ESPON
Conference on European Territorial Research
13-14 October 2005

European typologies of urban systems

Erik Gløersen

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The concept of polycentricity
Normative definition

” Polycentricity is about promoting ***balanced and multiscalar types of urban networks***

that are ***most beneficial from a social and economic point of view***,

both for the core areas and for the peripheries.”

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The concept of polycentricity
Analytical definition

A spatial organisation of cities characterised by

- a *functional division of labour*,
- *economic and institutional integration*,
- and *political cooperation*.

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Core-periphery vs. polycentricity?

Core areas

- concentration of people and activity
- higher living standards
- relatively longer history of economic prosperity compared to neighbouring areas;
- concentration of local innovation *milieux*, and a general attractiveness for entrepreneurs;
- higher accessibility.

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Core-periphery vs. polycentricity?

Core areas

- *'places where things happen'*

  and

- *'places where one gives orders'*

How can "peripheries" be encouraged to act as "cores" ?

➔ *Joint development strategies*

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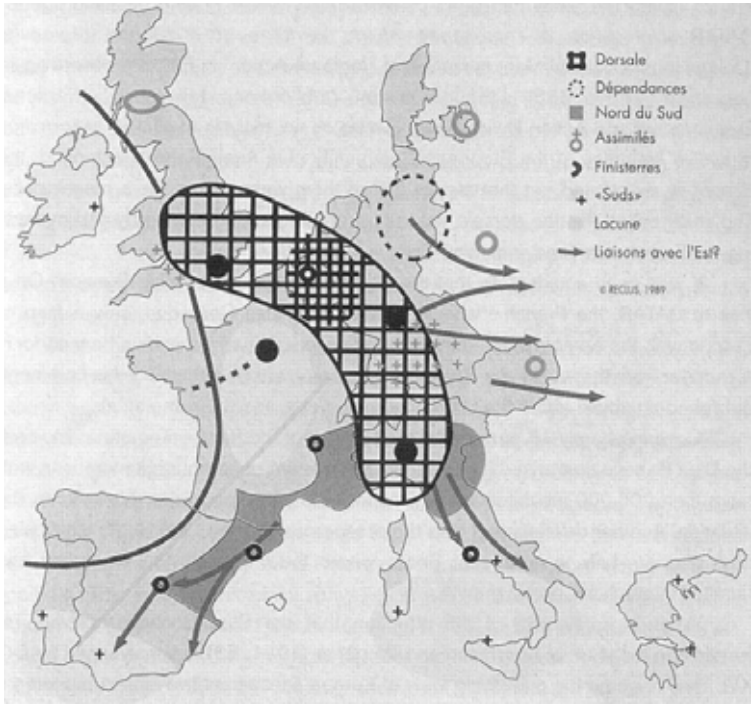
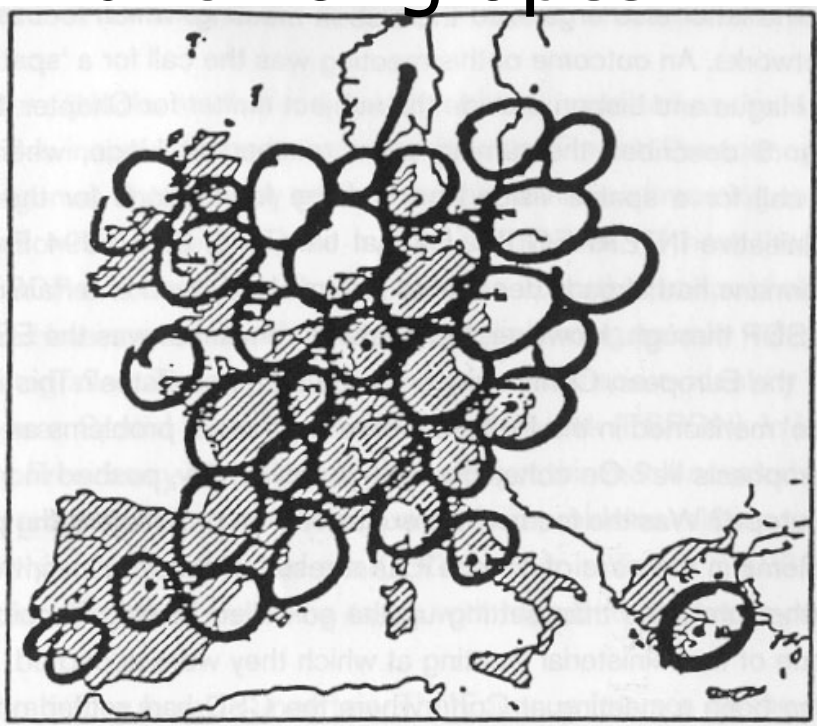
The concept of polycentricity

"Blue Banana"



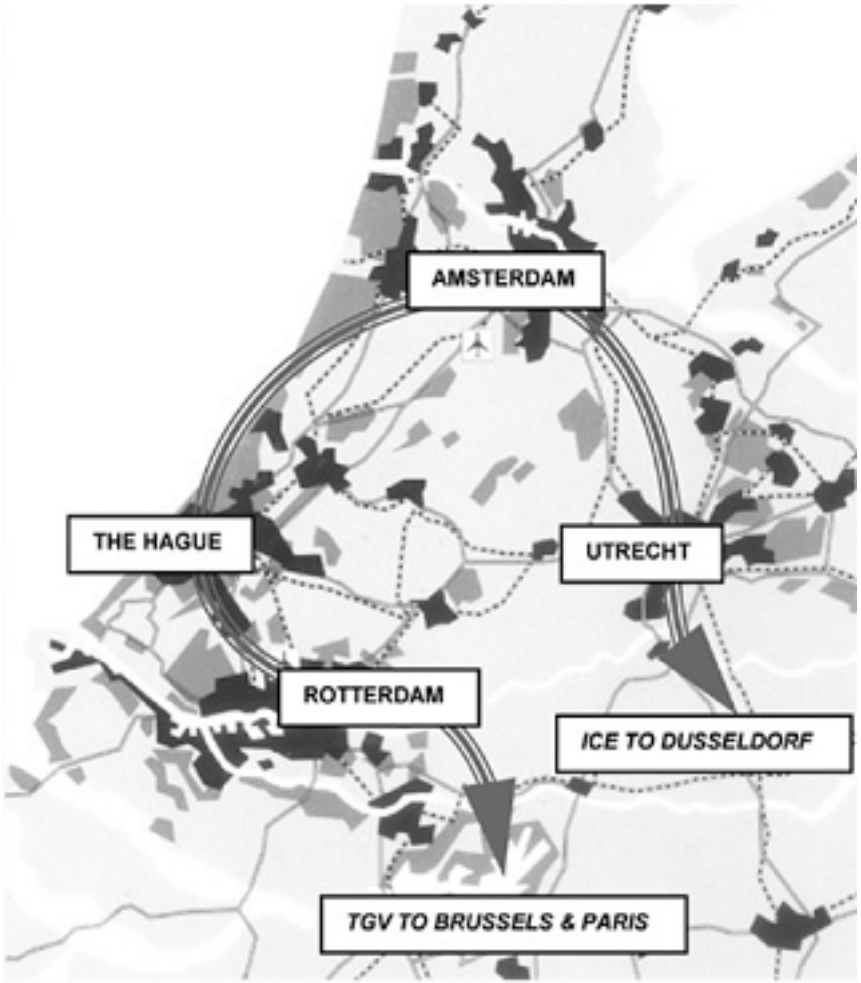
Brunet (1981)

"Bunch of grapes"



Kunzmann & Wegener (1991)

The concept of polycentricity



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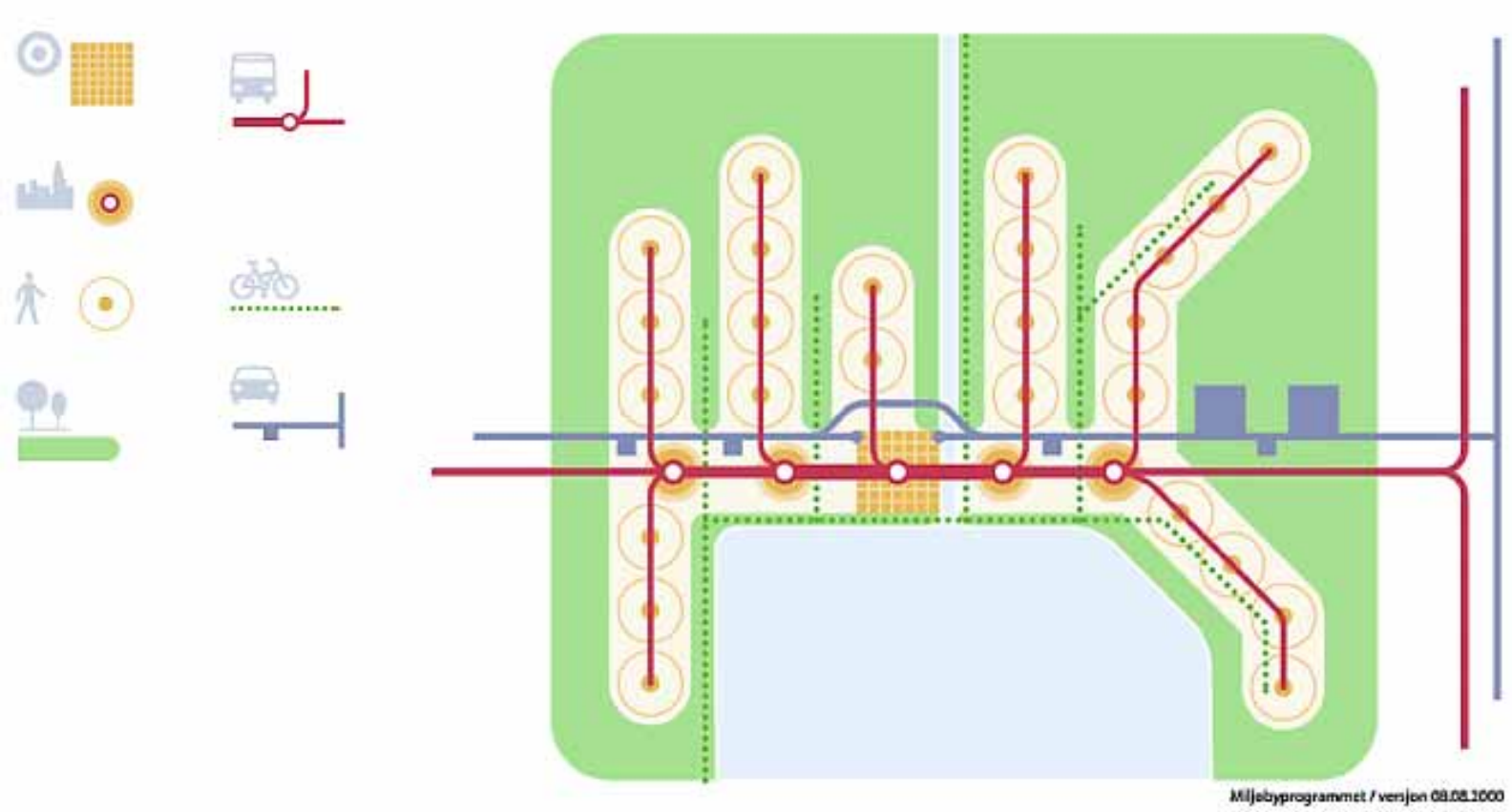
The concept of polycentricity



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Polycentricity in the ESDP

- Macro level (Europe)
  - Promote several *global integration zones* in addition to the Pentagon
- Meso level (regional / inter-regional)
  - Integrate city-regions, enhance functional complementarity
- Micro level (intra-regional)
  - Improve economic performance through improved links and better co-operation

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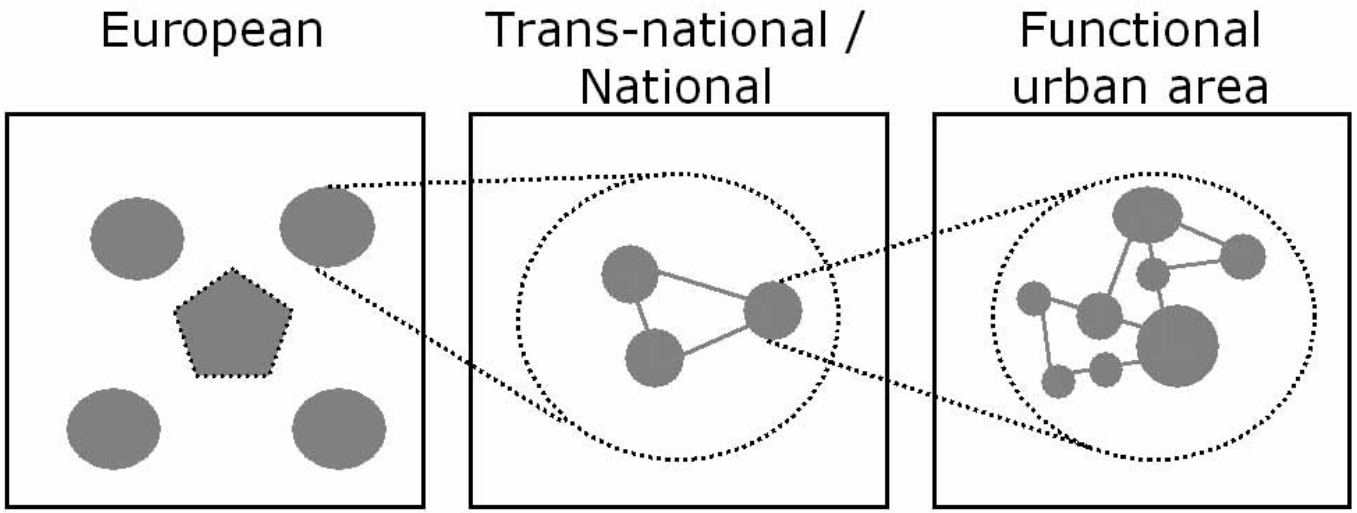
Polycentricity in the ESDP

Polycentricity at three levels

Macro **Meso** **Micro**



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Empirical analysis of Polycentricity in Europe

- Initial building blocks:
  Functional Urban Areas (FUAs)

- Travel to Work Areas with more than 50 000 inhabitants or 0,5% of the national population

