

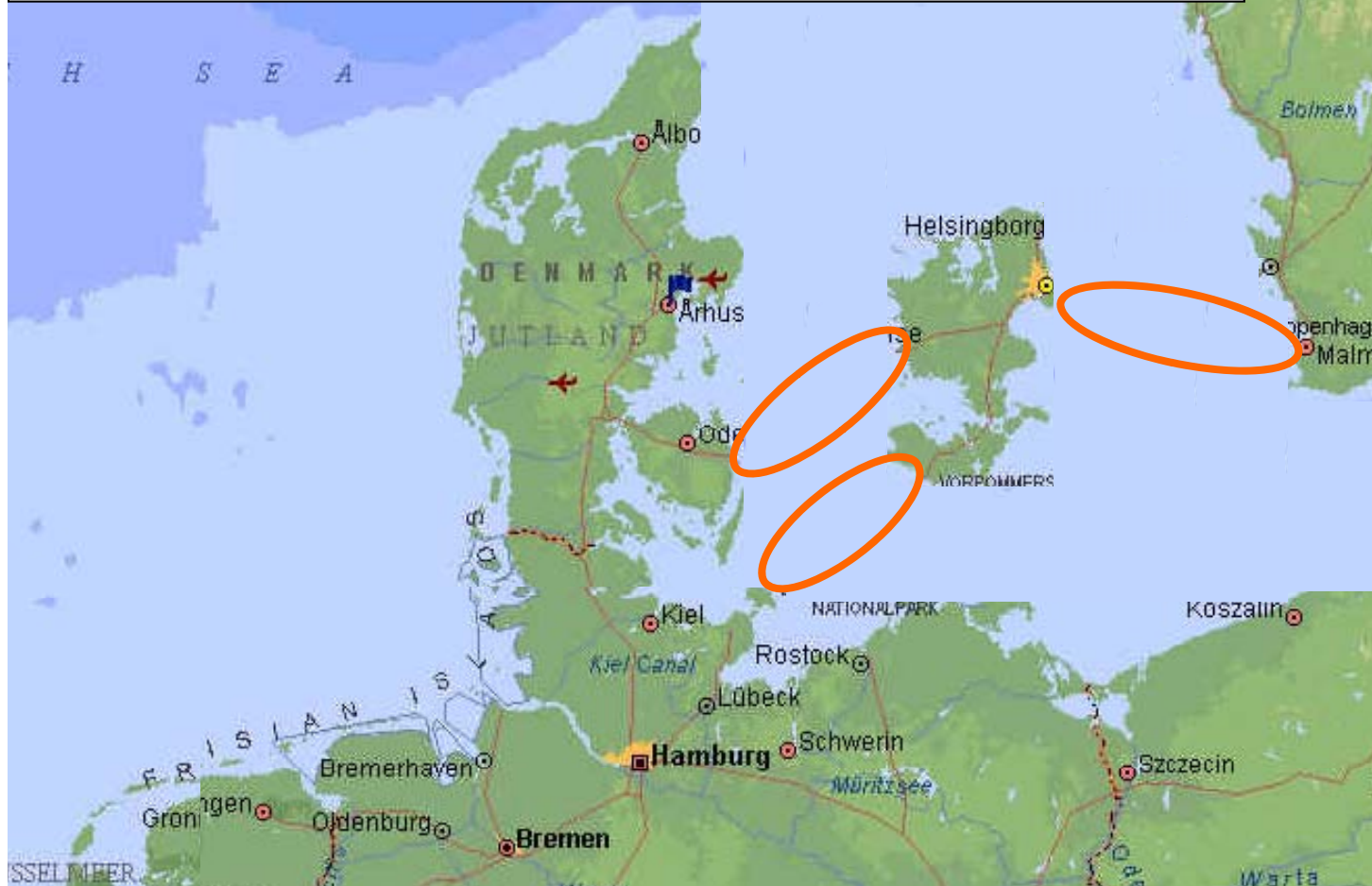
CBS Supply Chain Summit 9. november 2011

**The Fehmarnbelt Corridor
Regional Development perspectives**

**Christian Wichmann Matthiessen
University of Copenhagen**

The South Scandinavian Missing Links

Distance between Sealand and the European continent indicated as time



Source:
The European
Round Table of
Industrialists
1989

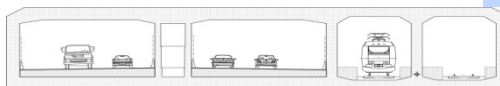
The South Scandinavian Links

2000

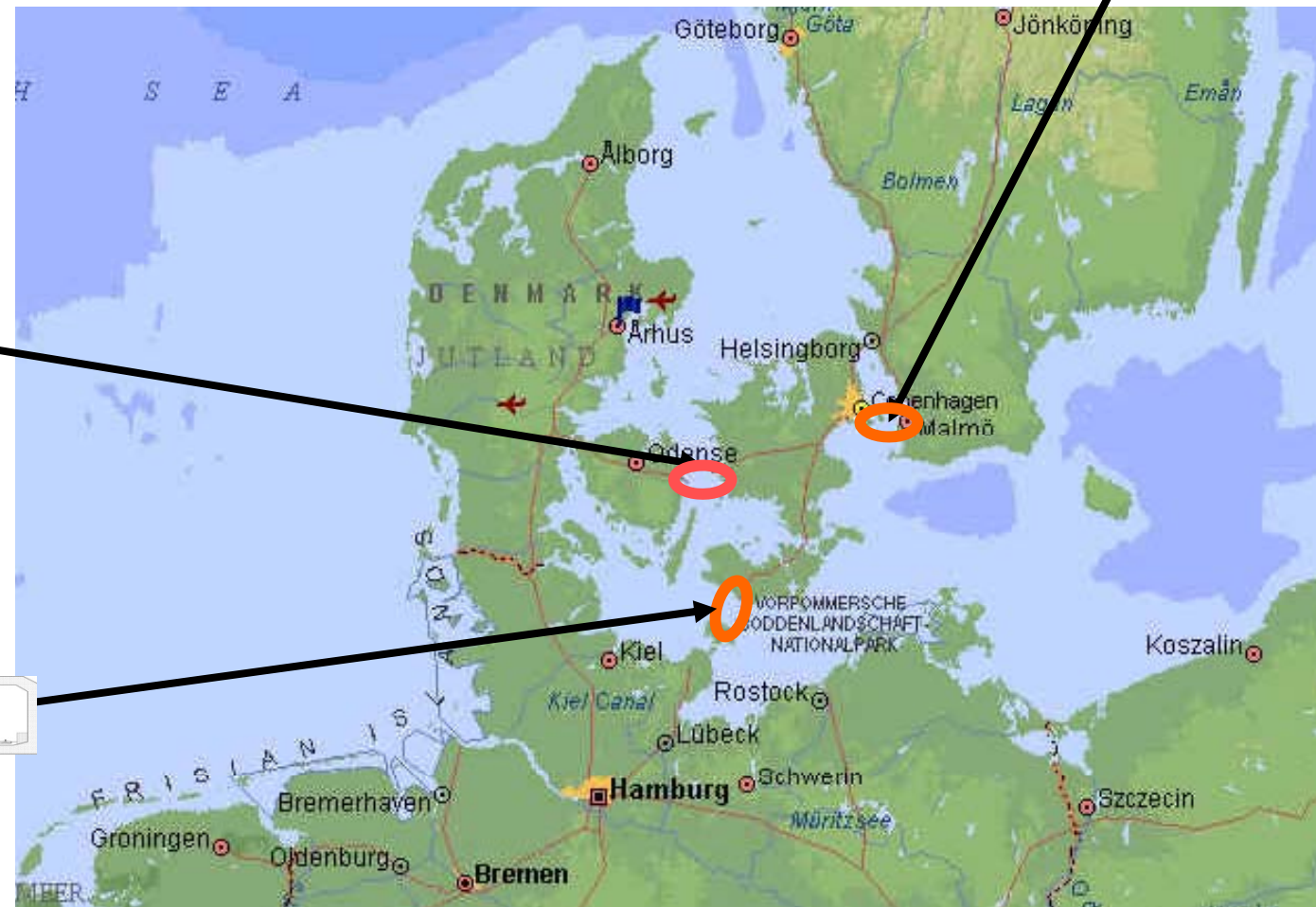
Distance between Sealand and the European continent indicated as kilometres






