

# Urban Megatrends and Challenges.

An JPI Urban Europe Study.

*Johannes Riegler*  
*johannes.riegler@ait.ac.at*

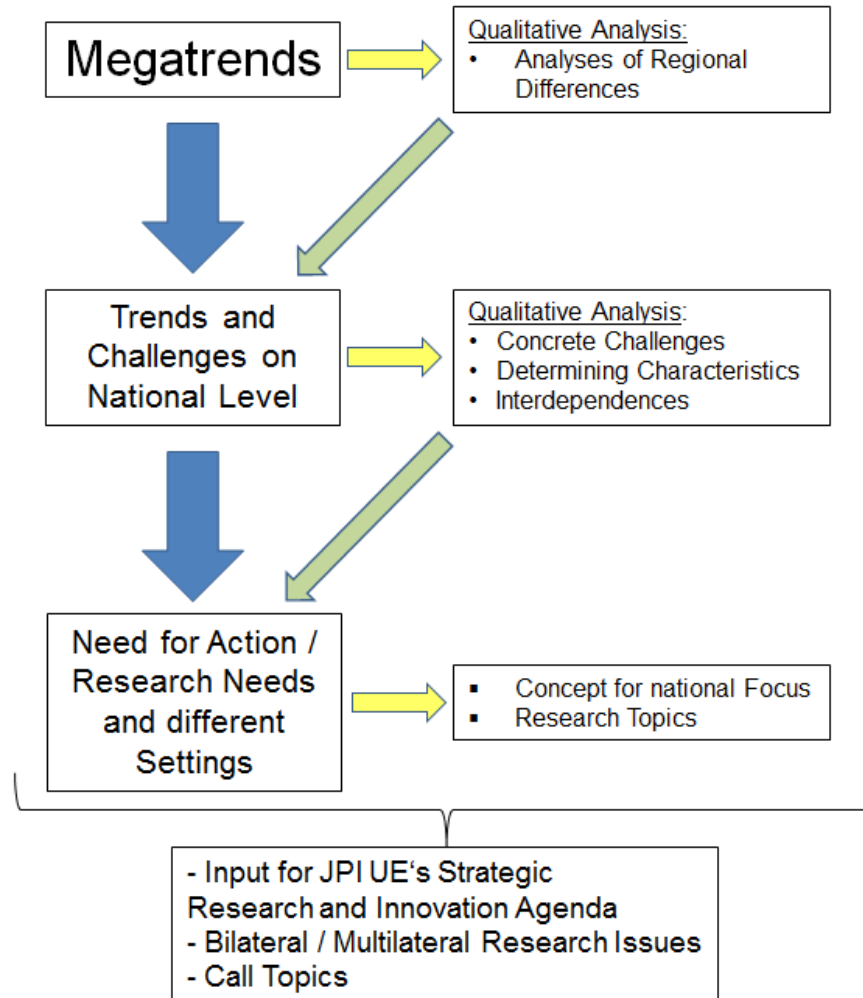
*Real Corp 2013, Rome*  
*21<sup>st</sup> of May, 2013*

## Purpose of the Study.

The Study aimed at...

- ... Identifying and understanding the challenges stemming from megatrends for European Urban Areas.
- ... creating a differentiated perspective of challenges for urban areas across Europe taking into account regional disparities.
- ... highlighting the complex connections between the challenges and megatrends .
- ... identifying research and innovation needs.
- ... generating input for the JPI UE Strategic Research and Innovation Agenda.