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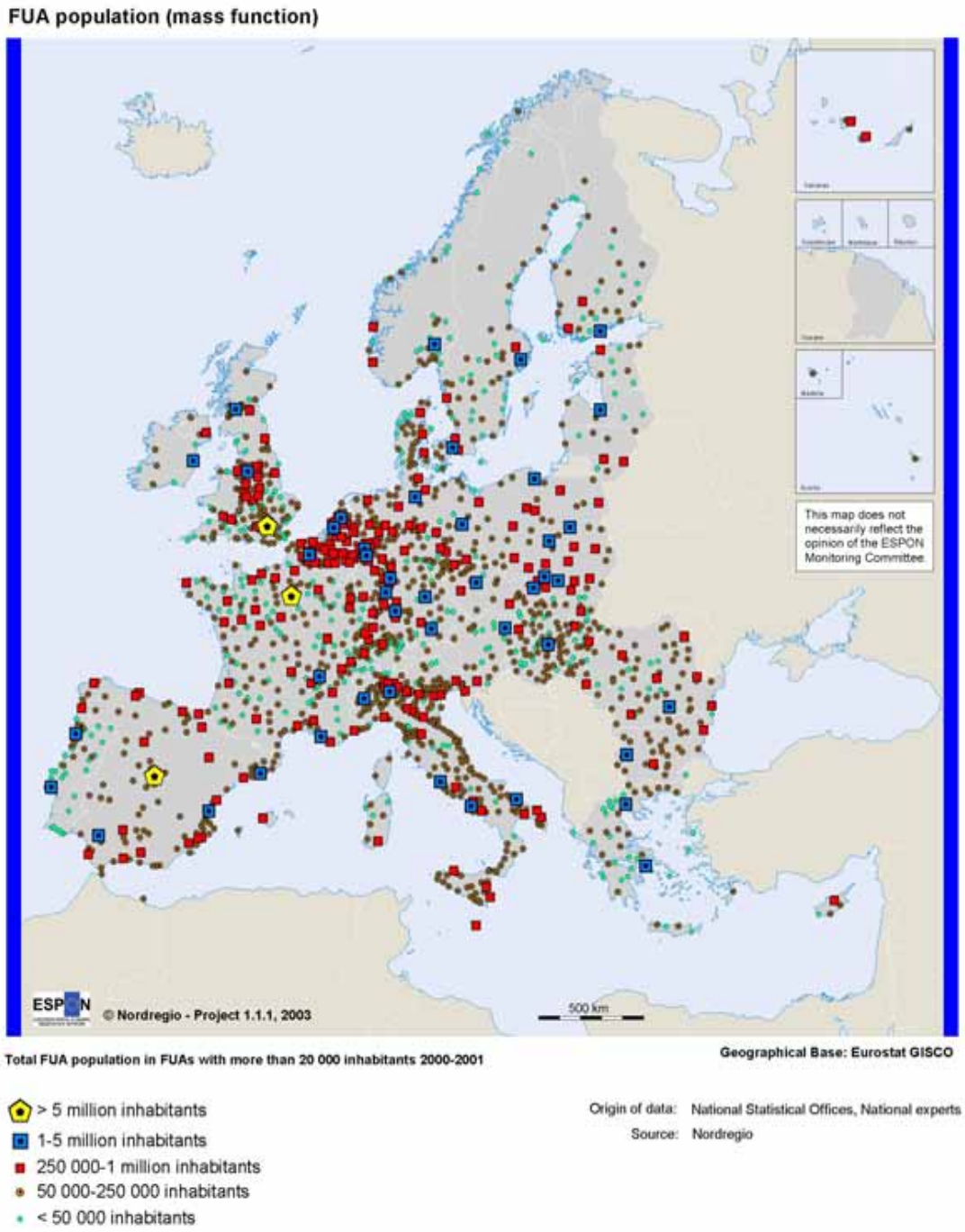

The building blocks:

1 595 functional urban areas (FUAs) in EU 27+2

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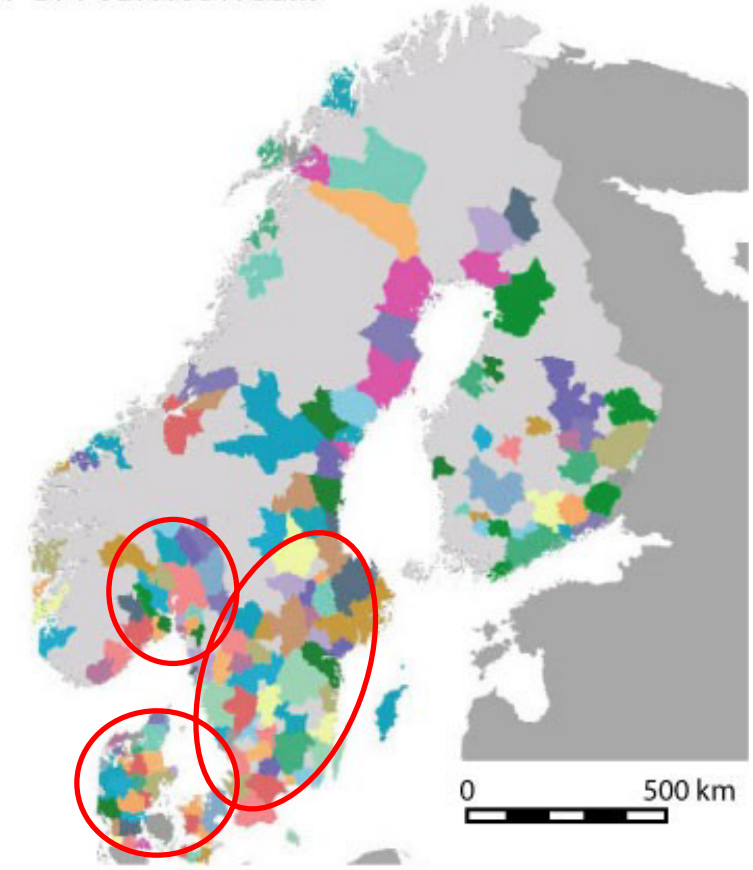
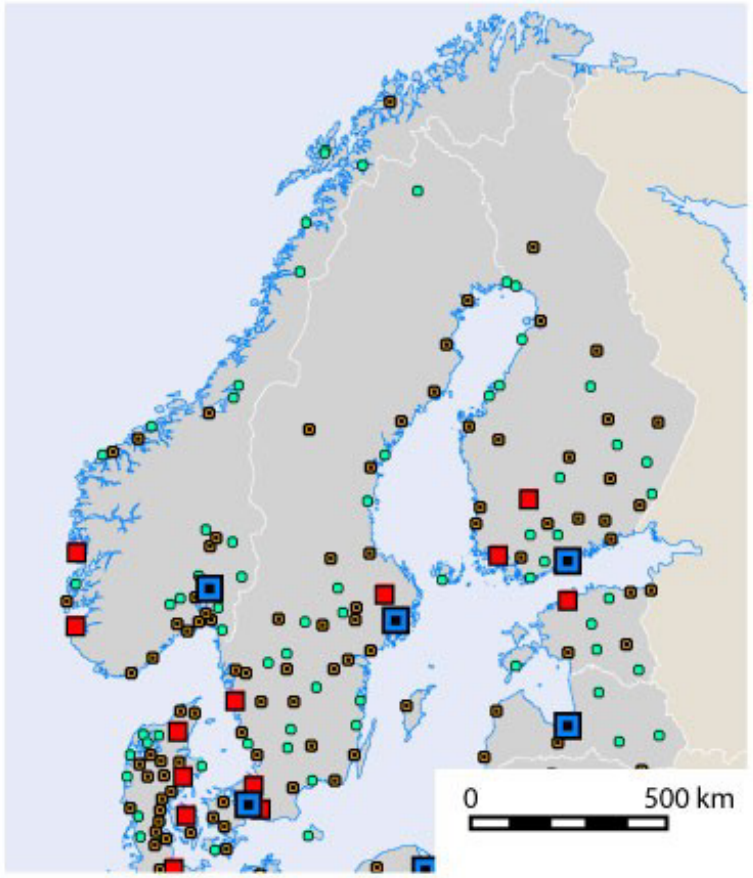
FUA territories...



...and the ways we represent them



Urban areas without rural ones?

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Alternative approach: Isochrones

- Area accessible from FUA centre within 45 minutes
- Commuting ***possible*** within this area
- Neighbouring isochrones can overlap
- Statistics based on approximation to municipal boundaries

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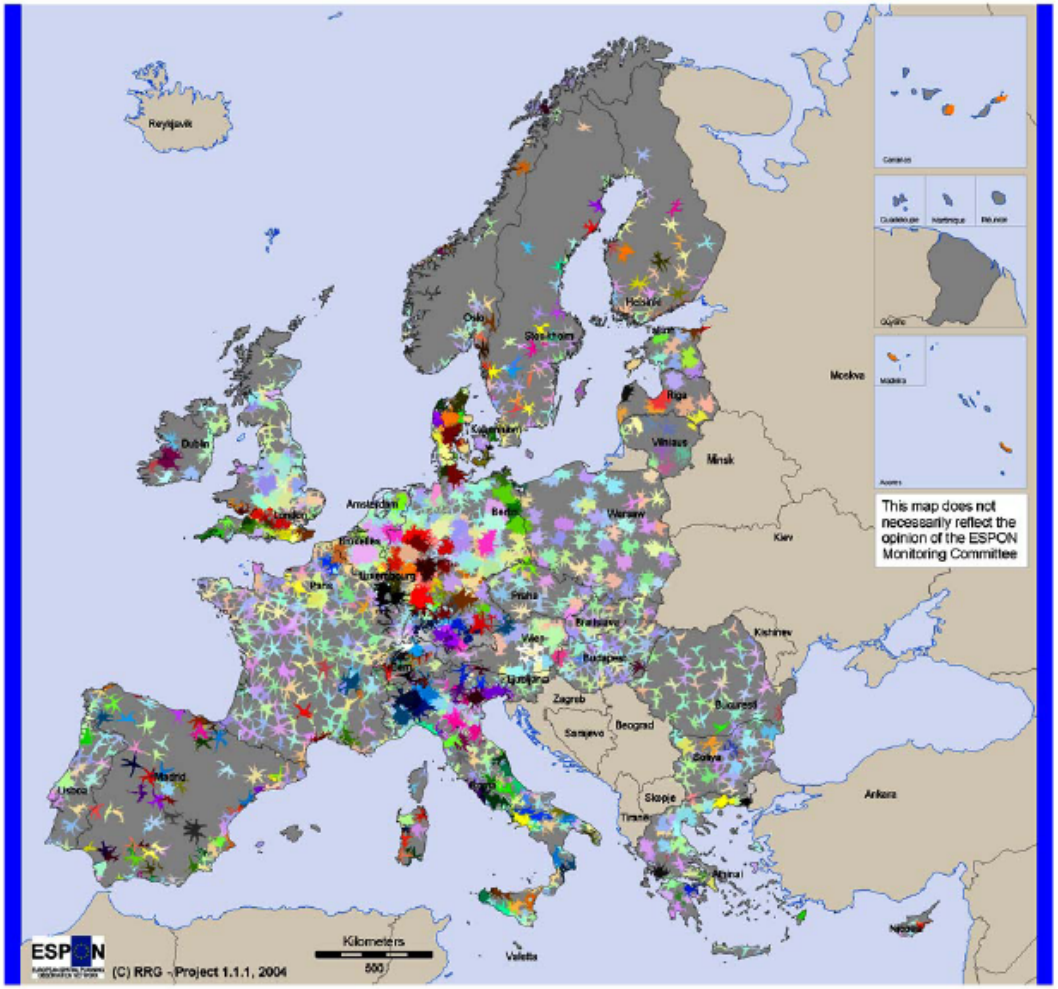
45 min isochrones around FUA centroids



Geographical Base: Eurostat GISCO

45-minute isochrones

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Example 1: Oslo

- Smaller neighbouring cities can attract commuters from central parts of Oslo (e.g. Drammen).
- Traditional statistics based on Labour markets (left map) do not reflect these potentials
- Polycentric integration scenario created by merging isochrones with 33% overlap → balanced system of 4 polycentric regions

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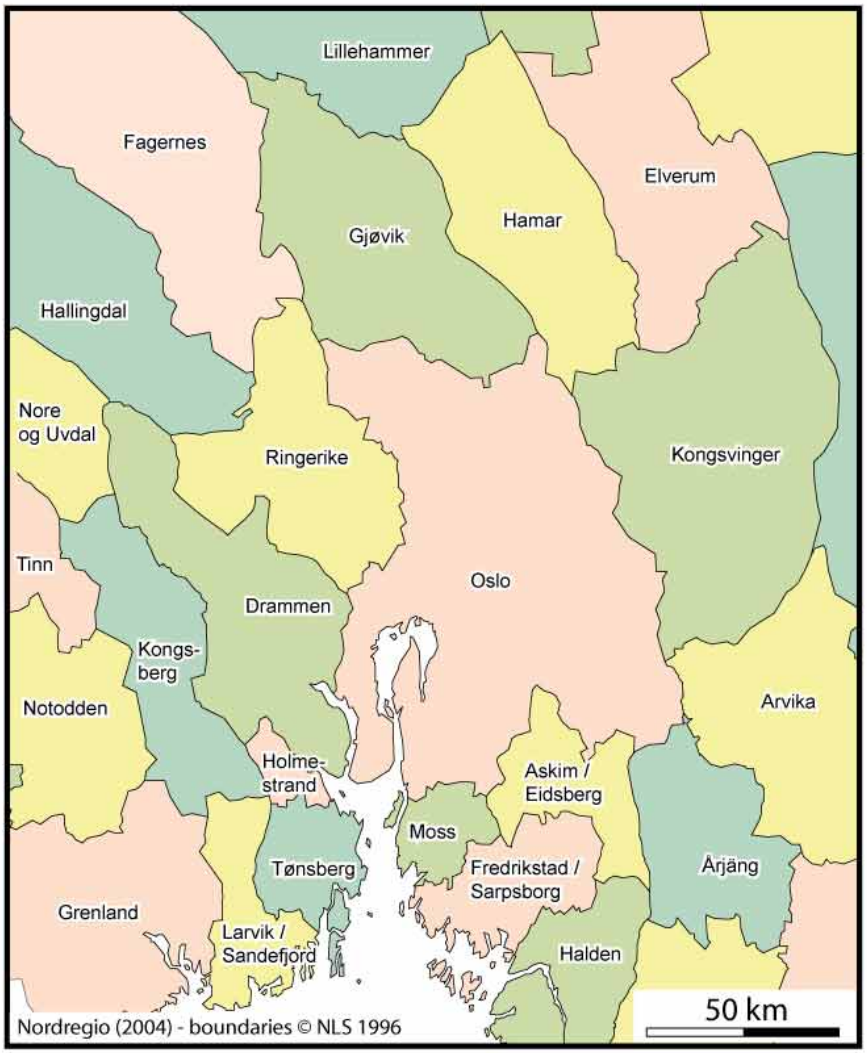
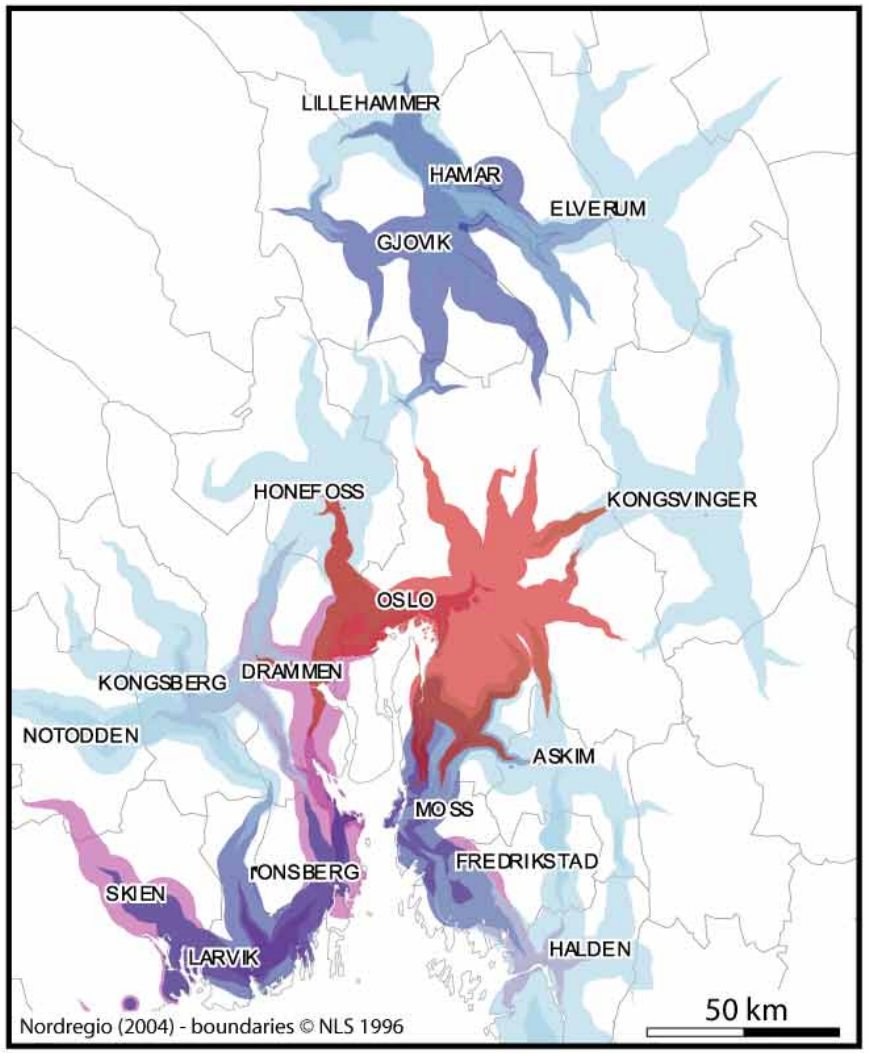
45-minute isochrones