1997/1998



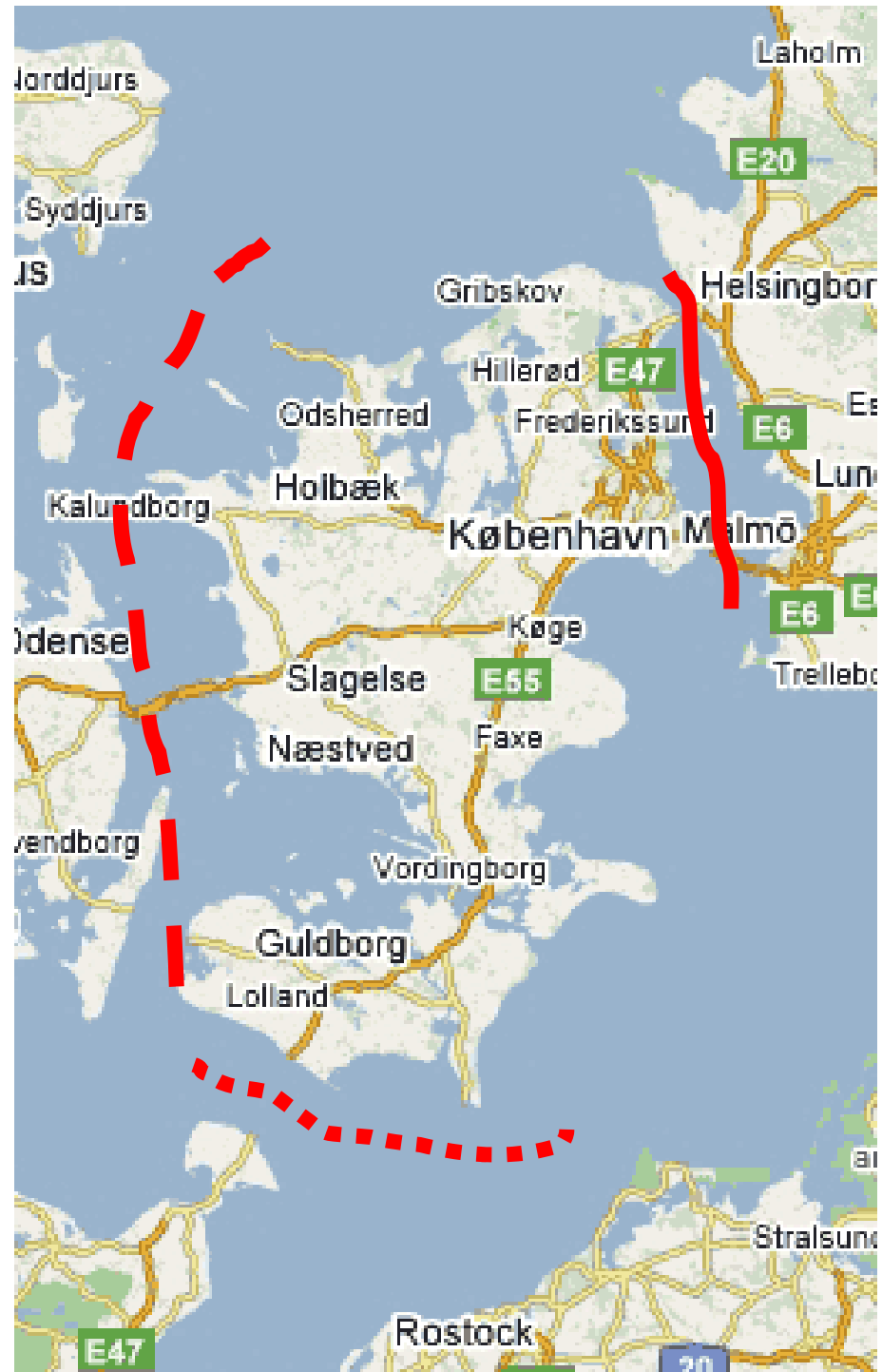
2020



Traffic crossing the lines

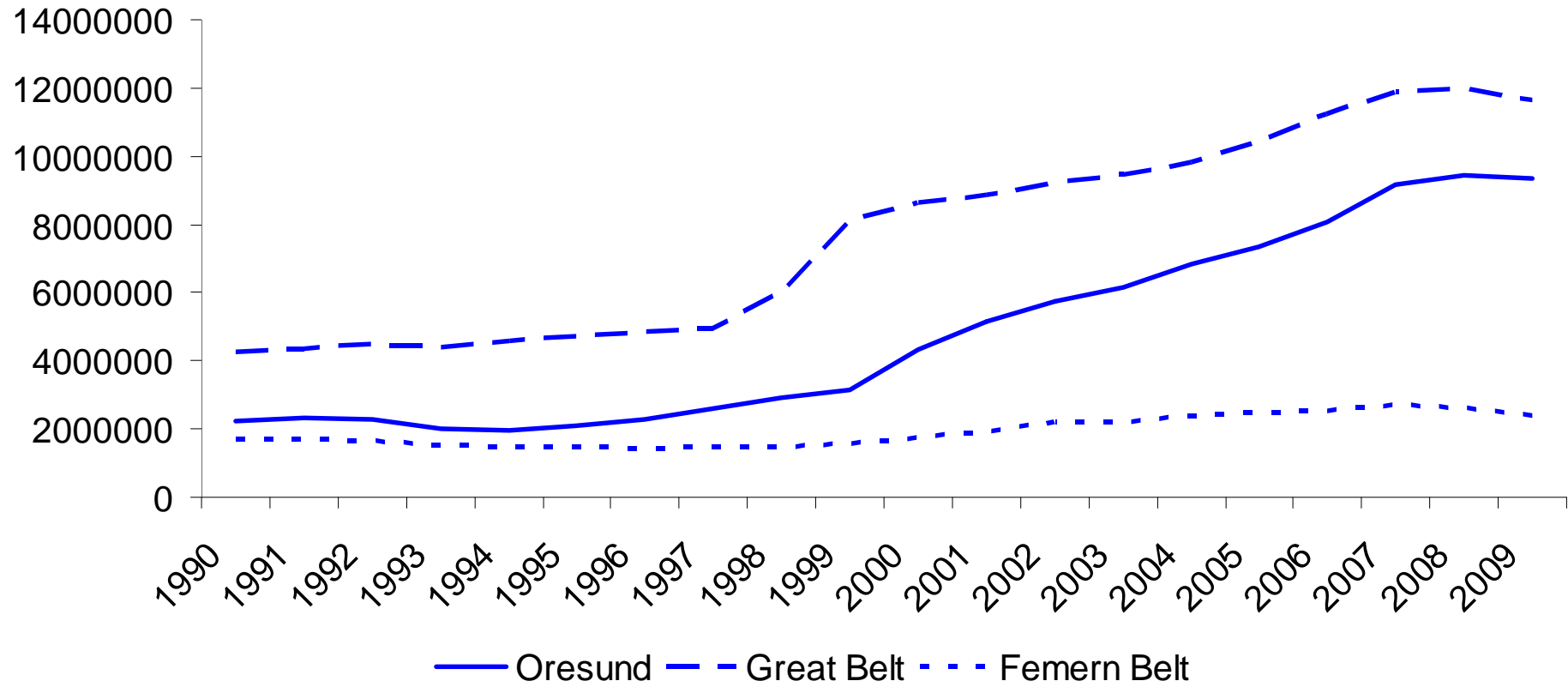
- Great Belt 
- Öresund 
- Fehmarnbelt 

Traffic on ferries
and bridges



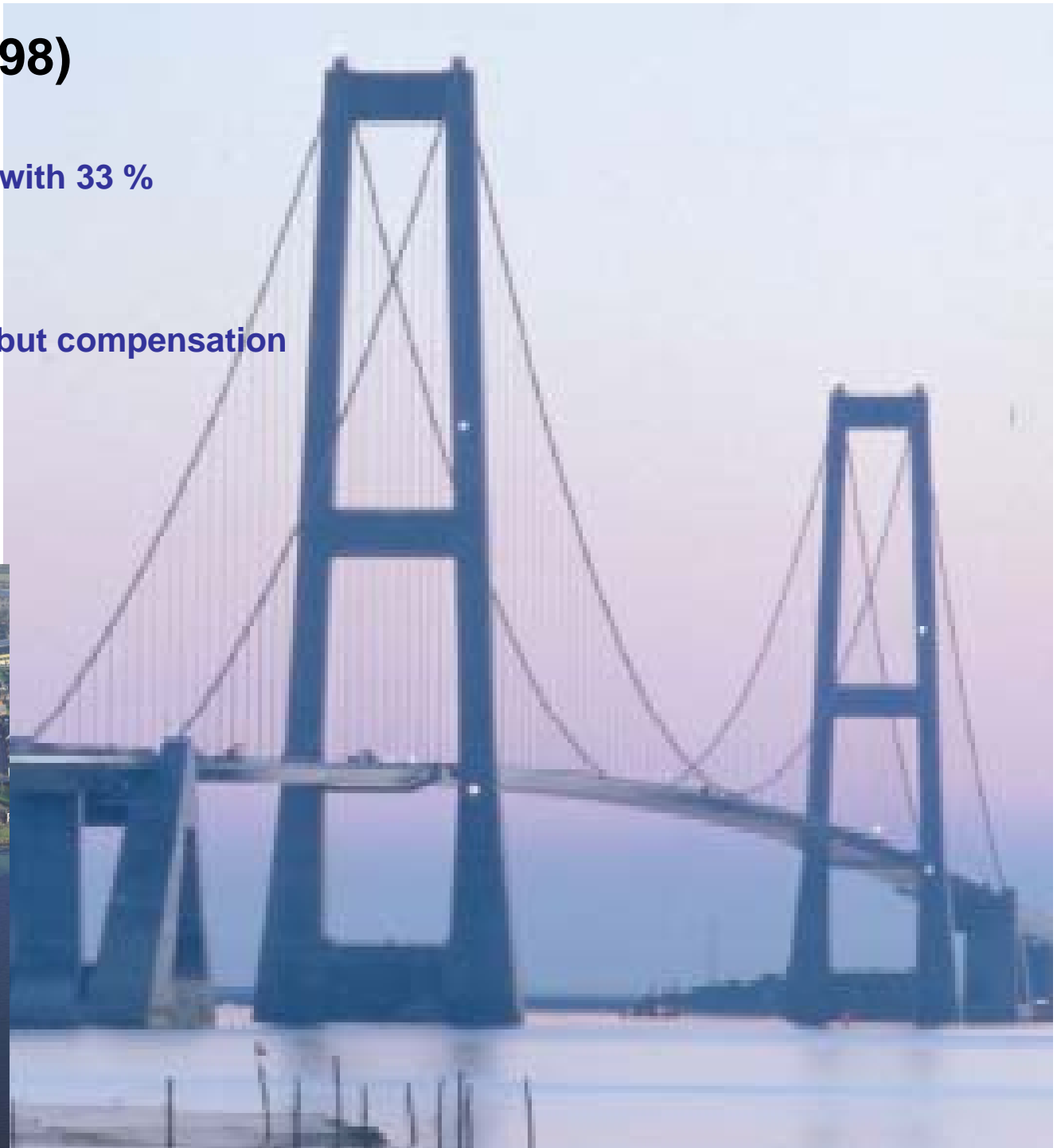
Vehicles !!

Vehicles per year
Ferries and bridges



Great Belt (1997/1998)

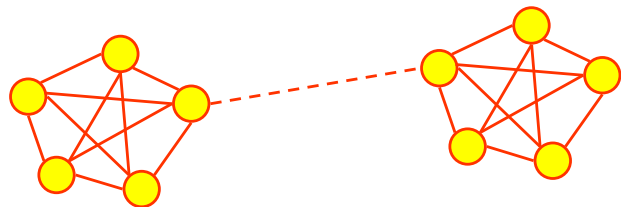
Domestic air traffic reduced with 33 %
Railroad traffic boosted
Danish logistics change
Day-tourism: increase
Ferry towns loose activity – but compensation



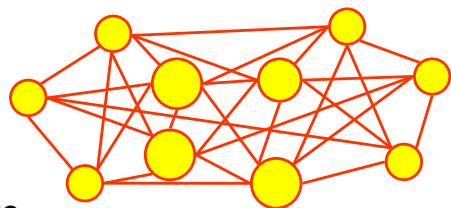
Öresund (2000)

Crosspoint: enforcement
Centrality: metropolitan competition
Integration - economy of scale
New mass = new specialisation

A new metropolitan region:



Pre-bridge



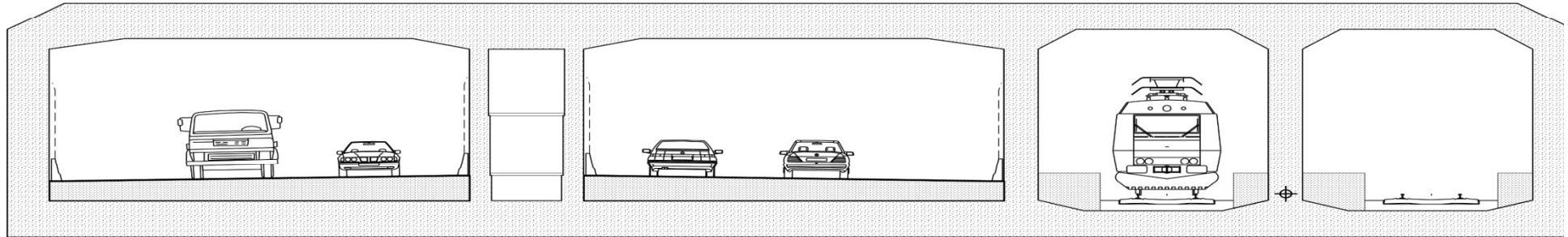
Post-bridge



Fehmarnbelt



Fehmarnbelt Link: Status 2011



What we know!

