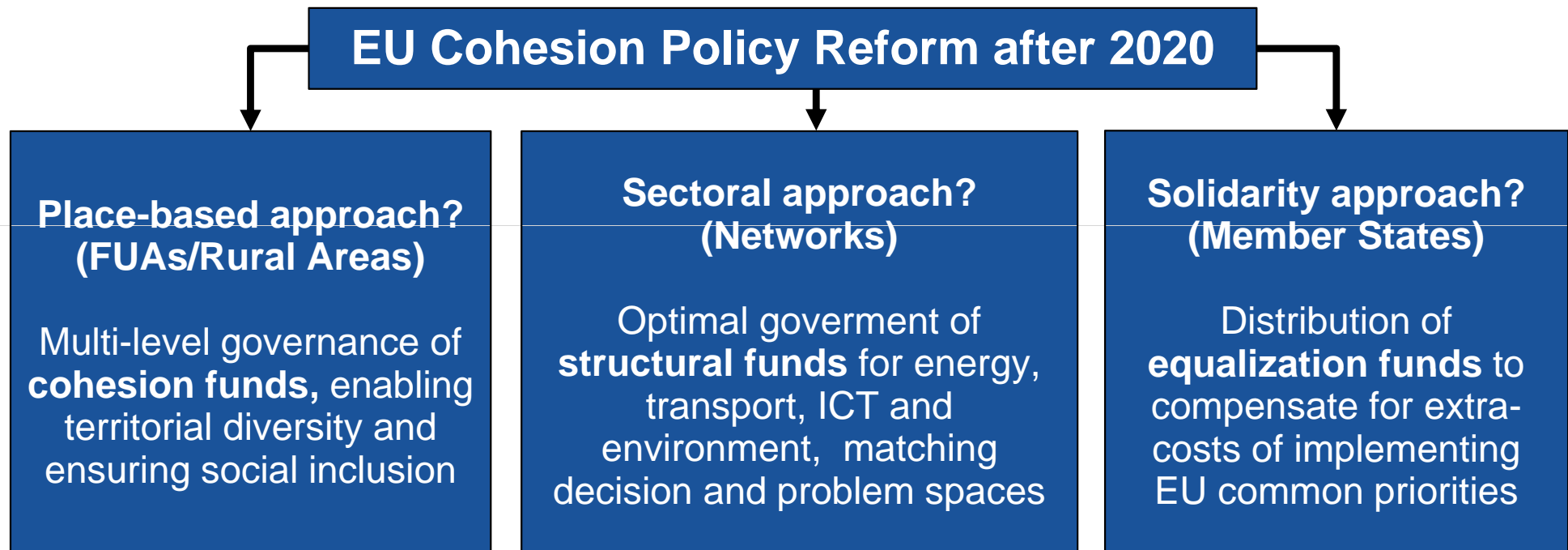
Territorial Strategy: **Enhancing Natural and Cultural assets**

- Limiting land-take, specially on high pressure vulnerable areas
- Valorisation of cultural landscapes
- Mitigation and adaptation of territories to Climate Change

Territorial Strategy: **Making Europe regionally balanced**

- Unleashing the regional diversity of endogenous development
- Sufficient access to networks to open up all cities and regions
- Provision of universal level of services of general interest
- Planning integration of functional (cross-border) urban regions