The Oslo region

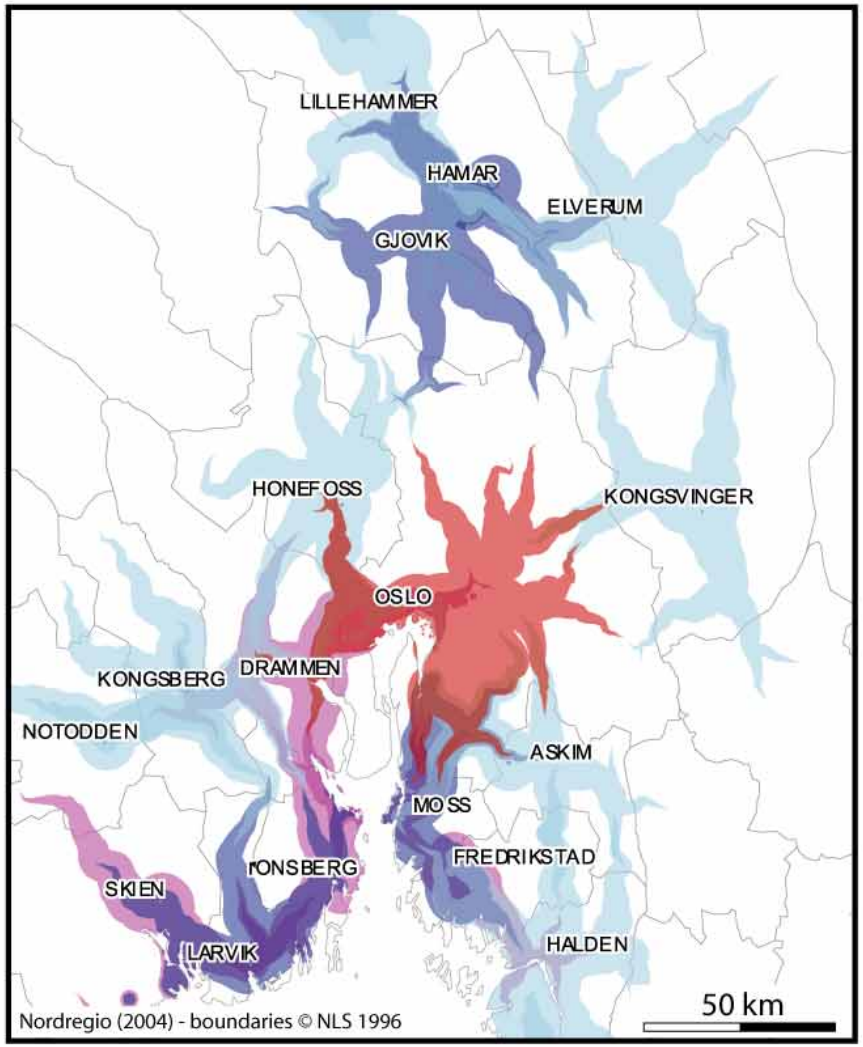


Labour market areas

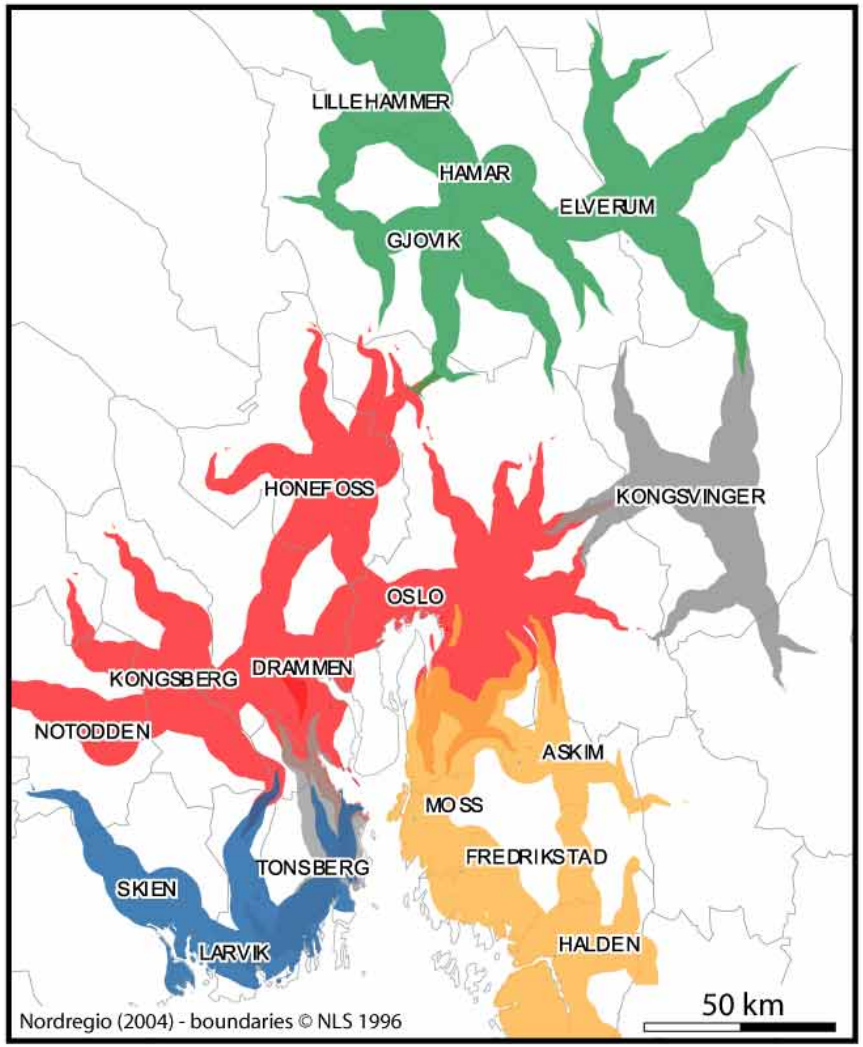


Isochrone areas
(overlaps in darker colours)

Potential polycentricity: the urban node perspective



Isochrone areas
(overlaps in darker colours)



Polycentric integration areas
(isolated isochrone areas in grey)

Example 2: Copenhagen

- Same polycentric integration scenario → A unique polycentric region, which may act as a monocentric pole in a wider regional context.

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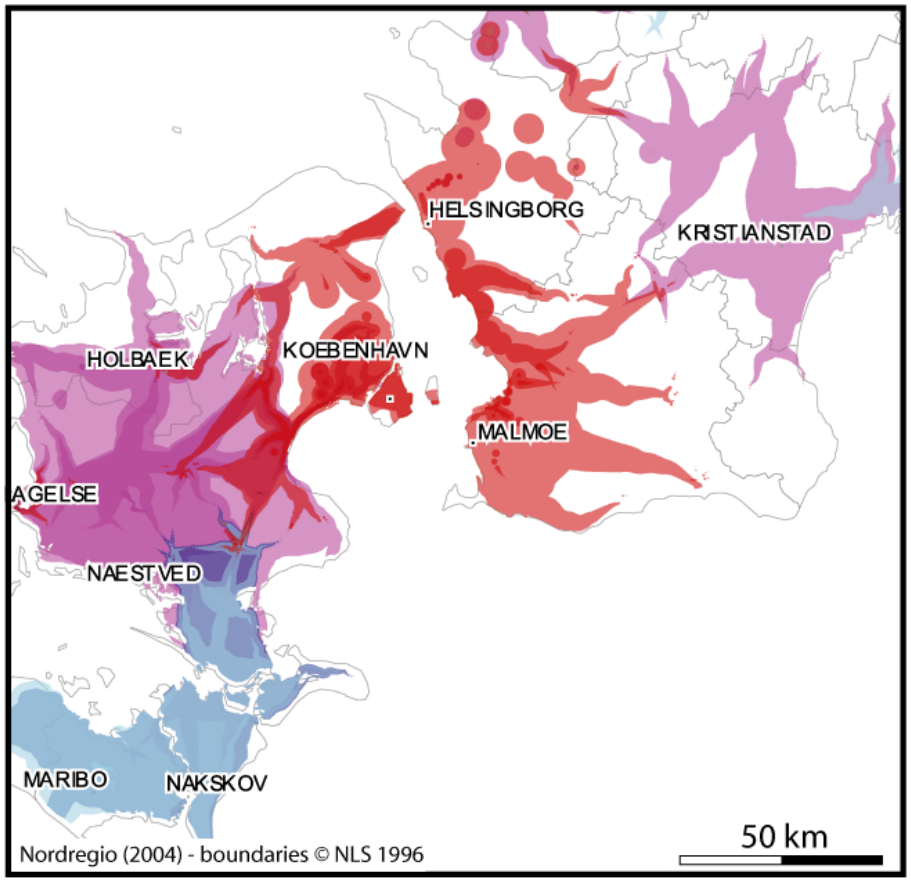
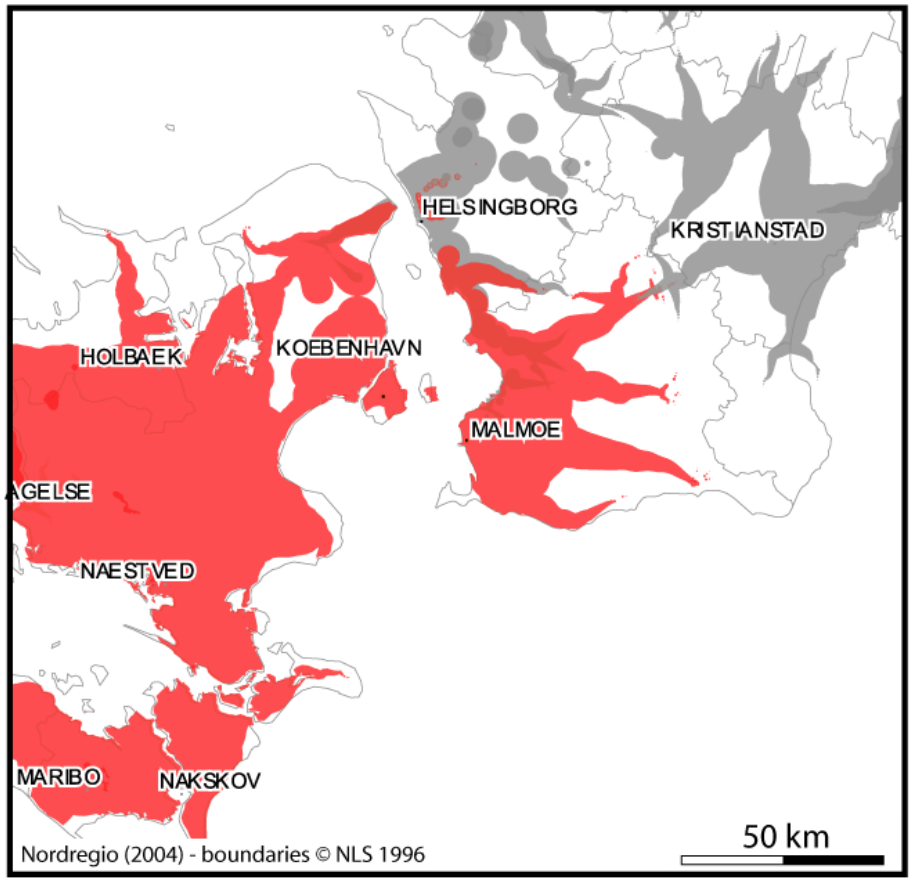
Potential polycentricity: the urban node perspective



Isochrone areas
(overlaps in darker colours)



Polycentric integration areas
(isolated isochrone areas in grey)

Example 3: Stockholm

- Same polycentric integration scenario → Apparently very little potential for polycentric integration, nodes too distant from one another
- ***But*** only a question of perspective: which are the relevant nodes? The Stockholm Office of Regional Planning and Urban Transportation consider many nodes which did not qualify as FUAs

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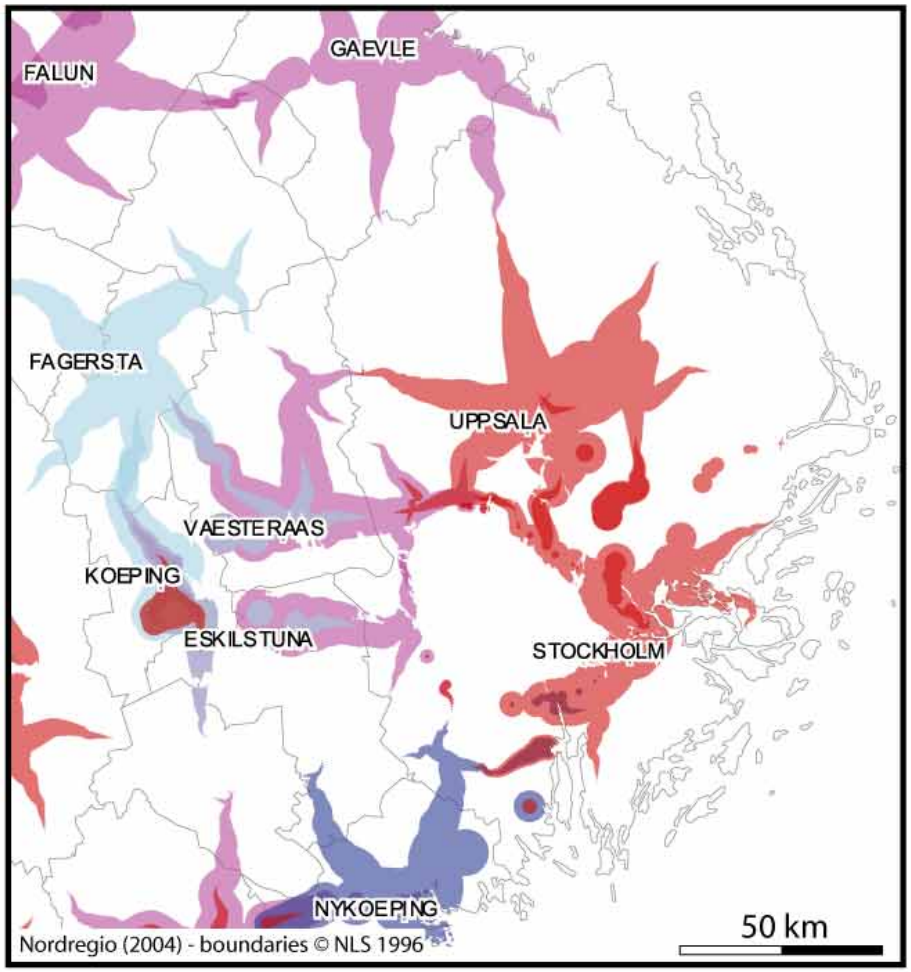
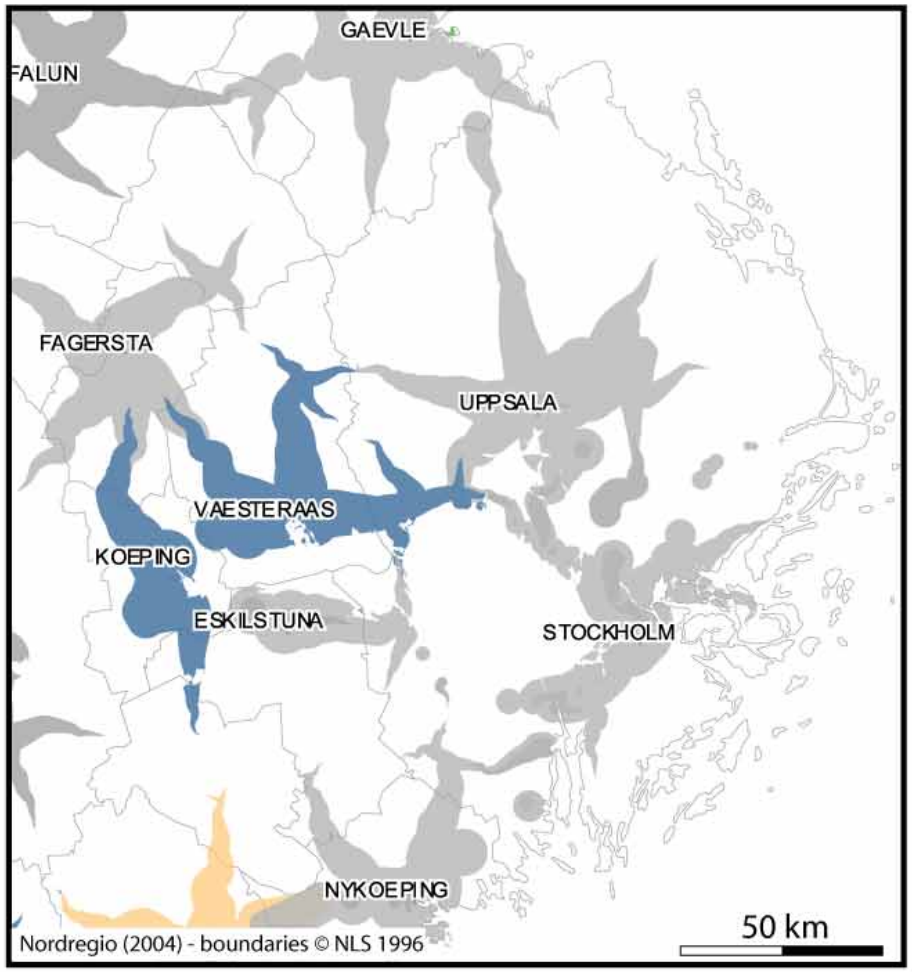
Potential polycentricity: the urban node perspective