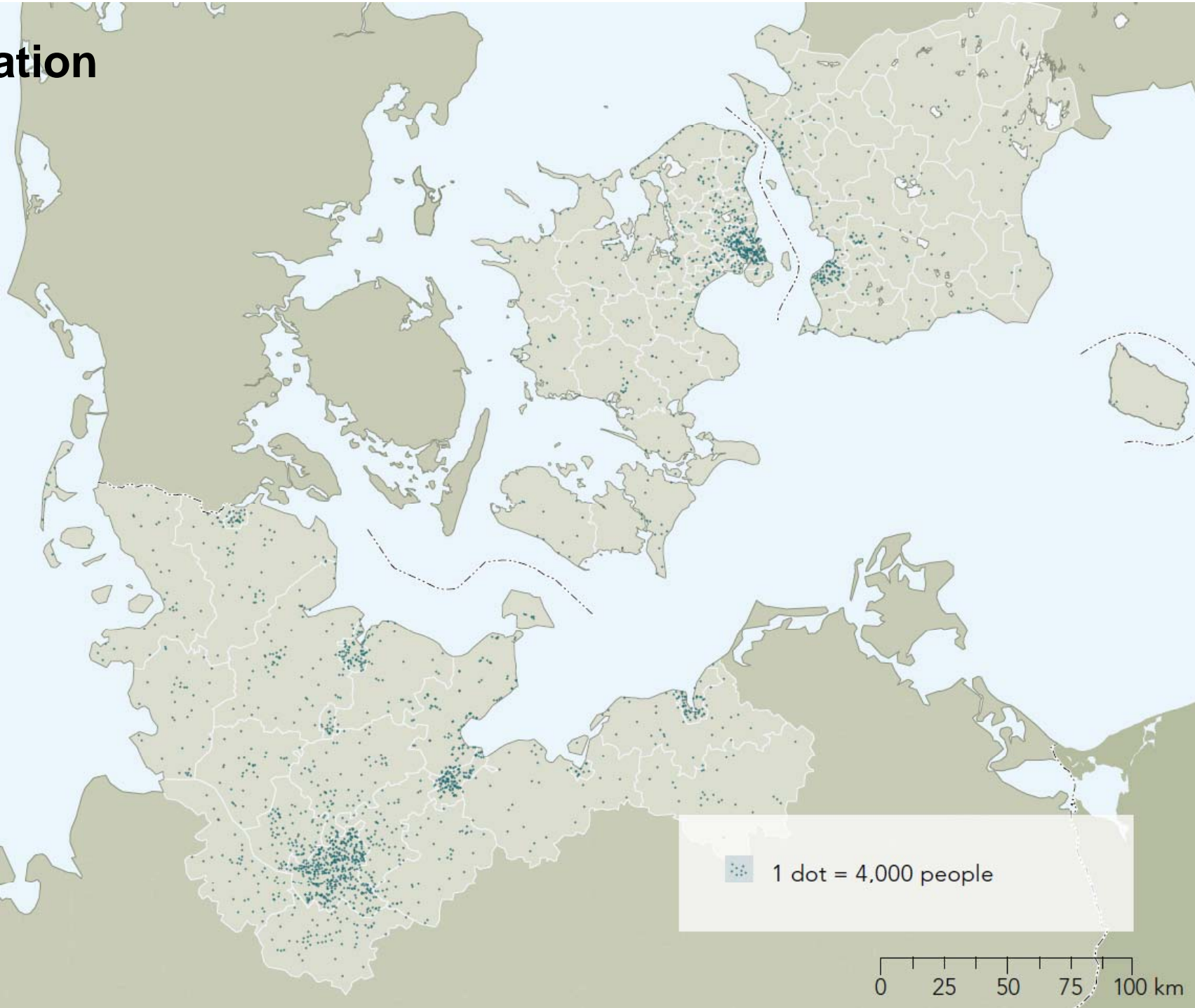
Infrastructural investments

- Fixed link. Price: 4,5 billion Euros
- Direct + indirect jobs 30.000-60.000 man years
- Denmark: railroad electrification and renewal (double track)
Copenhagen to tunnel
Minus: Storstrømmen
- Germany: Motorway from German network to Heiligenhafen Ost
Minus: Fehmarnsund
- Railroad: Lübeck – Tunnel. Ready 2027
Minus : Fehmarnsund

Travel time

- Copenhagen – Hamburg: from 4½ to 3 hours = 33 % improvement
- Rødby – Puttgarten: from 60 to 10 minutes = 500 % improvement

Population



Three analytical perspectives

The large cities

Copenhagen/Öresund-metropolis

Hamburg

Lübeck

Kiel

Rostock

The regions near Fehmarnbelt

Lolland-Falster-South Sealand

North-east Schleswig-Holstein

The corridor

Baltic Sea

Ferry cities

Regions near Fehmarnbelt

Fehmarnbelt neighbouring regions

Summary: potential regional change post fixed link

Lolland-Falster

North-east Schleswig-Holstein

The Copenhagen-Hamburg corridor

Minus - lose employment when:

- Ferries terminate
- Tunnelbuilding finishes

Plus:

- Construction period employment
- Construction period: increasing interaction and cooperation
- Real border region
- Potential mobilisation effects: demand for national active
- Increase in real estate values
- TGV-train: dramatic increase in real estate values – hot spots
- Increasing competitiveness in the CPH-HAM corridor
- Advantage for centres located in the corridor (lift in status)
- New localization pattern: tourism, clusters

Corridor competitiveness boost

The large cities

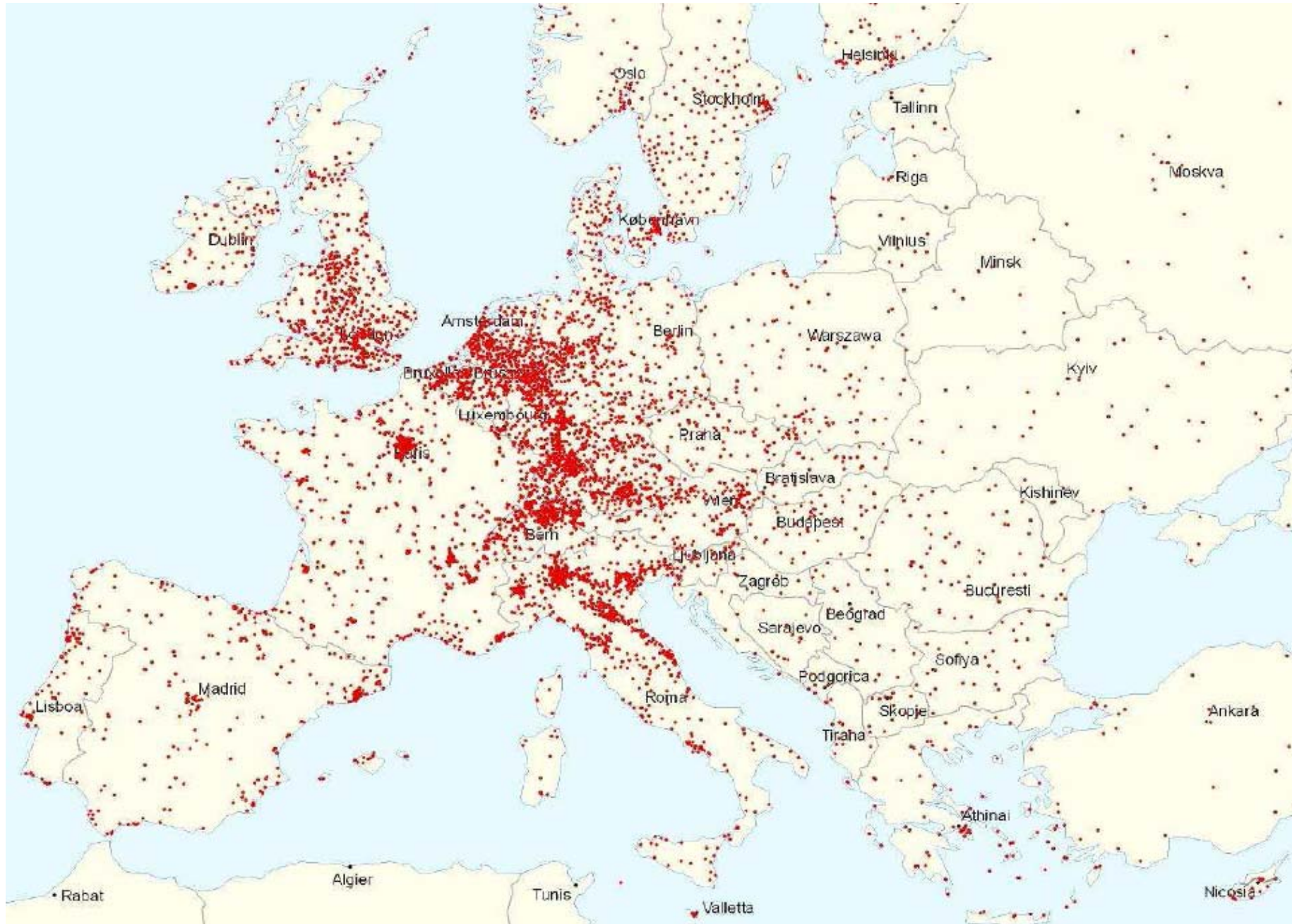
Metropolises



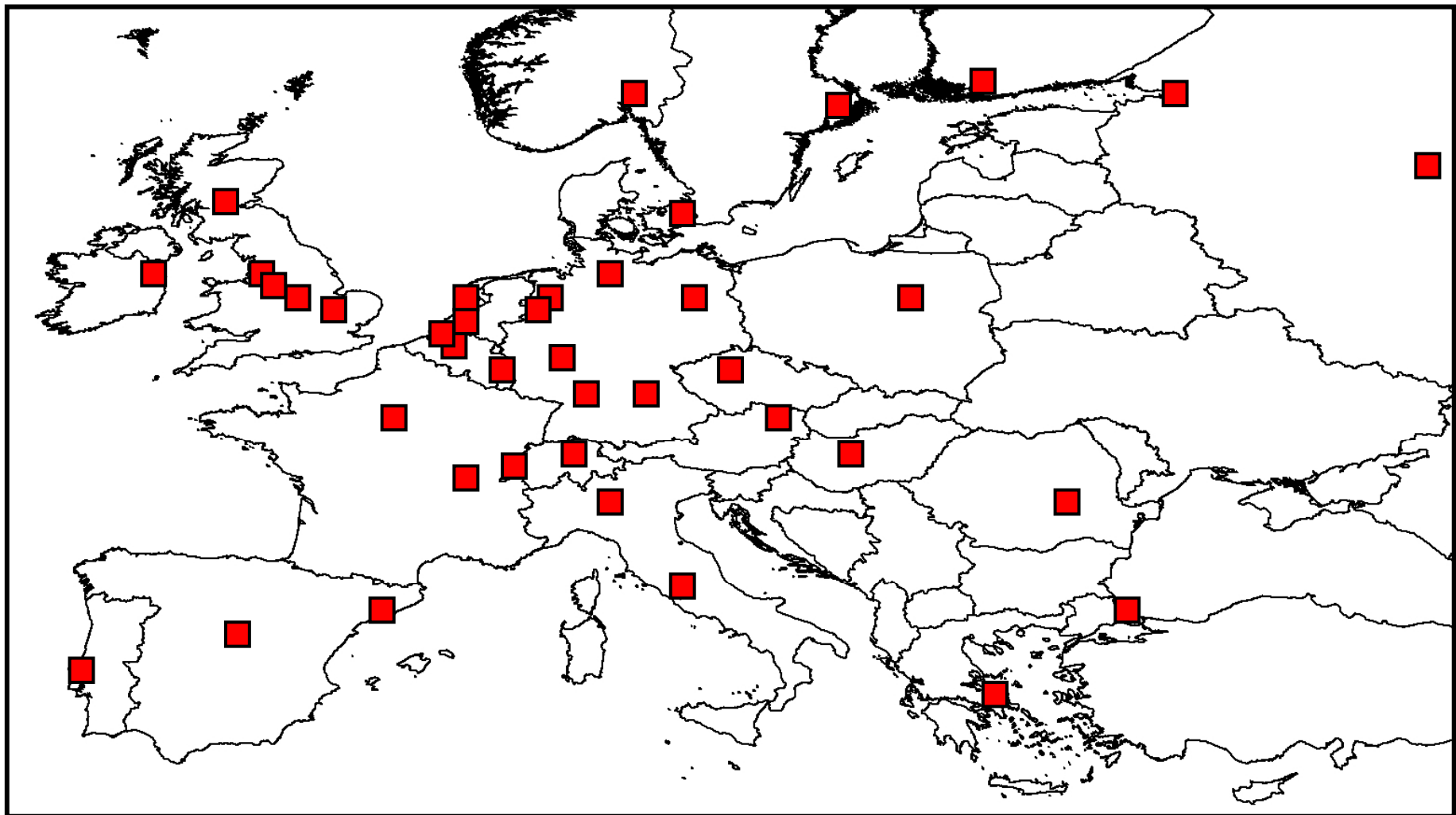
- **Economic power**
- **Center for:**
 - Finance**
 - Culture, entertainment**
 - Services, commerce**
 - Knowledge**
 - Creativity**
- **Node**
 - Transport**
 - Communication**
- **Size, for example measured as:**
 - Population**
 - Income**
 - Product**
 - Interaction**
 - Accessibility**
- **Quality**