A New Cohesion Policy Approach is needed





Scenarios > Vision > **Pathways**

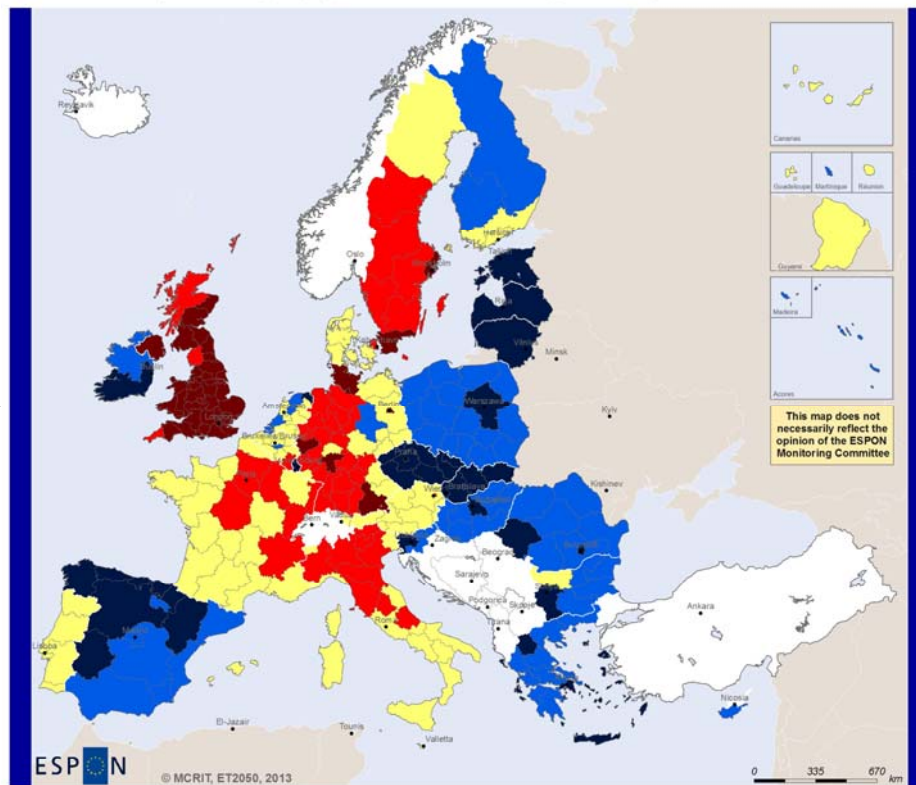
Towards a European Spatial Development Policy

ESPON Conference, Brussels, 29th April 2014



Relative change in GDP per capita from 2000-2010

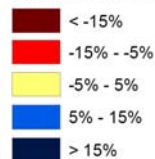
Measured in percentage (%) to the EU27 average GDP growth



ESPON
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

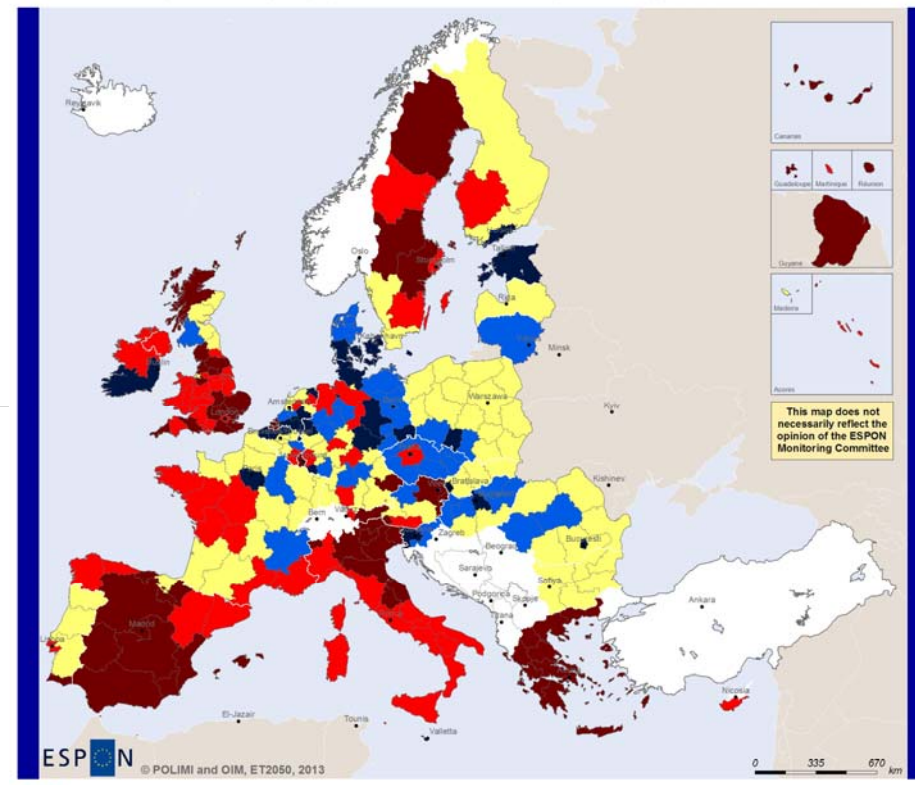
Regional level: NUTS2
Source: MCRIT, 2013
Origin of data: ESPON DATABASE
© EuroGeographics Association for administrative boundaries