Isochrone areas
(overlaps in darker colours)



Polycentric integration areas
(isolated isochrone areas in grey)

Base map: RTK report 1-2003

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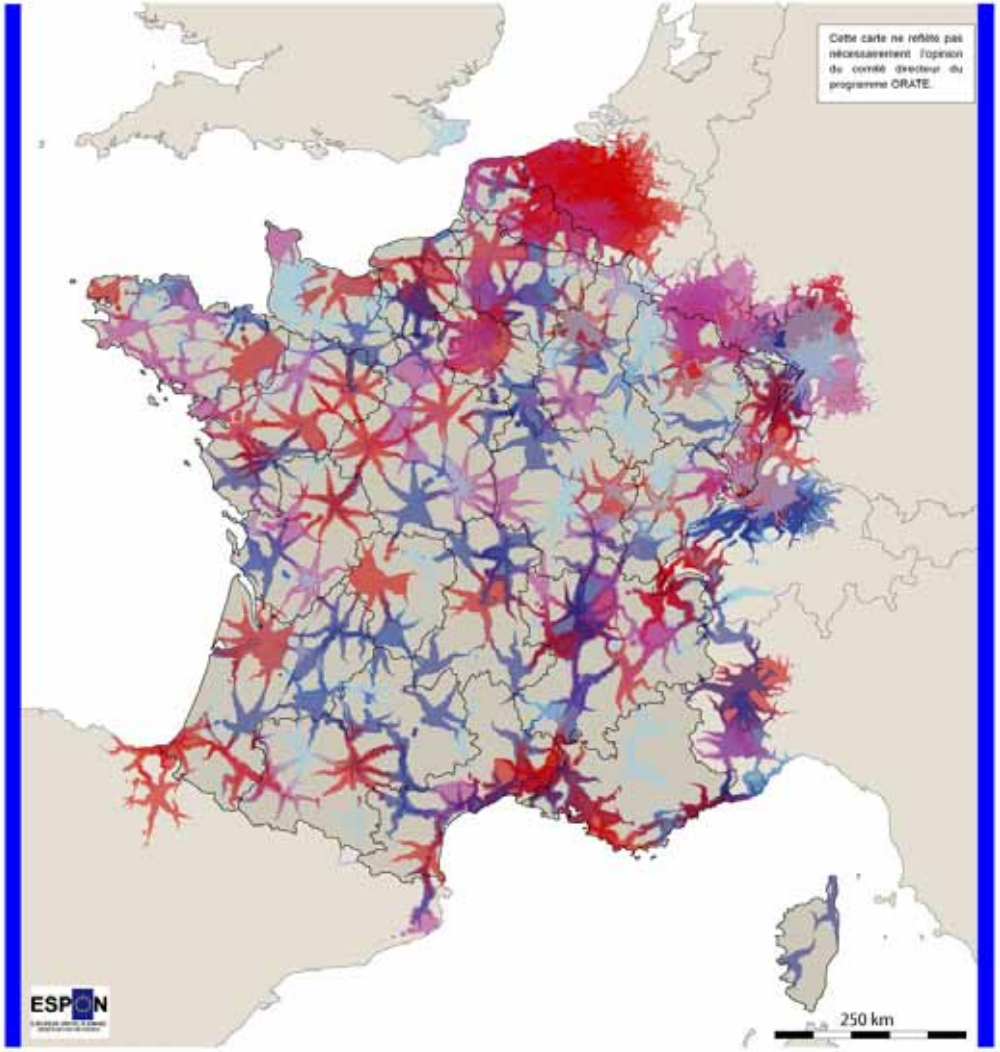
Horizons stratégiques urbains potentiels (PUSH) français et transfrontaliers



Erik Gløersen - Nordregio (2004) - ORATE projet 1.1.1.

Fonds de carte: **Eurostat GISCO**
Eurogeographics

Poids démographique de la ville-centre de l'horizon stratégique urbain (population de l'aire urbaine):

- plus de 200 000 hab.
- 100 000 à 200 000 hab.
- 50 000 à100 000 hab.
- moins de 50 000 hab.

Les couleurs plus sombres correspondent à des zones de recoupement entre horizons stratégiques urbains voisins.

Données:
Instituts statistiques nationaux
Base de données NUTS 5 ESPON

Délimitation PUSH:
Carsten Schürmann (RRG)

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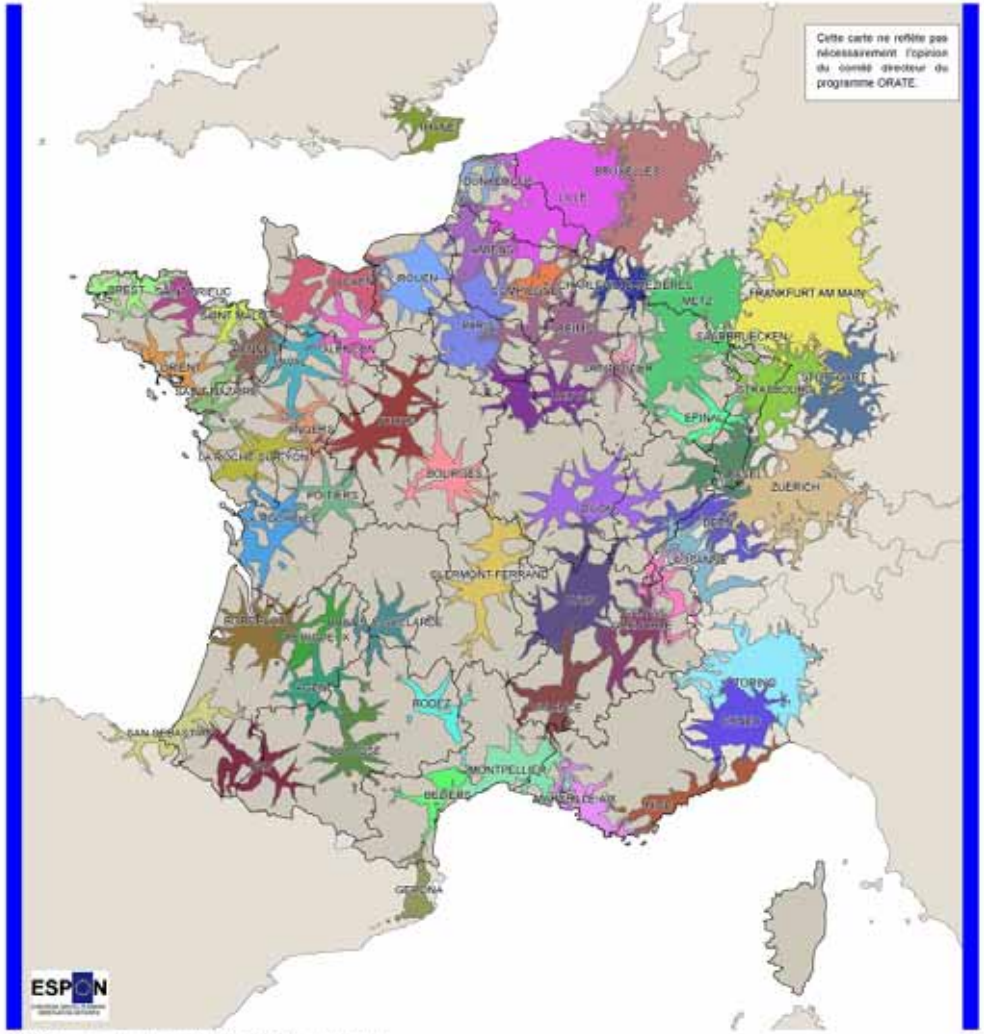
Aires d'intégration polycentrique (PIA) françaises et transfrontalières



Erik Gløersen - Nordregio (2004) - ORATE projet 1.1.1.

Fonds de carte: **Eurostat GISCO**
Eurogeographics

Le nom de ville indique le principal pôle de l'aire d'intégration polycentrique, en termes de populaiton de l'aire urbaine.

Données:
Instituts statistiques nationaux
Base de données NUTS 5 ESPON

Délimitation PUSH:
Carsten Schürmann (RRG)
Identification PIA:
Erik Gløersen (Nordregio)
Alexandre Dubois (Nordregio)

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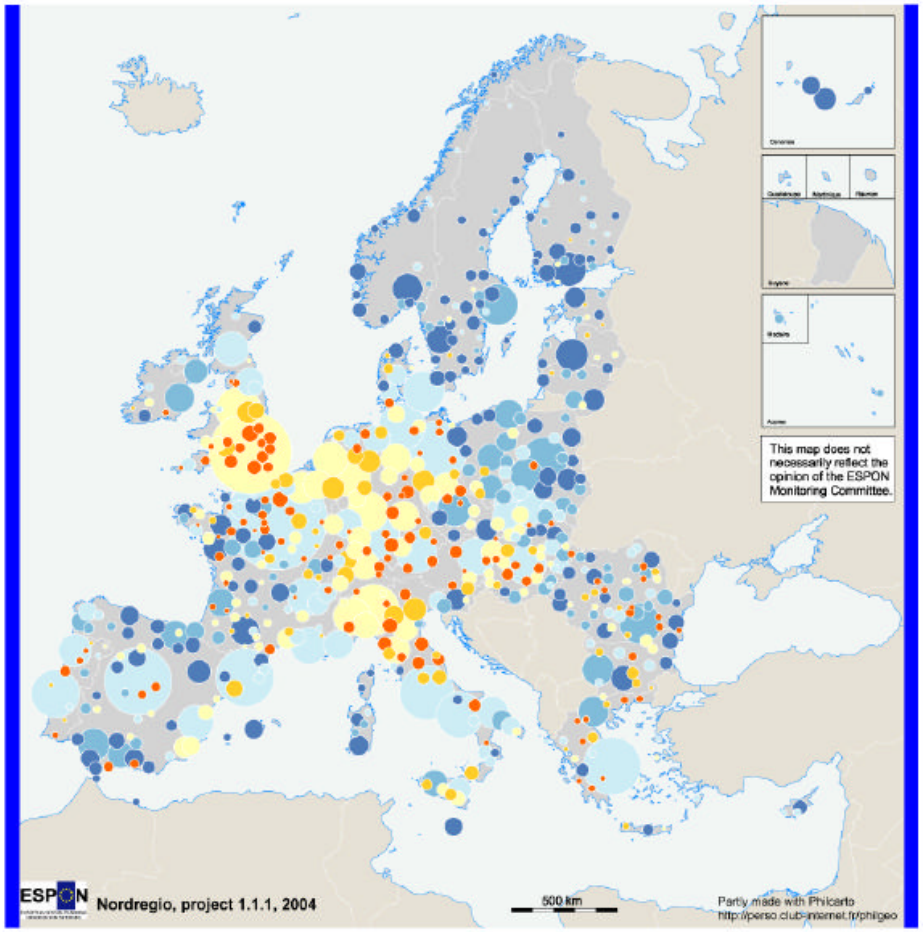
The effect of regional polycentrism applied across Europe:
Comparing the European rank of individual cities and that of their respective PIA



Effect of polycentric integration across Europe:

increased contrasts between core and peripheries

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Reassessment of FUA typology

- Main conclusion from isochrone analysis: polycentric integration cannot be based on size.
- Functional specialisation should be the main focus.
- To what extent can the FUA typology support this perspective?