Metropolitan functions

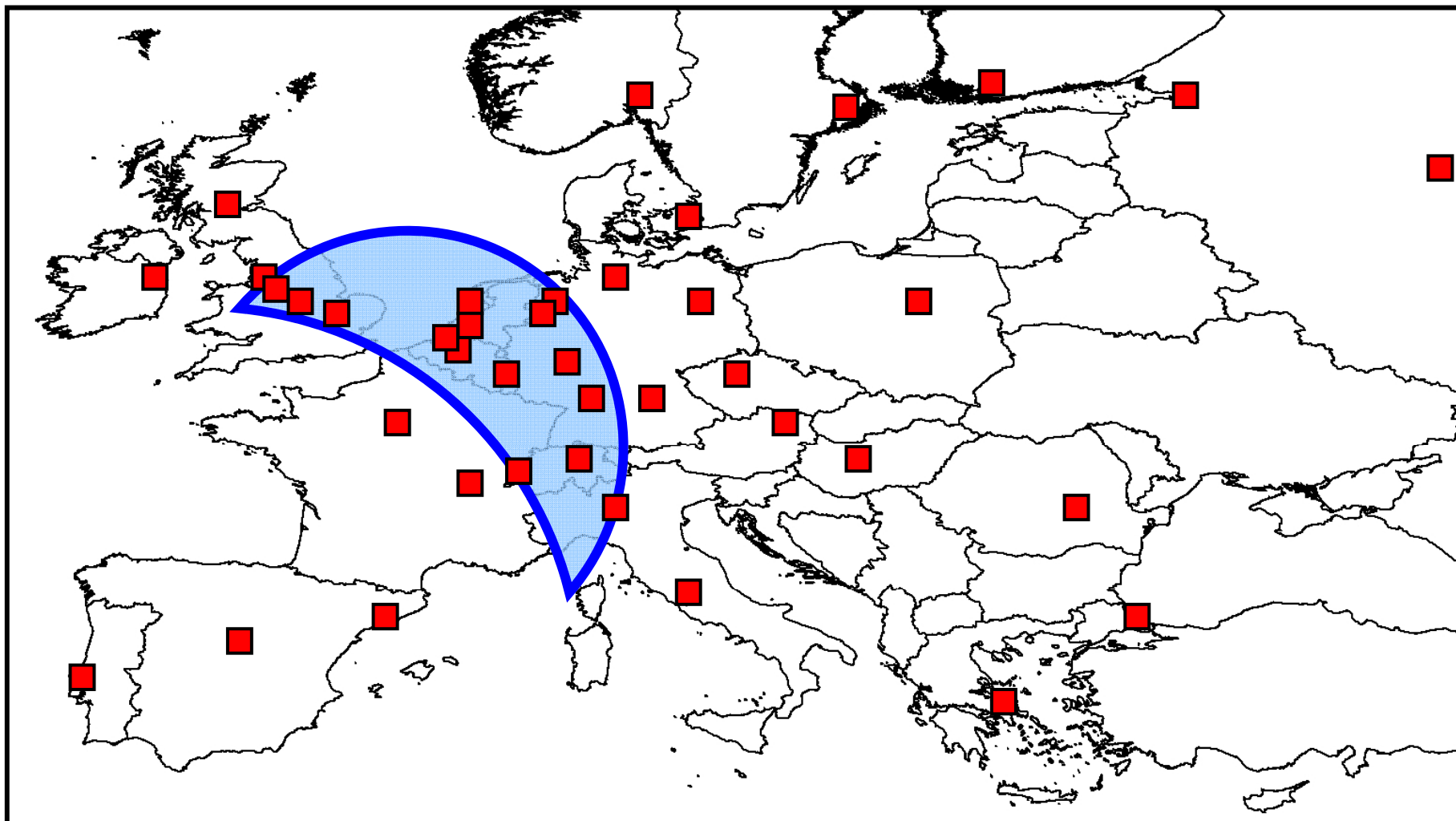
After: Bundesinstitut für Bau-, Stadt- und Raumforschung, 2011



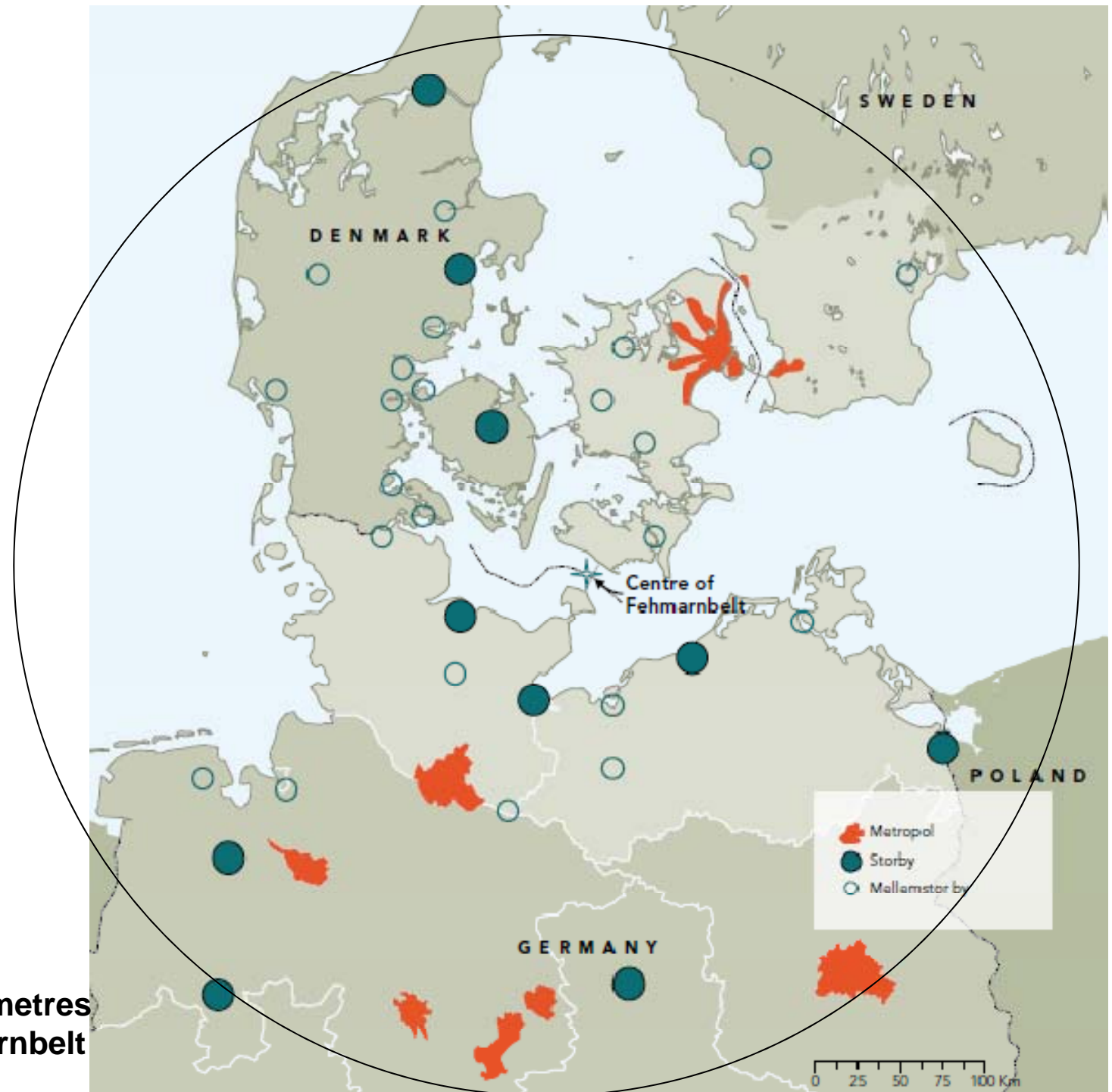
Metropolitan Europe



Metropolitan Europe



Urban system



Cities within 300 kilometres
Distance from Fehmarnbelt

**Cluster cooperation:
Pre- and post fixed Fehmarnbelt link**

Competitive business clusters

- Localised group of units exciding critical mass
- Face to face contact: cooperation, networking, competition
- Focus on industry, technology, supply chains or on knowledge chains
- Similar "life style": demand for specialised factors
- Impact on regional growth
- Resounding impact on regional growth (initiating of new clusters)

Analysis chapter

- To identify competitive business clusters
- To point on excisting clusters
- To point on potential cooperation between clusters
- To point on potential new clusters

**Financial
institutions**

**Government:
National
Regional
Local**

**Leading firms
Supplementary
firms**

**Cluster
management**

**Consulting
institutions**

**Leading
research unit
Research
community**

**Qualification
institutions**

**Intermediate
institutions**

The Øresund Region: Scania, Capital Region, Region Sjælland

Clusters:

- Medicon Valley Alliance
- Øresund Food
- Øresund logistics
- Øresund Information Technology
- Øresund Environment Academy
- Clean technology – green power

Profile areas:

- Design
- Material science/nanotechnology
- Business to business services
- Tourism

Schleswig-Holstein, Hamburg

Clusters:

- Life Science
- Maritime Economy
- Food Industry
- Information Technology
- Micro- and Nanotechnology
- Wind Energy and Renewable Energy
- Chemical Industry (without Pharmacy)
- Tourism

Developing clusters:

- Logistics Cluster
- Aviation

The Fehmarnbelt Region:

Proposed cluster development efforts

Present in all sub-regions:

- Life science/health
- Food
- Information technology (plus the medias)
- Logistics (with a focus on the maritime)
- Wind energy/green technology
- Tourism (inclusive of business tourism)

Partial distributed:

- Finance sector (with business services)
- Cultural sector (medias)
- Airport related activities, civil aviation
- Material science/nanotechnology
- Maritime industries