Relative change in GDP per capita growth in relation to EU27 average



Relative change in GDP per capita from 2010-2030 (Baseline)

Measured in percentage (%) to the EU27 average GDP growth

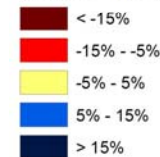


ESPON
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS2
Source: MCRIT, 2013
Origin of data: ESPON DATABASE
© EuroGeographics Association for administrative boundaries

Relative change in GDP per capita growth in relation to EU27 average

Results obtained by MASST (Economy) and MULTIPOLLES (Demography) forecast models



Main Territorial Strategies:

- **Connecting Europe Globally**
 - **Smart Regeneration of European Cities**
 - **Enhancing Natural and Cultural assets**
 - **Making Europe regionally balanced**
-

Pathways towards **Connecting Europe Globally**:

- The Single Market for network industries completed
- International agreements to open up markets
- Environmental costs in transport internalised
- Trans-European Networks extended to Neighbouring countries
- Intelligent electric grid covering Europe and neighbouring countries

Pathways towards **Smart Regeneration of European Cities** :

- Implementation of intelligent urban management systems
- Enhancement of public spaces and social inclusive neighborhoods
- Avoiding dispersed and discontinuous urbanisation
- Deconcentration of public investments from capitals to networks of cities
- Networking Second Tier Cities and Capitals

Pathways to enhance Natural and Cultural assets :

- Integrated rural development promoting complementary agricultural activities
- Productive agricultural soils and high quality nature protected from urban development
- Landscape management
- Public acquisition of land, and/or other zoning or planning regulatory measures to protect strategic land from urbanisation
- Development of a green infrastructure throughout Europe, stimulating biodiversity and ecosystem services
- Mitigation and adaptation to Climate Change included in urban and regional plans

Pathways to make **Europe regionally balanced**

- Cost-effective infrastructure investments linked to territorial development plans
- Innovative management to make financially sustainable universal access to services of general interest
- Territorial strategies promoting synergies between endogenous activities and foreign investments
- Cooperation mechanisms for territorial integration

EU Short-term reforms: Cohesion and Agricultural (Pillar II) funds (1)

Dealing with the new challenges ahead: gradual opening of European markets to global competition

- Sensitivity to macro-economic cycles
- Stronger place-based approach: integrated urban and regional development plans
- Empowering local and regional government and business-friendly environments
- Promotion of transnational cross-border zones
- Co-development with Neighbouring countries

EU Mid-term: Framework coordination of sectorial policies (2)

- Impose a set of territorial conditions on Community aid allocated to sectorial policies, incorporating territorial considerations into every stage of planning
- Better coordinating sectorial policies with European funds with explicit territorial dimension (Structural and Cohesion funds, Pillar II CAP)
- Managing policy interventions through functional territories (e.g. transport corridors, river and coastal areas, mountains, islands...)

EU Long-term: Establishment of a EU Spatial Development Policy (3)

- Shared strategic planning of the European territory
 - Infrastructure and regulatory policies in transport (e.g. TENs)
 - Energy (e.g. Electric Grid)
 - Environmentally protected areas (e.g. Green infrastructure).
- Coordinated transnational planning areas:
 - Baltic
 - Danube
 - Adriatic - Ionian
 -
- New European multi-level Governance Framework dealing with the mismatch between administrative borders and territorial dynamics

**“Too seek Europe, is to make it!
Europe exists through its search for the infinit
-and this is what I call adventure”**

Zygmunt Bauman, “An Adventure called Europe”



Further information:

www.espon.eu

www.et2050.eu (working documents)