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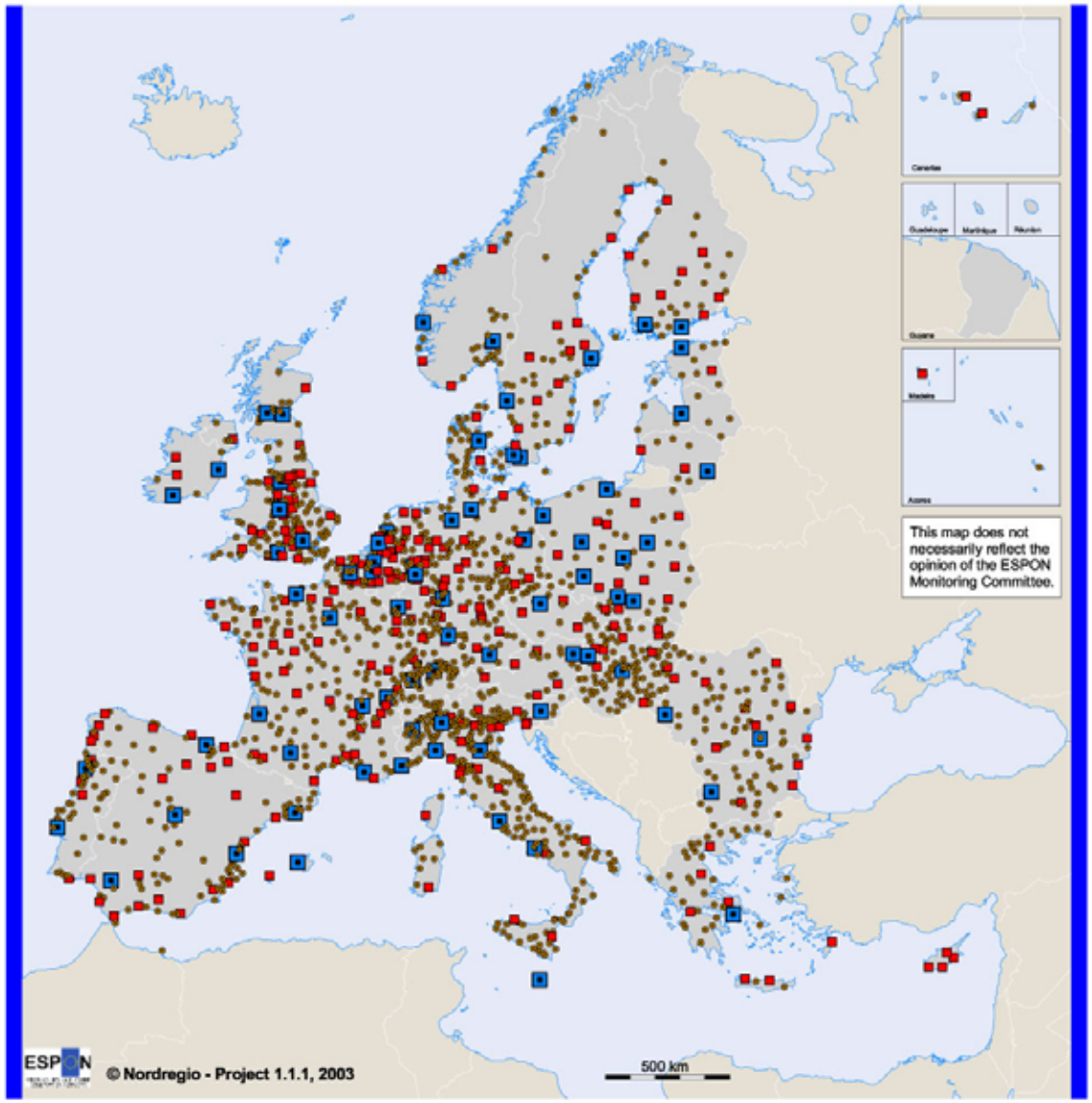
Typology of Functional Urban Areas (FUAs)



Geographical Base: Eurostat GISCO

- Metropolitan European Growth Areas (MEGAs)
- Transnational / national FUAs
- Regional / local FUAs

Origin of data: EUROSTAT, National Statistical Offices, National experts

Source: Nordregio

A typology of FUAs, based on five functions

76 MEGAs

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FUA typology

- Identification of MEGAs: Metropolitan European Growth Areas
- Scores (from 1 to 5) for 7 indicators
- Two indicators not taken into account after discussions with DG REGIO: administration and tourism.

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		Importance in the European urban network				
		Global 5	**E**uropean 4	**N**ational 3	**R**egional 2	**L**ocal 1
F u n c t i o n s	Populatio n	1 % E +	1 000 000 + (up to 1% E)	250 000 – 999 999	50 000 – 249 999	20 000 – 49 999
	Industry	Industrial GVA Above 20 000 Million Euros	Industrial GVA 7 500 – 19 999 Million Euros	Industrial GVA 2 500 – 7 499 Million Euros	Industrial GVA 1 000 – 2 499 Million Euros	Industrial GVA less than 1 000 Million Euros
	Tourism	More than 100 000 beds in the region	More than 100 beds per 1000 inhabitants (total more than 10 000 beds) or 50 000 – 99 999 beds	15 000 – 49 999 beds	5 000 – 14 999 beds or 25 – 99 beds per 1000 inhabitants	Less than 5000 beds or 25 beds per 1000 inhabitants
	Transport	≥ 5 % E +	1 – 4,99 % E	≥ 5 % N (less than 1 % E)	2 – 4,99 % N	Airport or port, but less 2 % N
	University	University (≥ 500 000 students in FUA)	University (50 000 – 499 999 students in FUA)	University (10 000 – 49 999 students in FUA)	University (5000 – 9 999 students in FUA)	University (less than 5000 in FUA)
	Decision-making centre	≥ 5 % E +	2 – 4,99 % E	≥ 10 % N (less than 2 % E)	2 – 9,99 % N	Top-company Headquarter(s), but less than 2 % N
	Administr ative status	EU – capital (Brussels)	National capitals (highest category according to national definition)	Not used	Provincial and/or regional capitals	Only service function (local authority)

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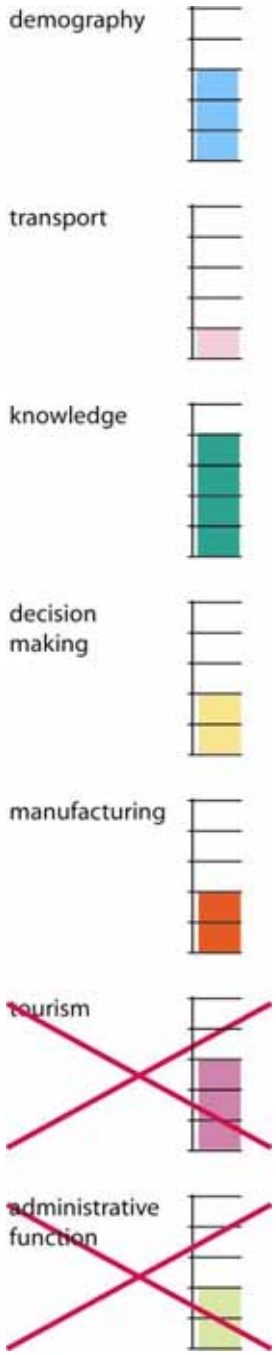

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How can we assess the importance of this city?

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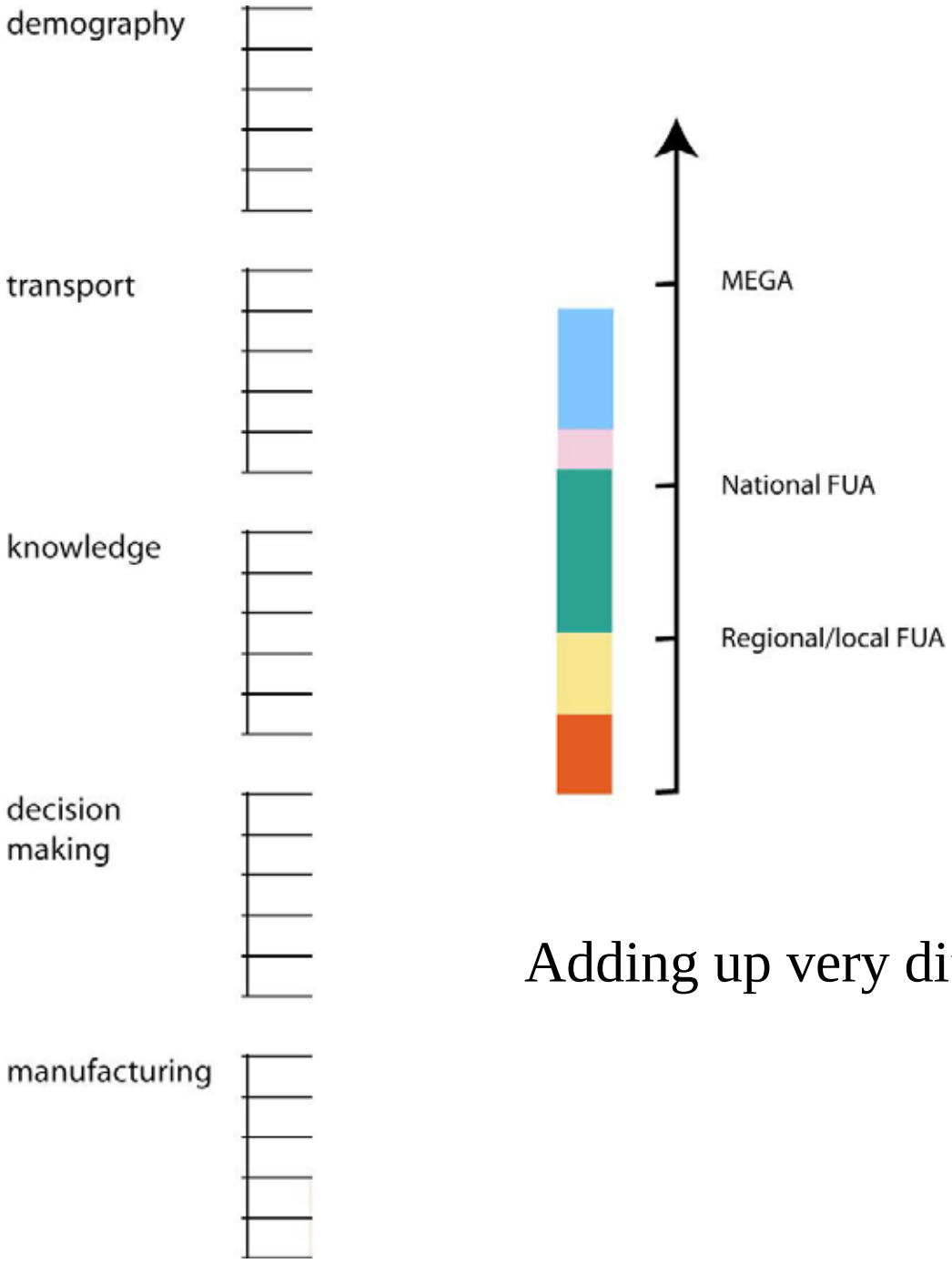

Adding up very different indicators

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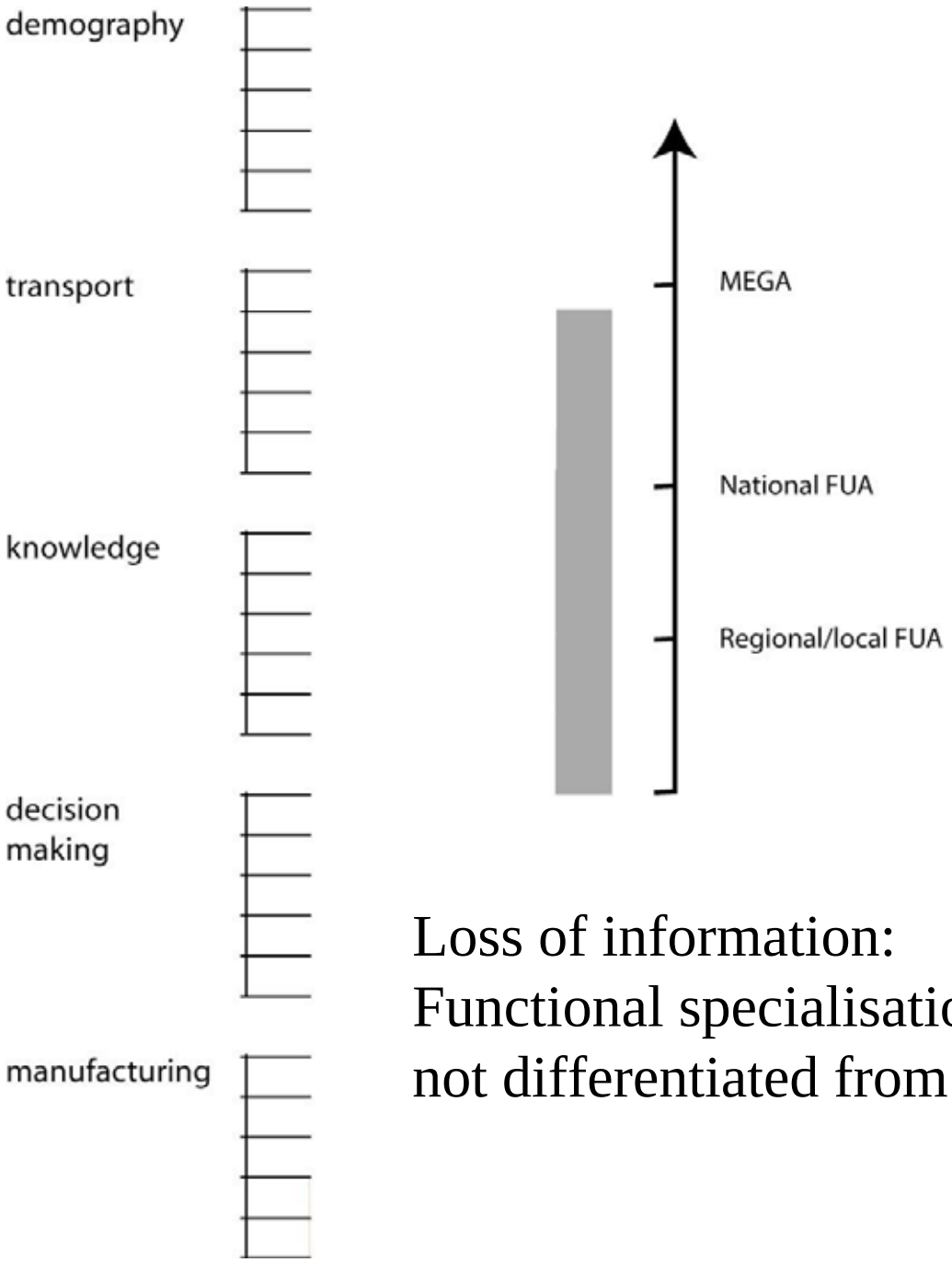

Loss of information:
Functional specialisation
not differentiated from accumulation of mass

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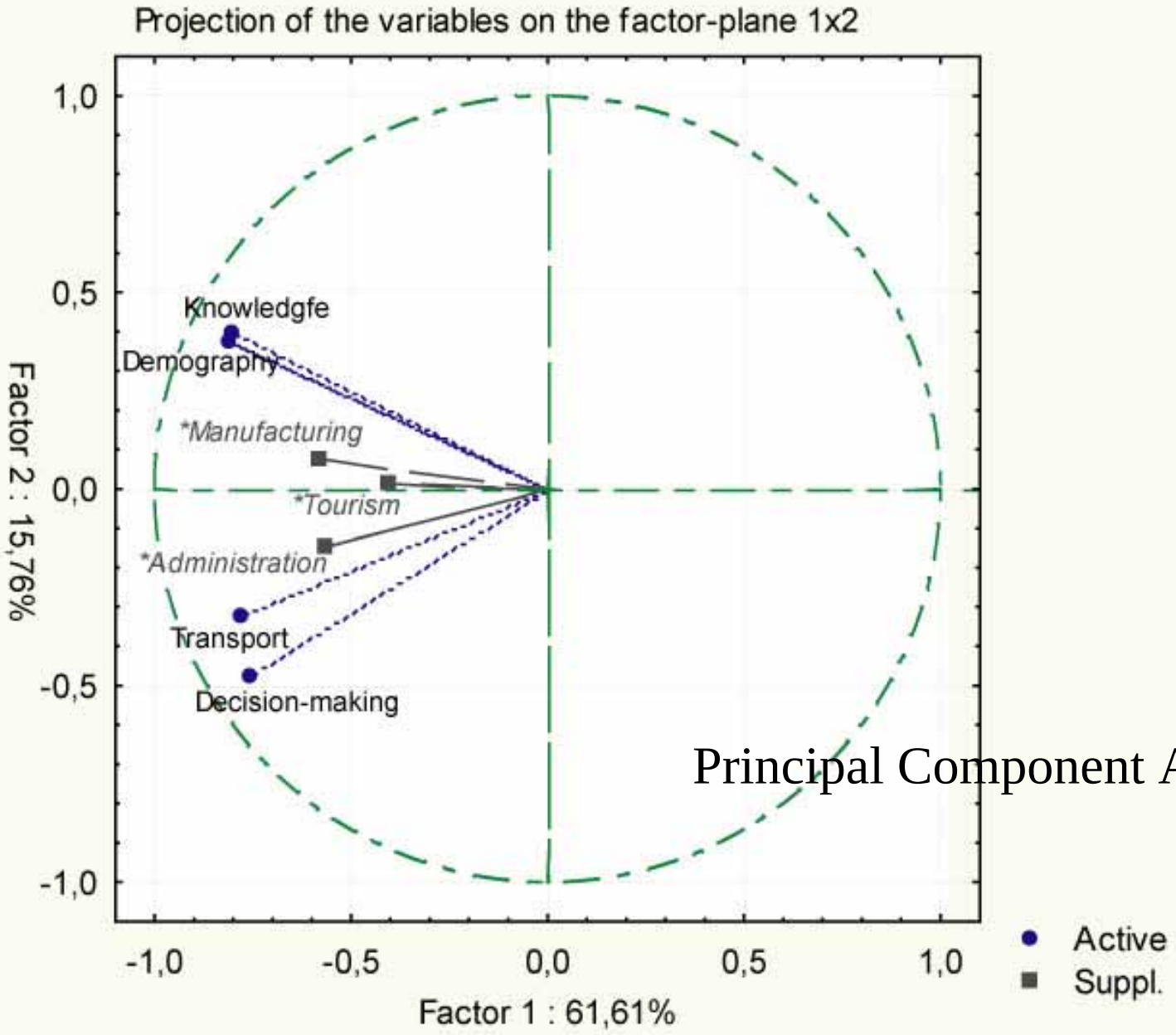