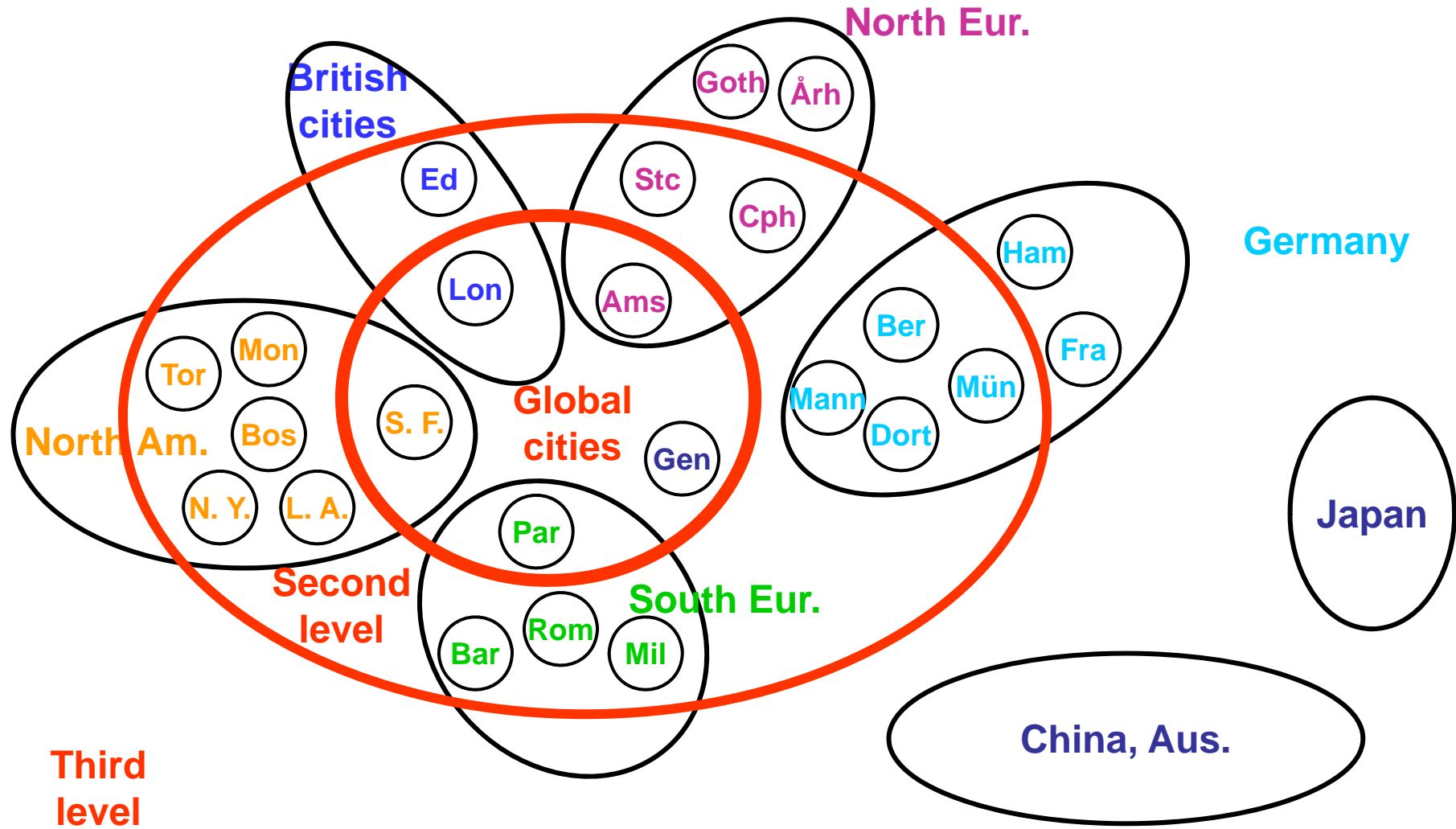
The world of research

- **To identify the structure of research in the Fehmarnbelt region**
- **To set this in Greater regional and European/global context**
- **To point on existing cooperation between clusters**
- **To point on potential cooperation between clusters**
- **To relate the findings to issues of development (European Spallation Source)**
- **To relate to findings on competitive clusters**

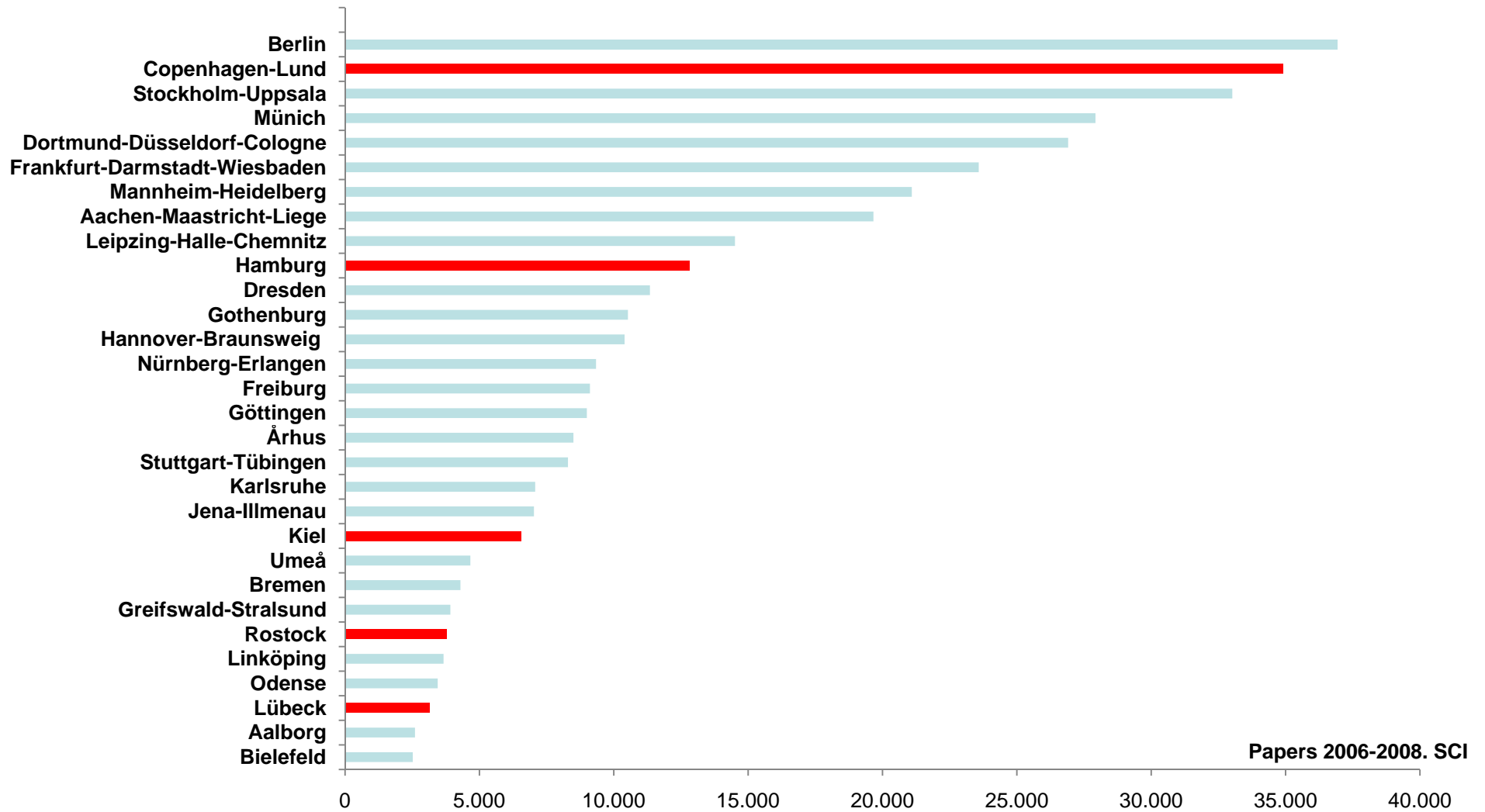
- **The analysis is be based on bibliometric indicators**
(Science citation index registered papers within science, engineering and medicine)

World cities of knowledge

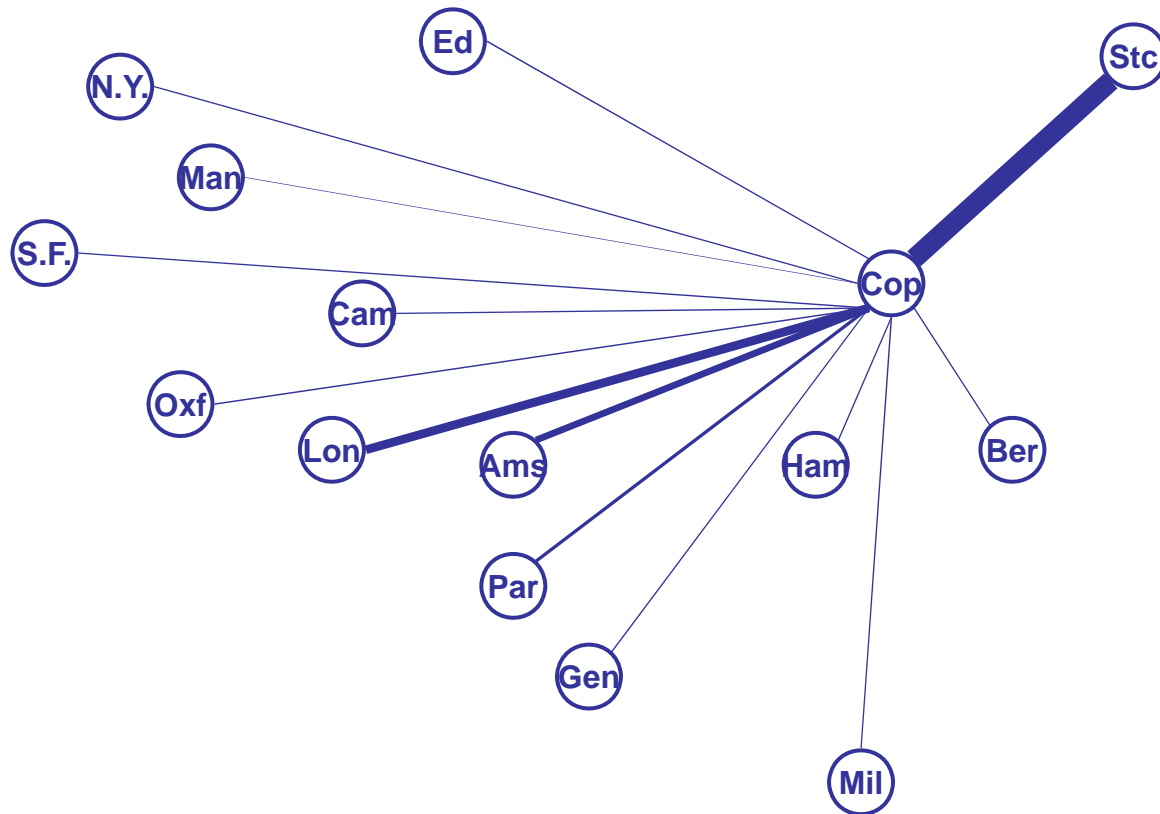
Categorization: Based on volume and international nodality