# Approaching Urban Megatrends.

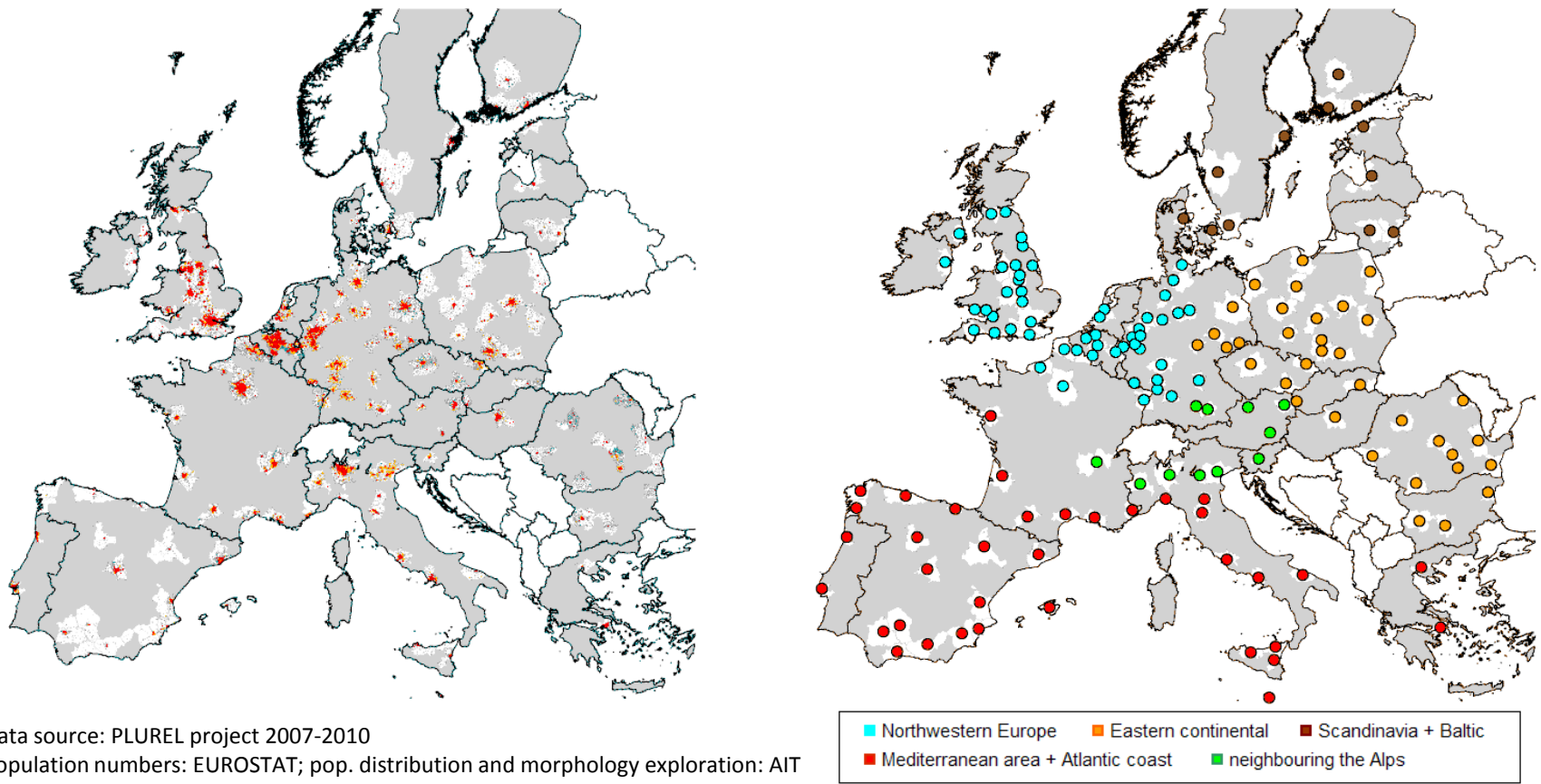


## Quantitative analysis of Urban Megatrends.

- ... for a common understanding and baseline for further investigations.
- ... illustrates a **Europe-wide image** of trends and challenges influencing urban areas in the coming decades.
- **148 city regions** were part of this analyses.
- **Data Sources: EUROSTAT** (baseline data), **IIASA** (demography), **University Paris 1** (economy), **University of Edinburgh** (land use), **AIT** (intraregional distribution in the urban regions)

# Quantitative analyses of Urban Megatrends.

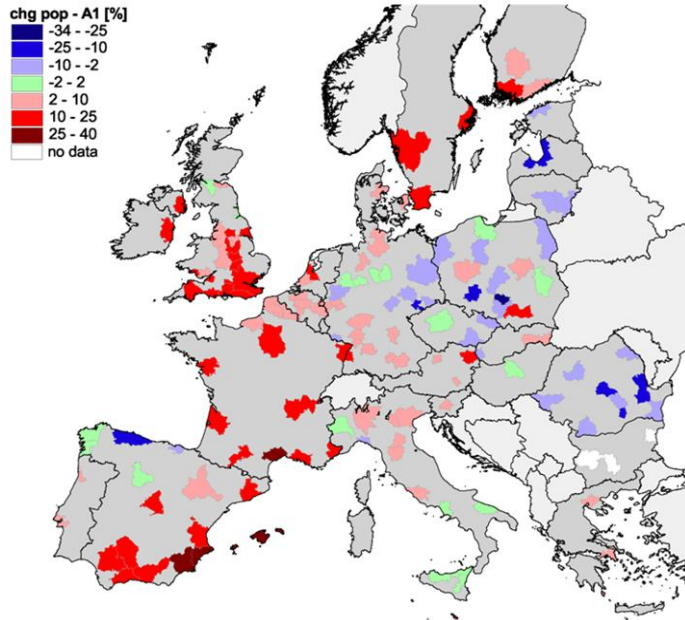
- 148 city regions - five city region types (defined by geographical location)



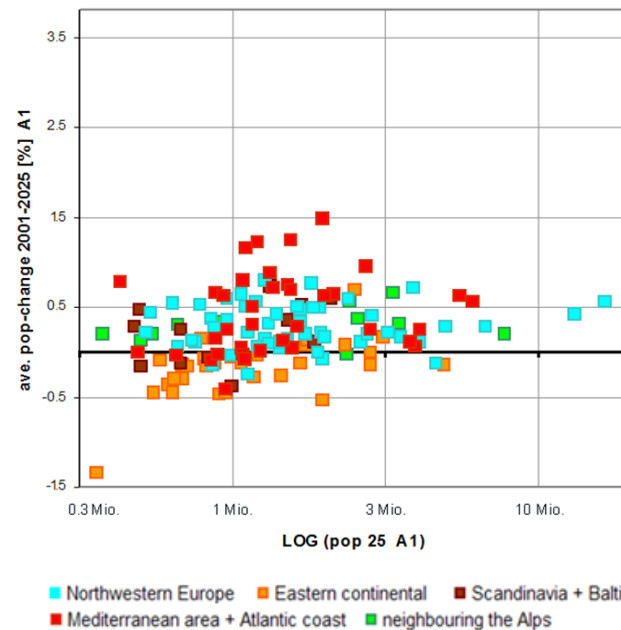
Data source: PLUREL project 2007-2010  
Population numbers: EUROSTAT; pop. distribution and morphology exploration: AIT