Principal Component Analysis:

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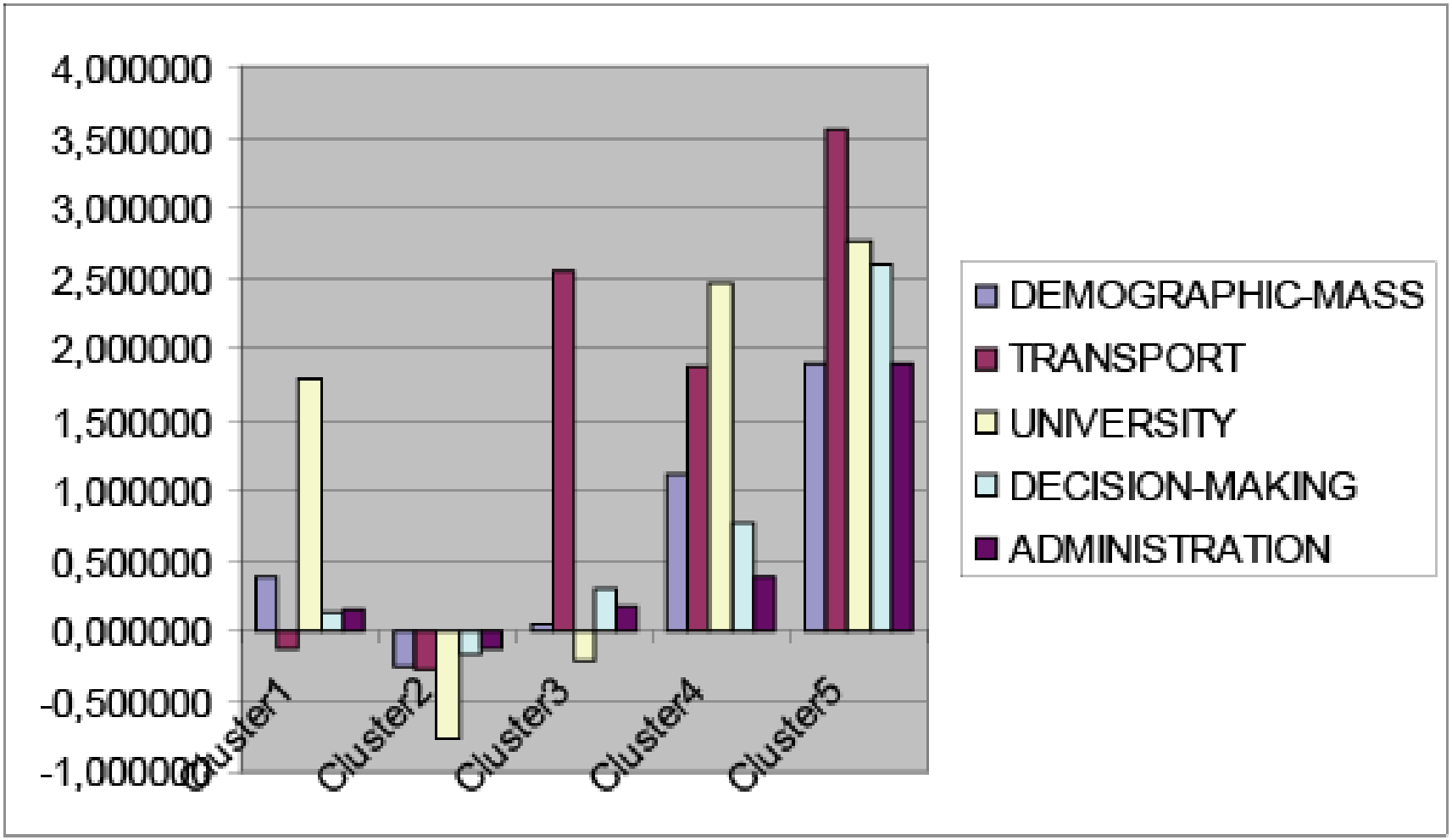

K-means clustering

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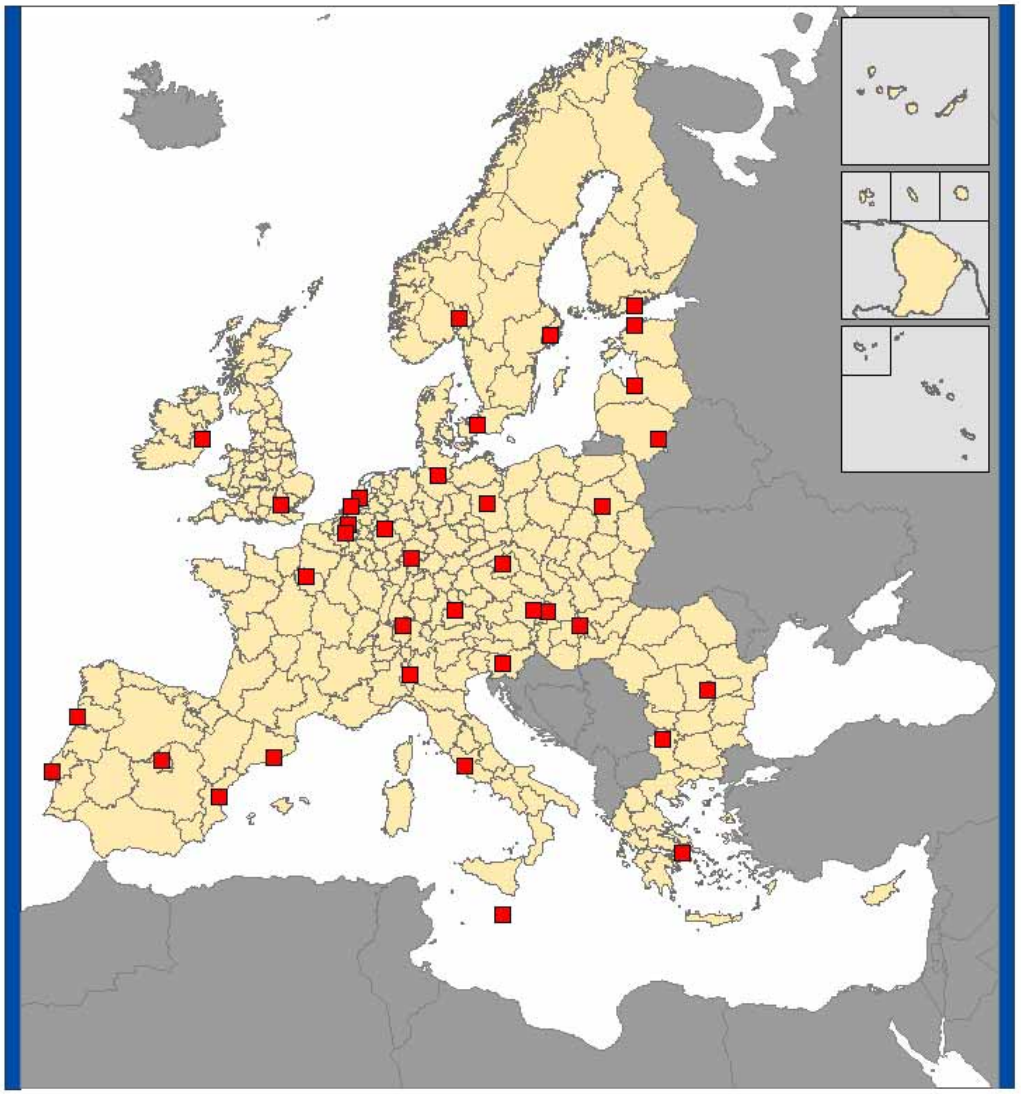

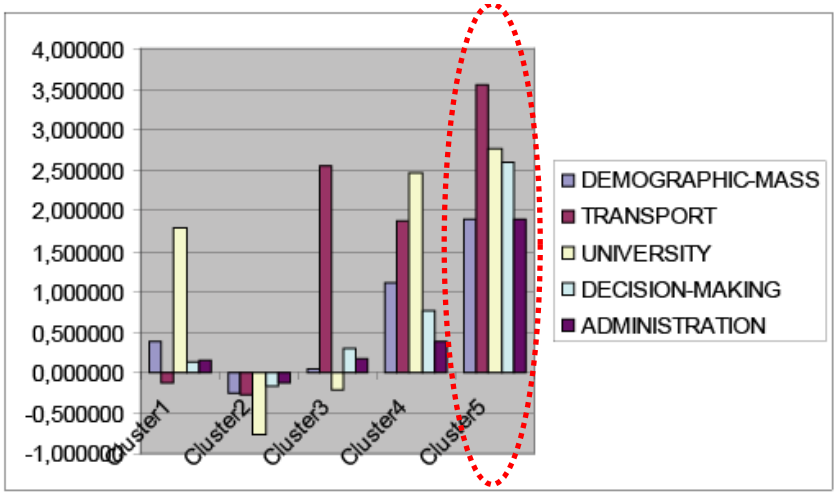

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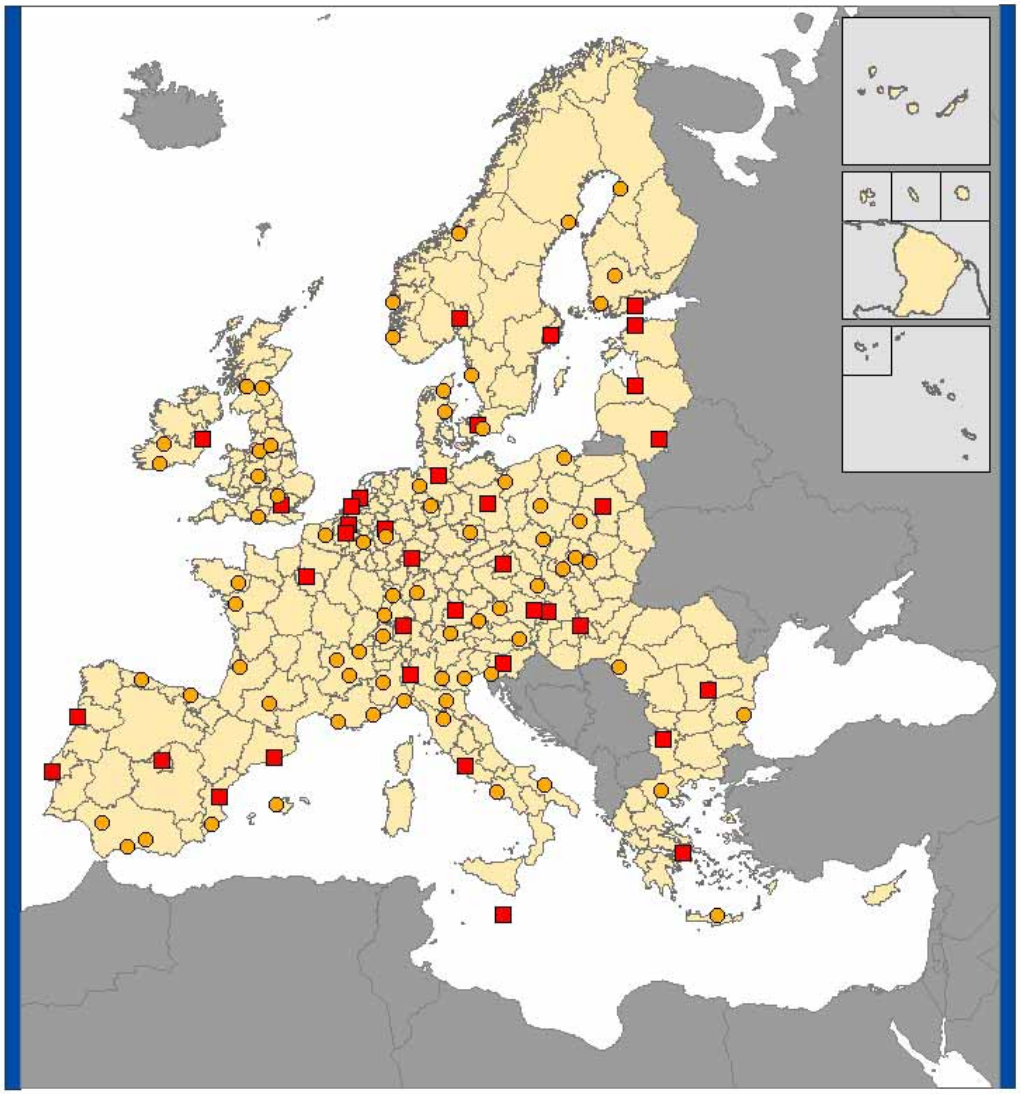