Research output

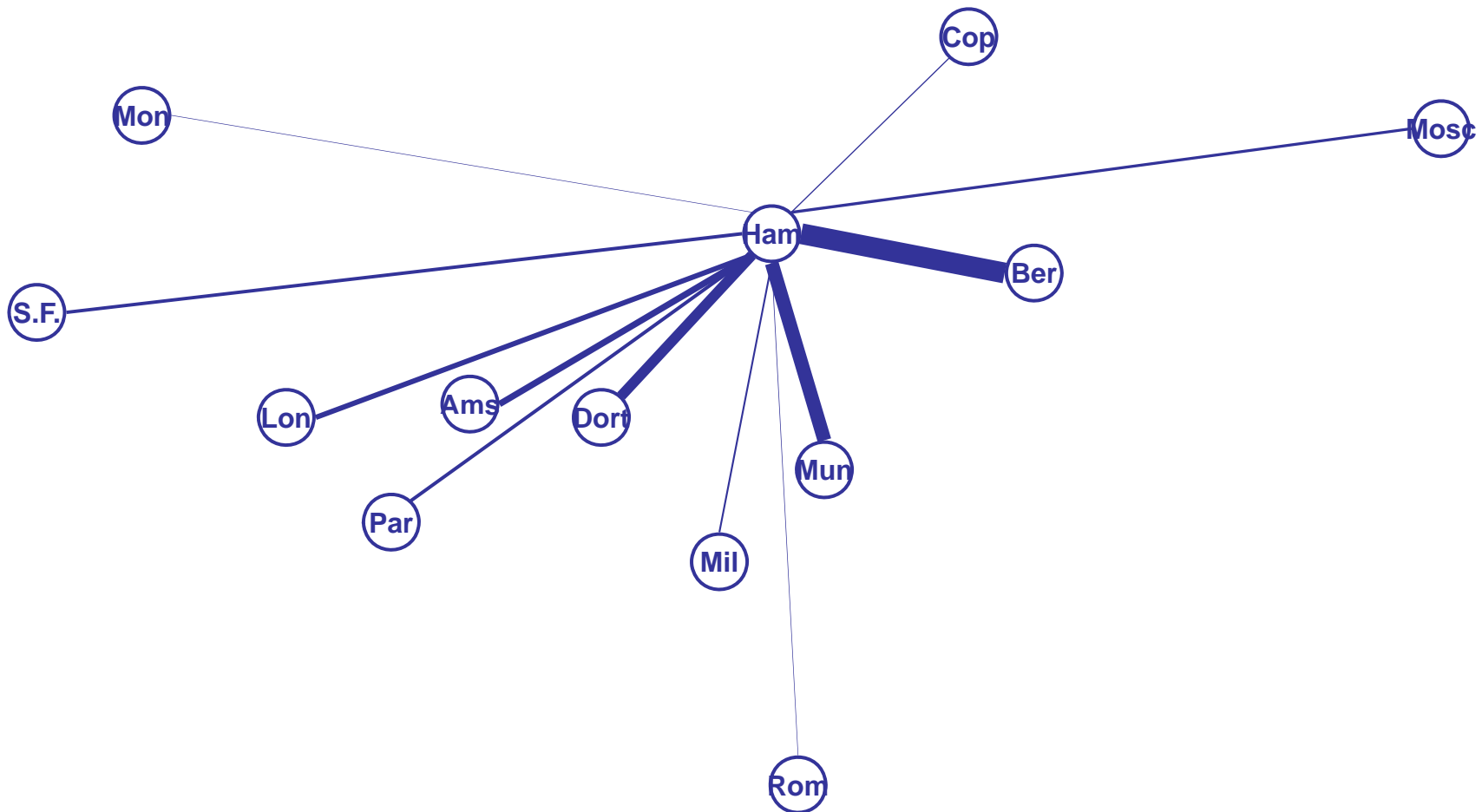


Copenhagen-Lund: important research links (to top-100 research centres)



Hamburg: important research links

(to top-100 research centres)



Categorisation (173 disciplines)

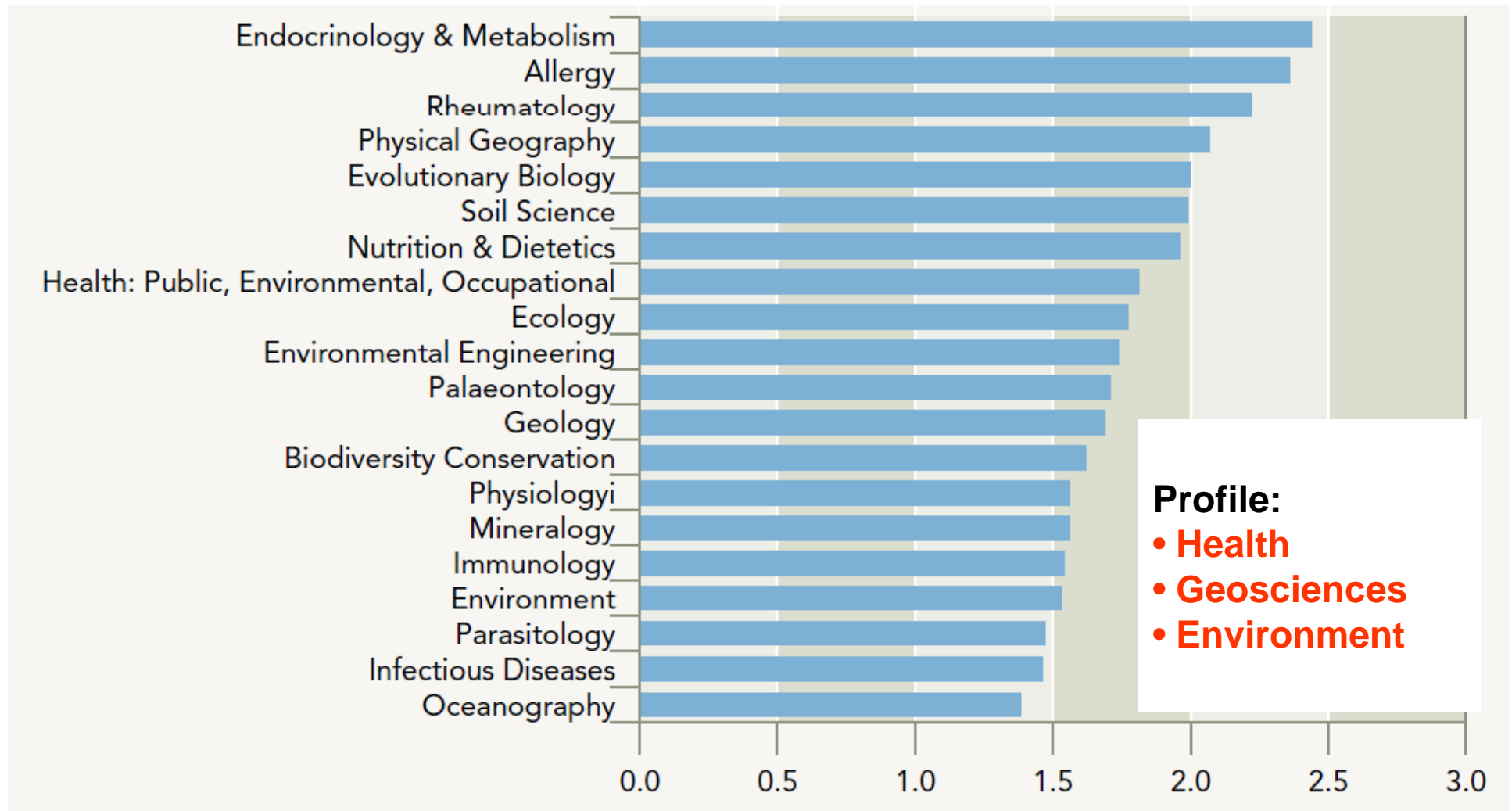
Disciplines (examples):

- **Acoustics**
- **Aerospace engineering**
- **Allergy**
- **Anatomy**
- **Andrology**
- **Anesthesiology**
- **Astronomy**
- **Biochemistry**
- **Biophysics**
- **Biotechnology**
- **Cardiovascular system**
-
-

The Fehmarnbelt Region's research centres: scientific specialisation

Copenhagen-Lund

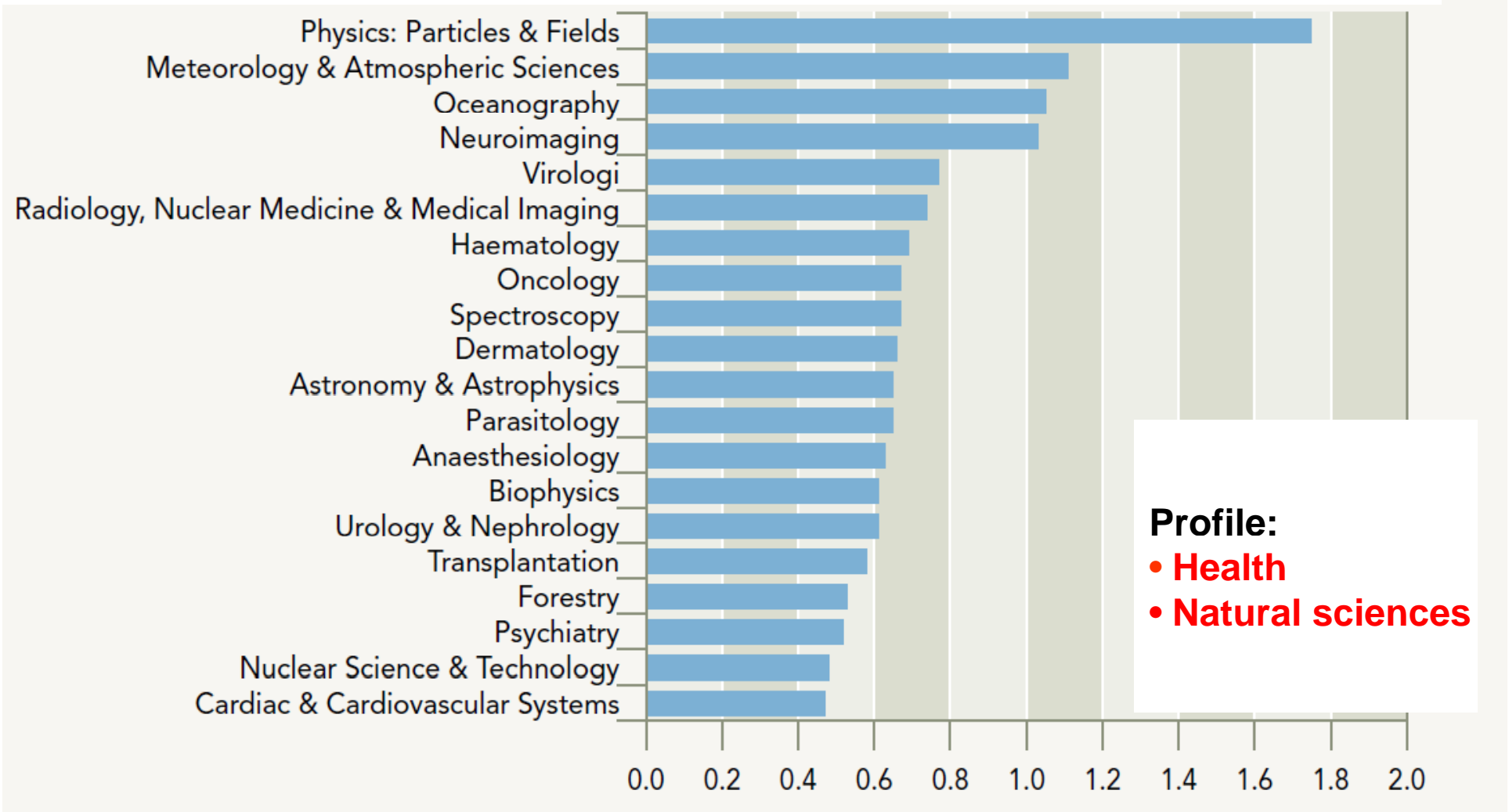
Percent of global output 2006-2008



The Fehmarnbelt Region's research centres: scientific specialisation

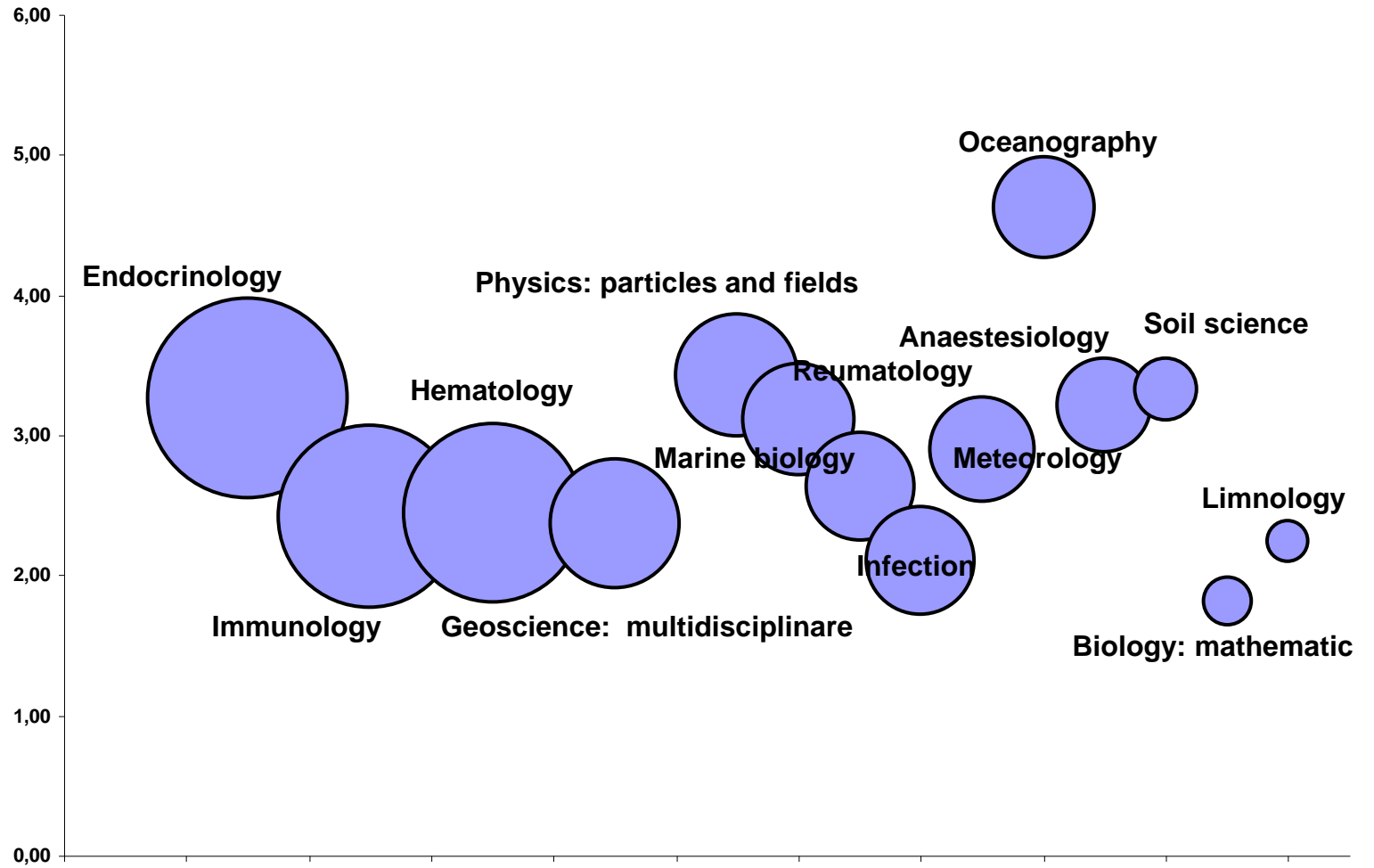
Hamburg

Percent of global output 2006-2008



Strong disciplines in north and south

Percent of global output
2006-2008



Findings: Research:

European leadership:

London, Paris, Amsterdam Region

European second level centres in Denmark, Germany and Sweden:

Berlin, Copenhagen-Lund, Stockholm-Uppsala

European third level centres in the Femernbelt Region:

Hamburg

Regional level:

Kiel, Lübeck, Rostock

Two strong axes of cooperation:

Berlin with Hamburg

Copenhagen-Lund with Stockholm-Uppsala

Focus on developing a new strong axis between Hamburg and Copenhagen-Lund – with Kiel, Lübeck and Rostock as partners also

Potential cooperation disciplines:

Oceanography, marine biology, limnology

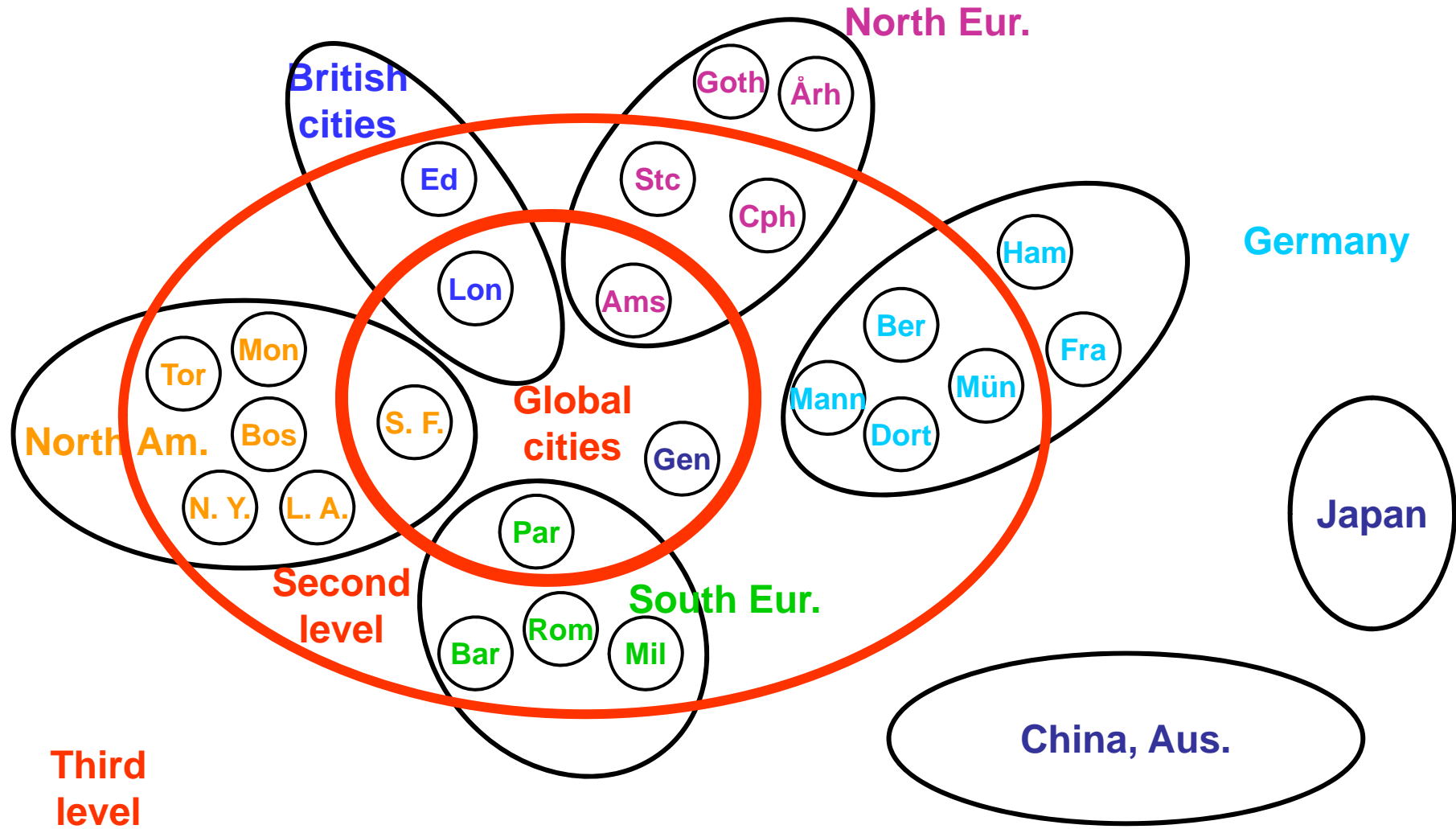
Anaesthesiology, metabolism, immunology, infections, rheumatology, hematology