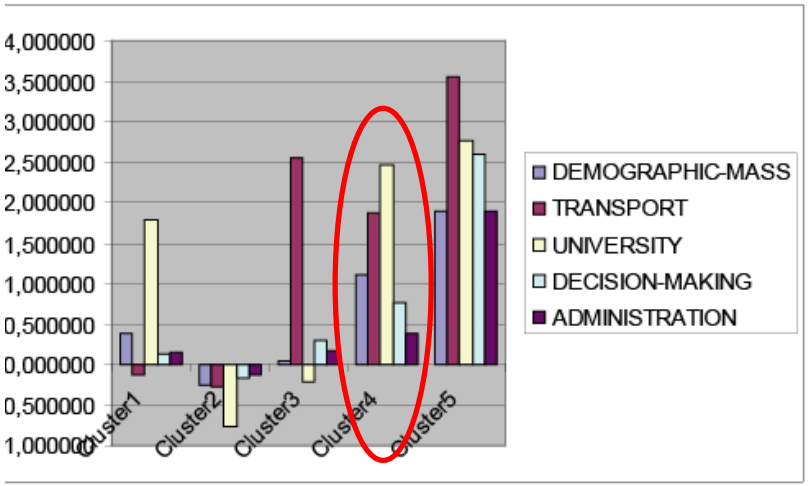

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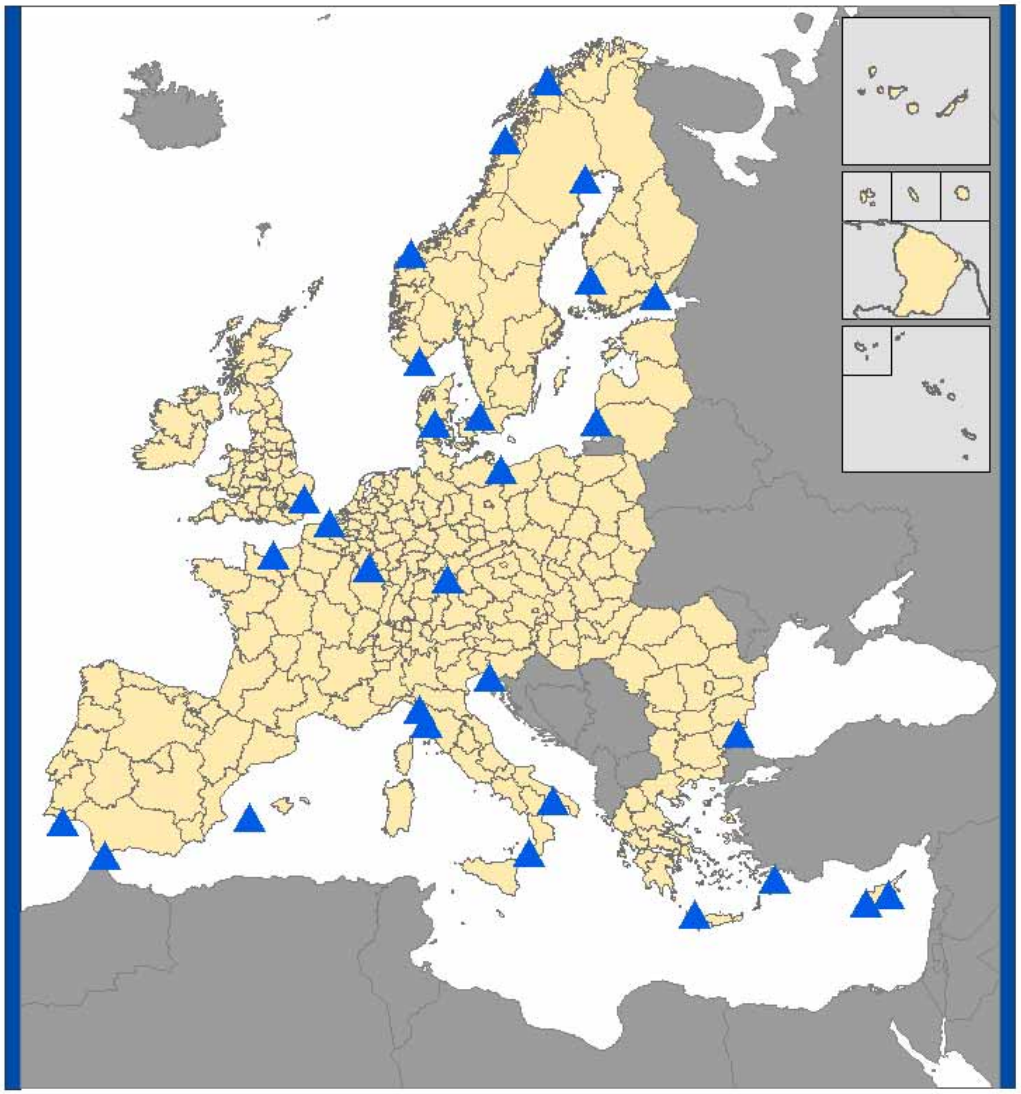

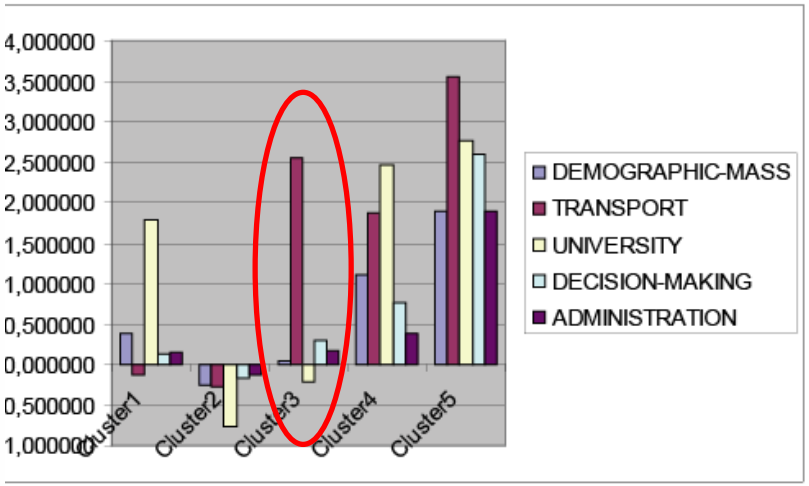

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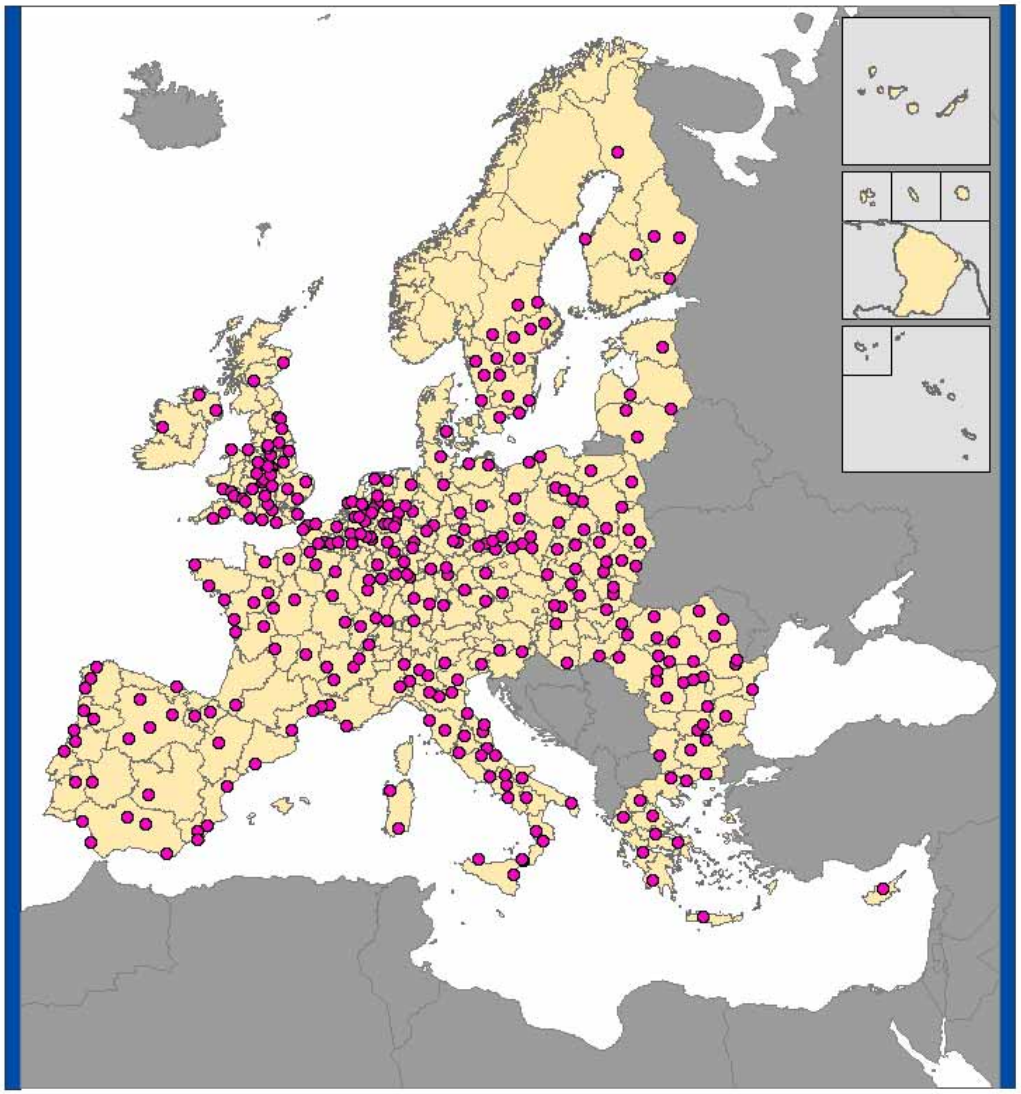

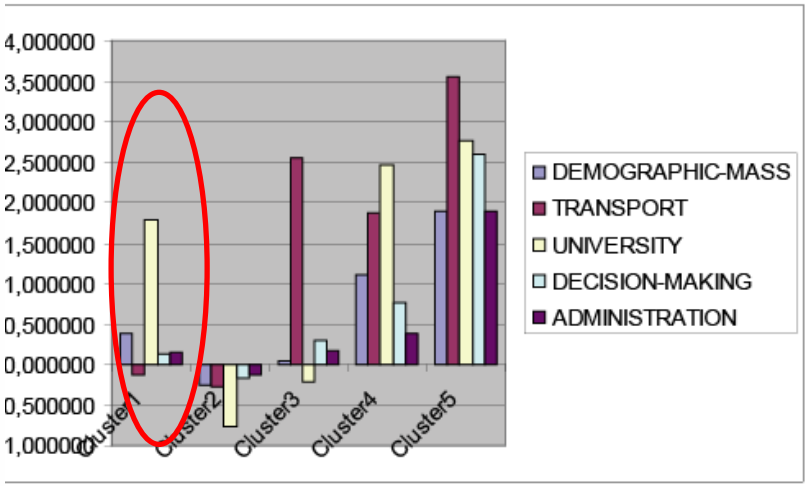

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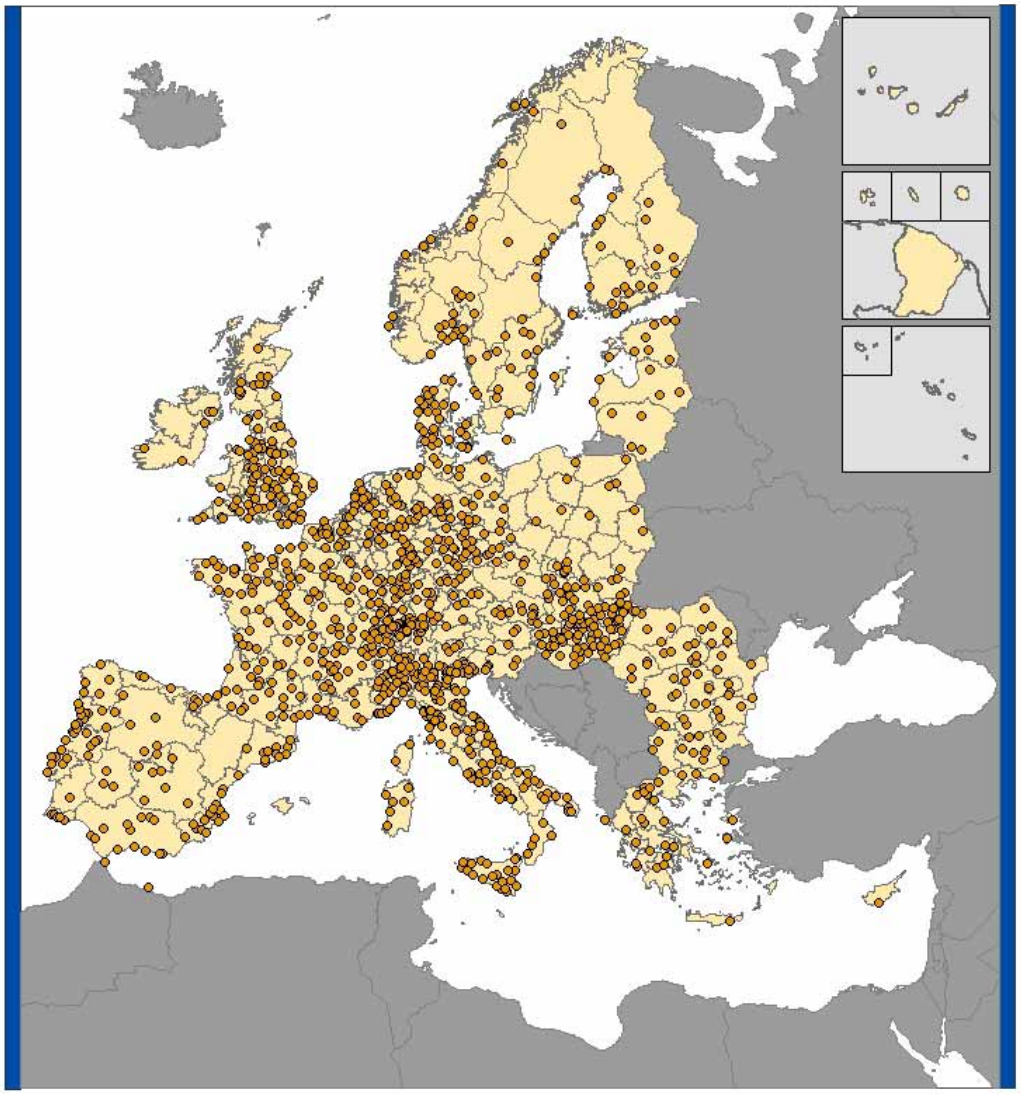

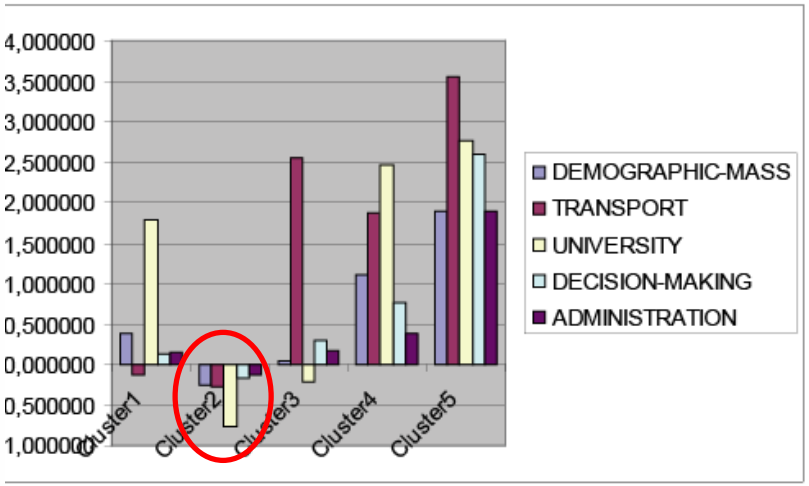

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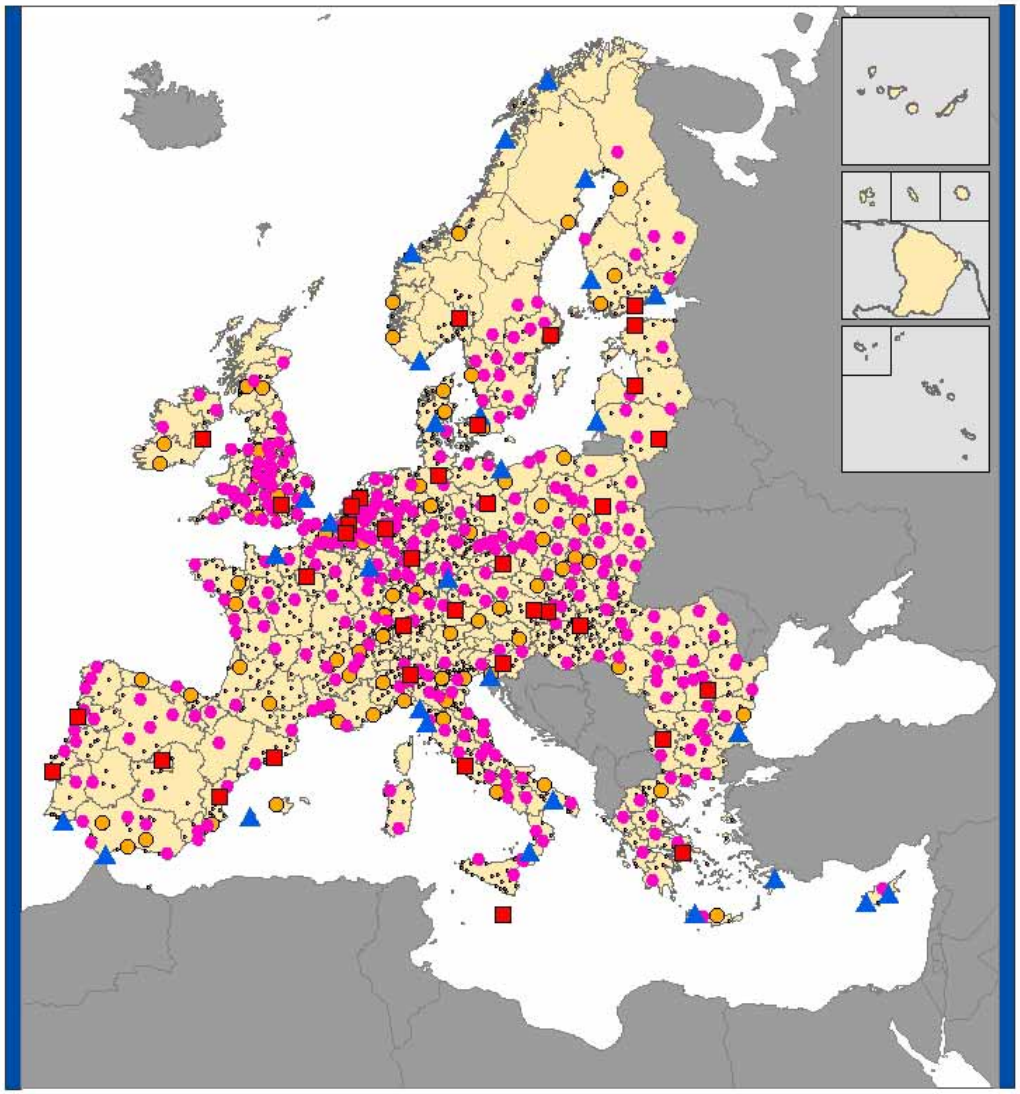

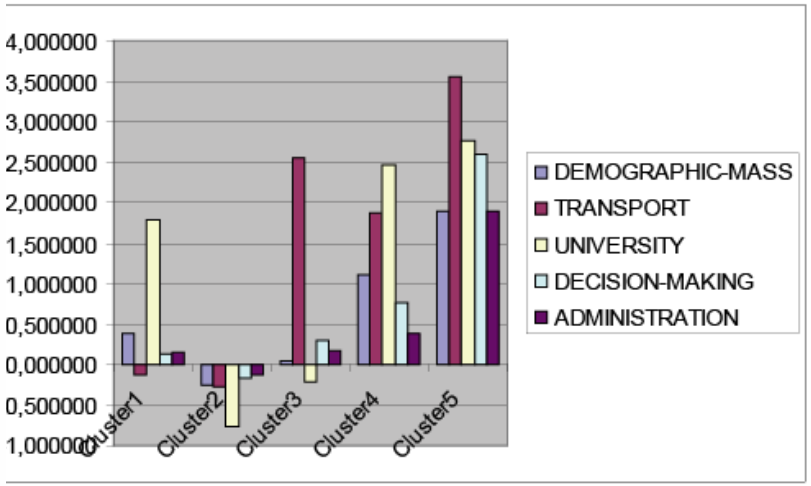

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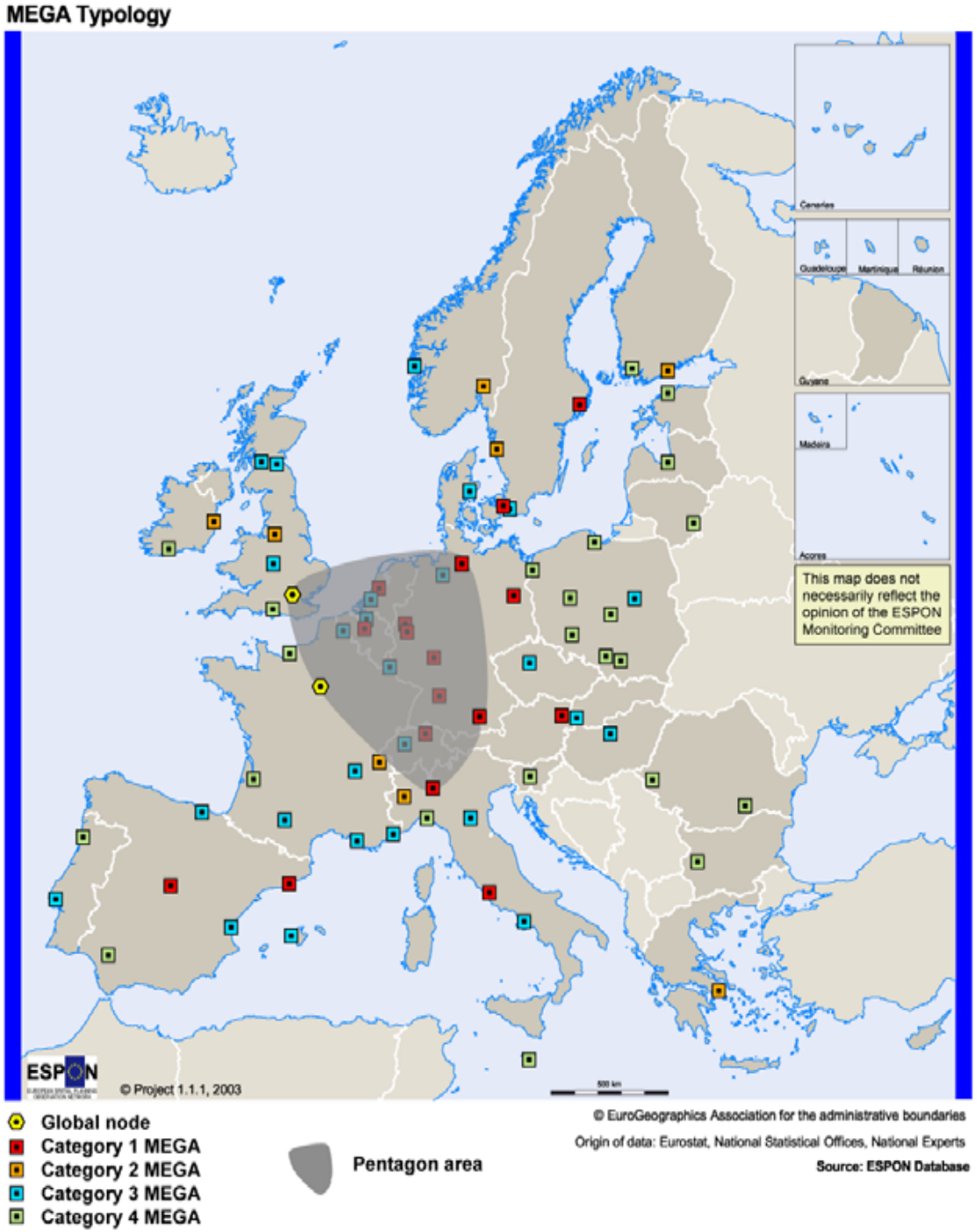
A typology of MEGAs



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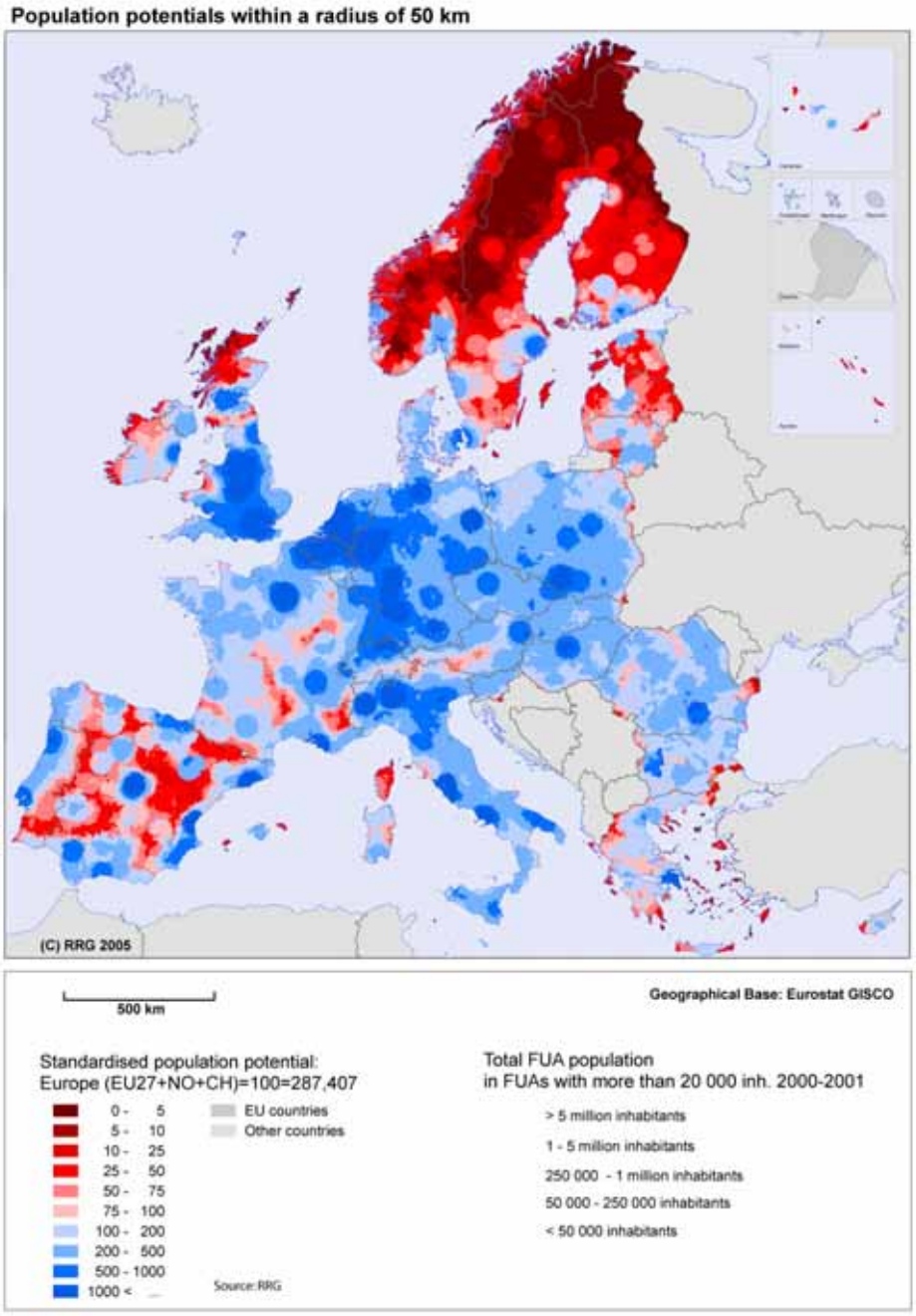

Continuous data:
an alternative
to FUA delimitation

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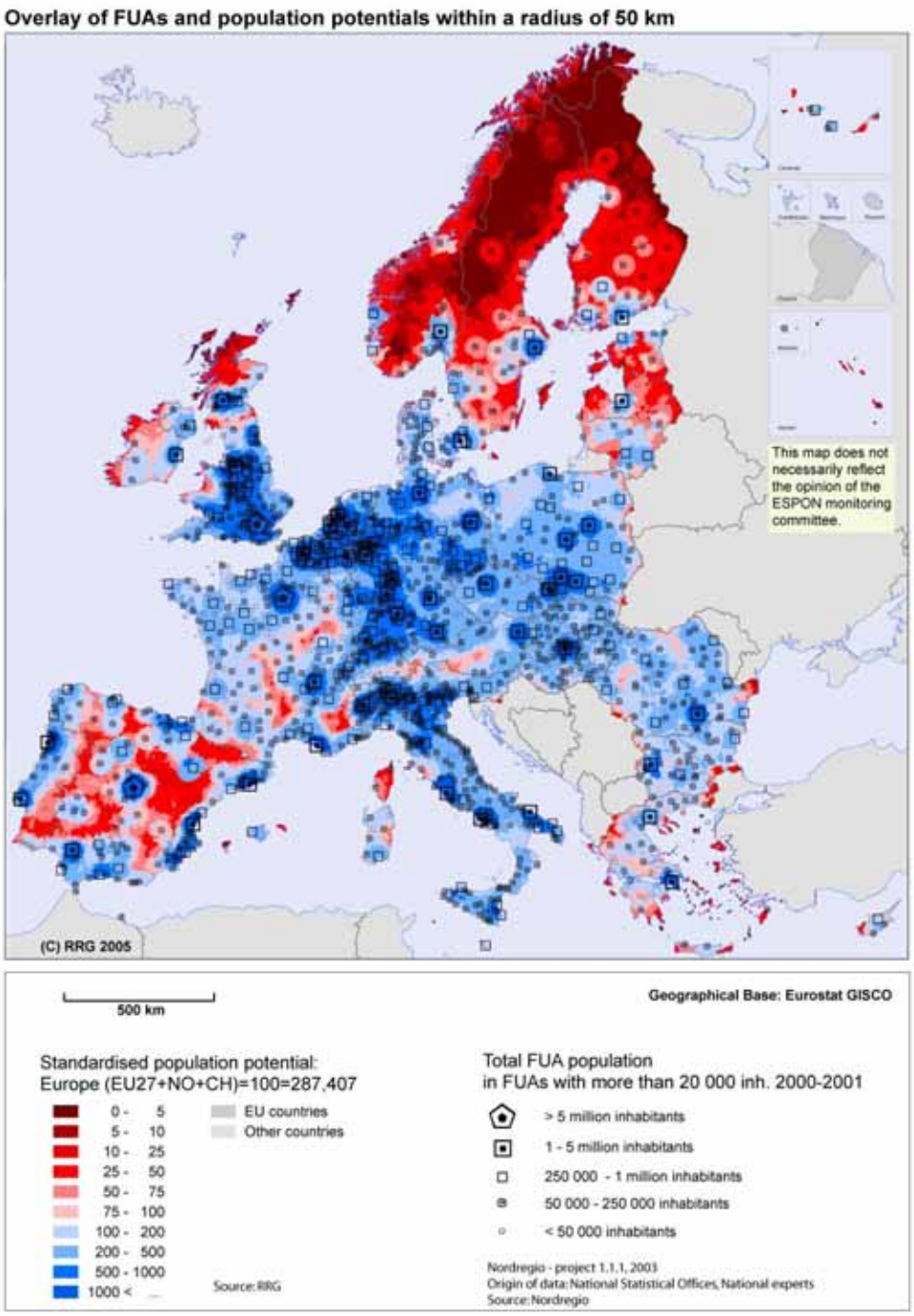

Overlay with FUA centres

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Conclusions – findings

- Polycentricity should build on functional specialisation;
- The quantitative methodology should be designed accordingly;
- Complex interaction between specialisation and rank – can European syntheses of these dynamics be used for policy applications?

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Conclusions - methods

- Cities and towns can be analysed through their territorial context rather than through a hypothetical ”functional boundary”
- Existing statistics reinforce and reproduce contrasts between primary and secondary nodes in each region
- Using continuous data gives the best basis for evaluating the potentials of cities: main focus for ESPON?

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