Soil science, meteorology, atmosphere, geo-sciences

Physics: particles and fields, biology: mathematic

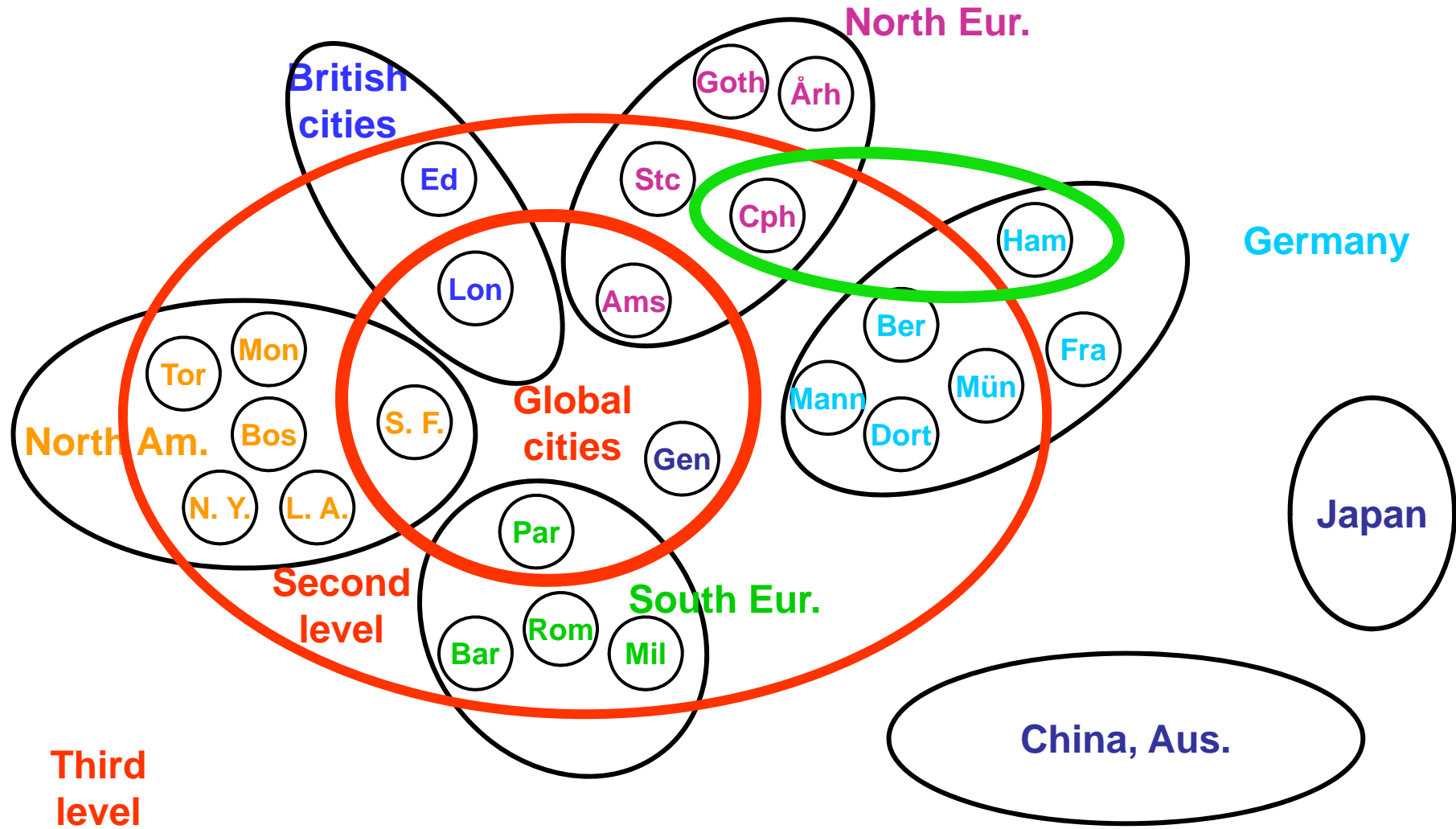
World cities of knowledge

Categorization: Based on volume and international nodality



World cities of knowledge

New metropolitan axis



The large centres

Summary: potential regional change

Post fixed link

Copenhagen/Öresund-city

Hamburg

Lübeck

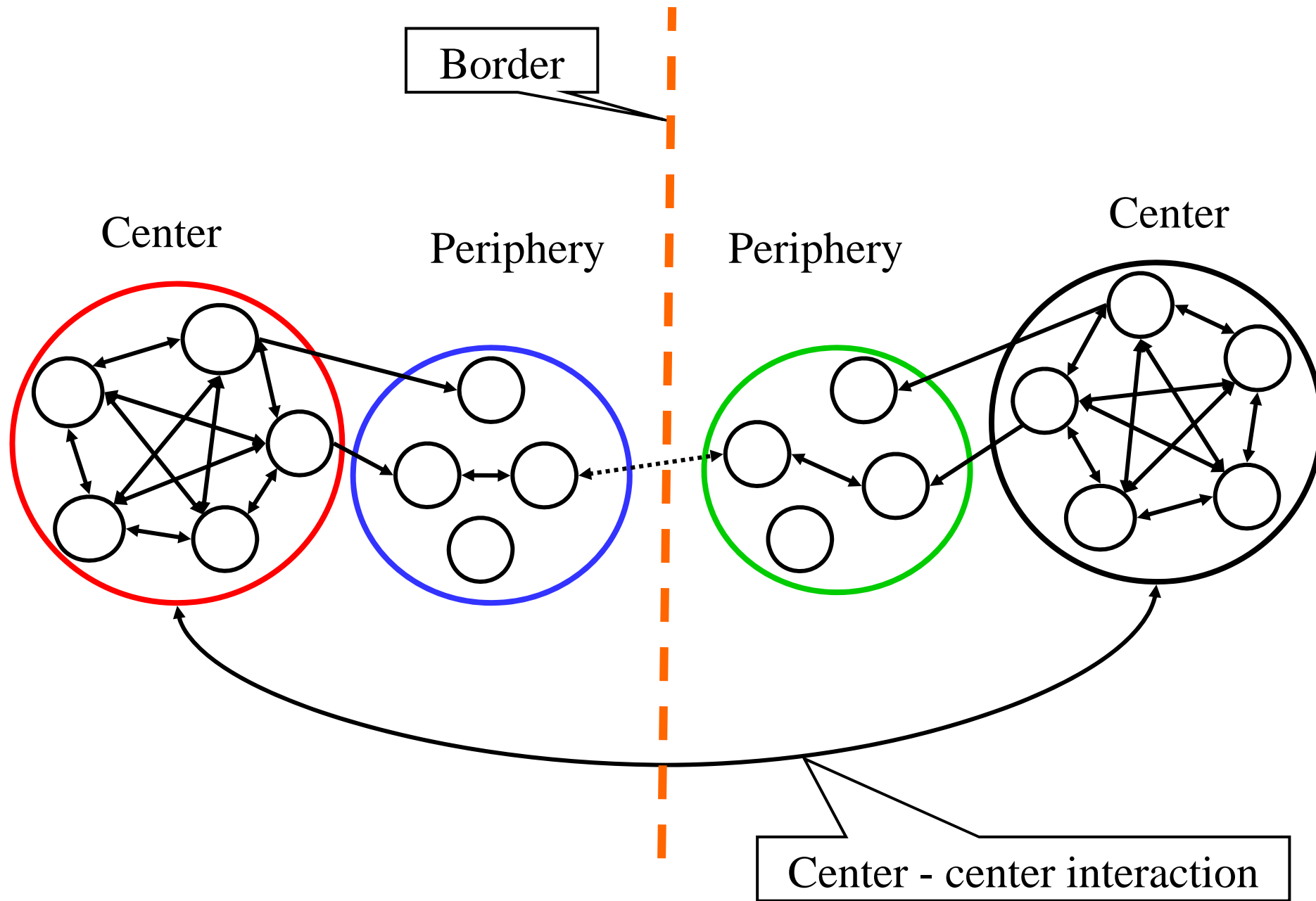
Kiel

Rostock

New dynamics:

- **Crosspoint location enforcement**
- **European high speed railroad system**
- **International metropolitan competition**
- **Metropolitan cooperation: Hamburg-Öresund City clusters, research, culture**

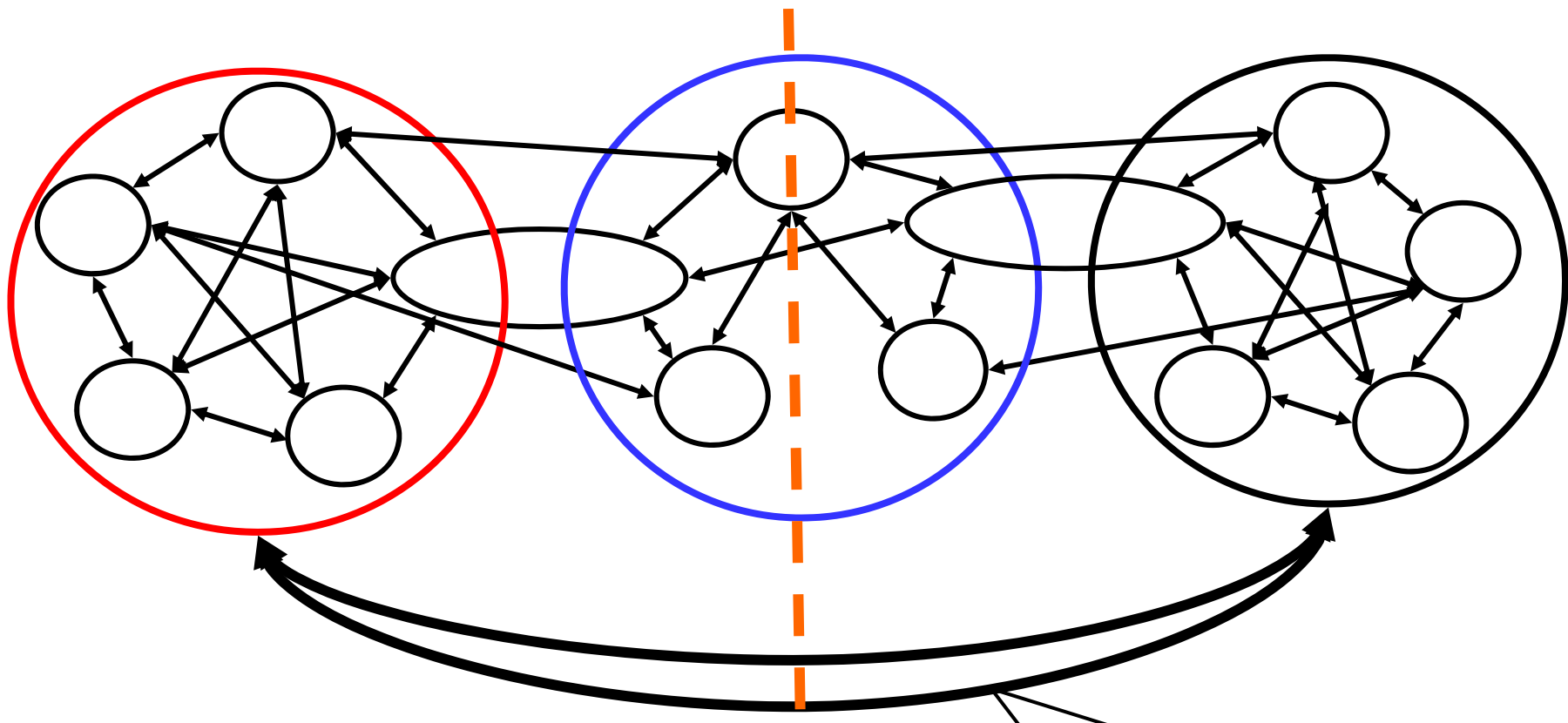
Regional setup
Pre- and post fixed Fehmarnbelt link



Center

"Real" border region

Center

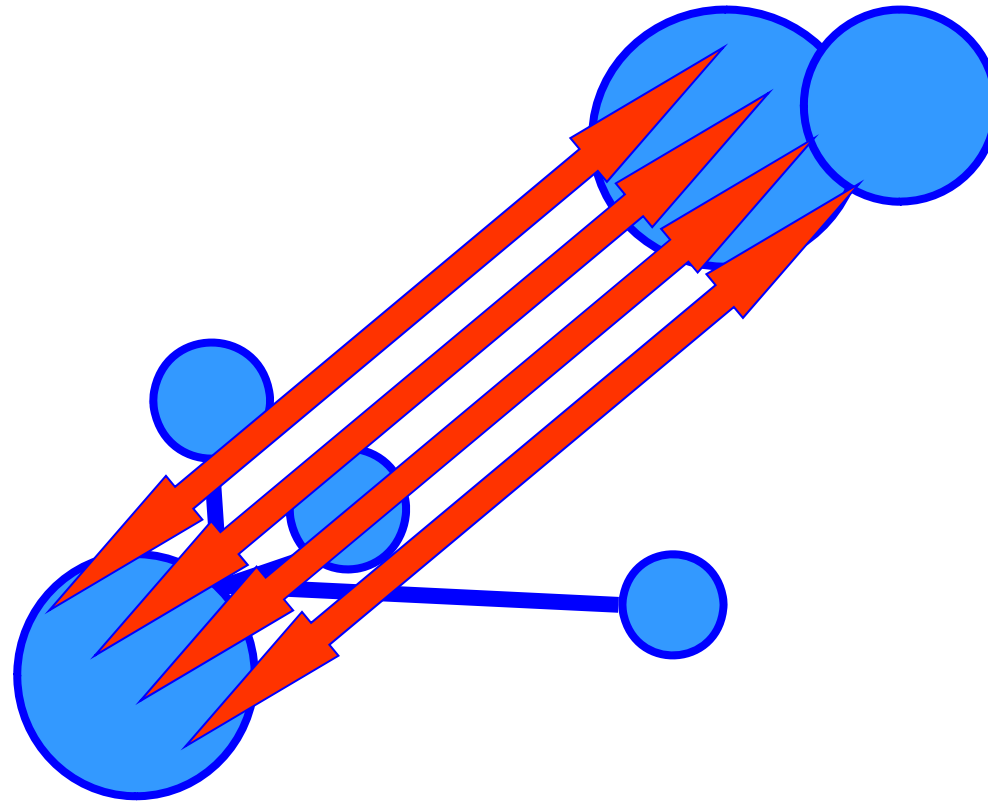


Border

Center - center interaction

Strategic goal:

- **New North European powerhouse based on new infrastructure and new internal networks**



Presentation based on:

Matthiessen & Worm (editors):

**The Fehmarnbelt Fixed Link:
Regional Development
Perspectives**

Syddansk Universitetsforlag 2011



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The Fehmarnbelt Fixed Link:
Regional Development
Perspectives

Syddansk Uni

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REGIONAL
DEVELOPMENT
PERSPECTIVES

Thankyou