# Demography: Decreasing Population in the East. Growing urban regions in the West.

2001- 2025



**Figure:** City regions' future population dynamics – 2025 relative change of population since 2001 (Data: PLUREL project, IIASA, Univ. Edinburgh, AIT)



**Figure:** City regions' future population dynamics – 2025 relative change of population since 2001 (vertical axis) against city size ( horizontal axis - population numbers as log-scale). (Data: PLUREL project, IIASA, AIT)



# Demography: The Share of elderly (60+) increases throughout Europe.

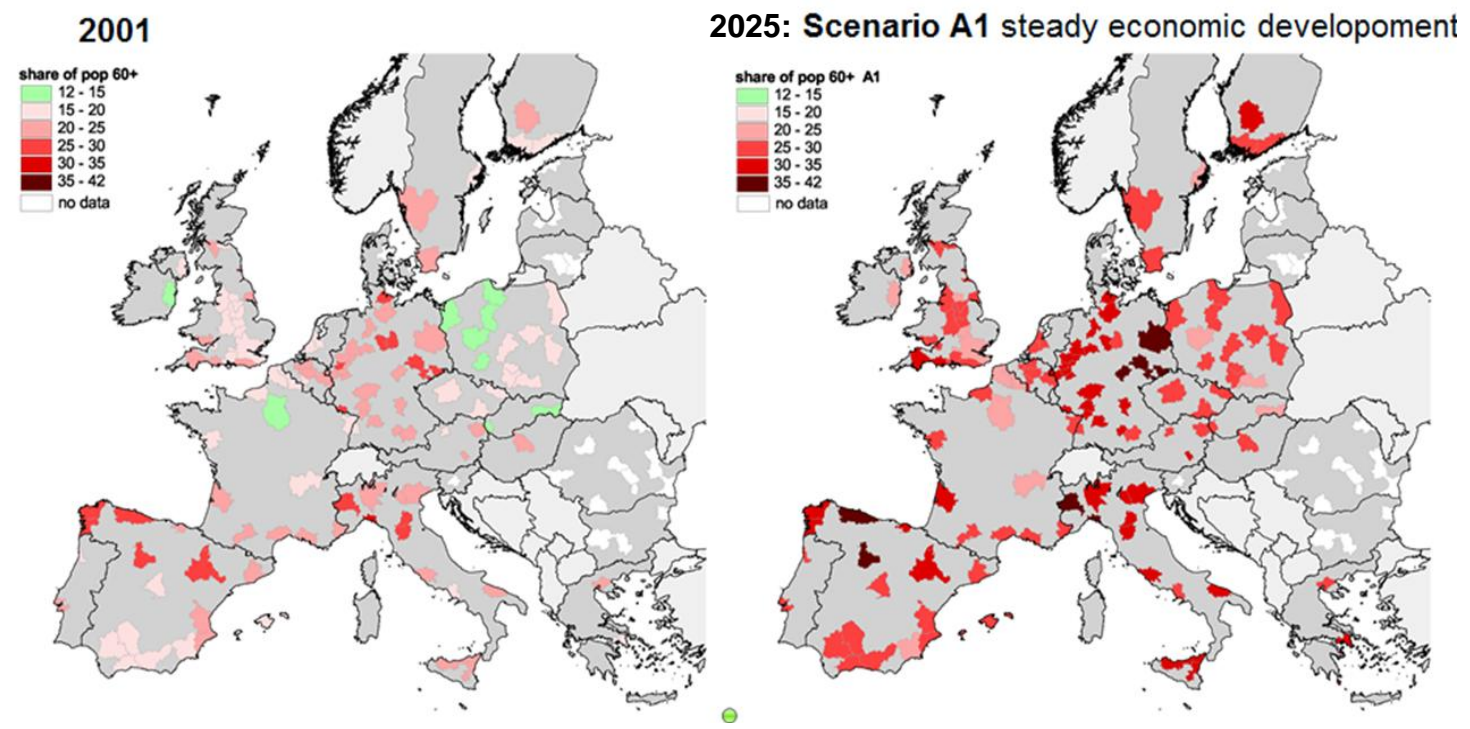


Figure: City regions' share of the 60+ age cohort 2001 and 2025 (Scenario A1) (Data: PLUREL project, EUROSTAT, IIASA, AIT)

# Economic Development: The GDP per capita shows a distinct east-west and south-north upward gradient.

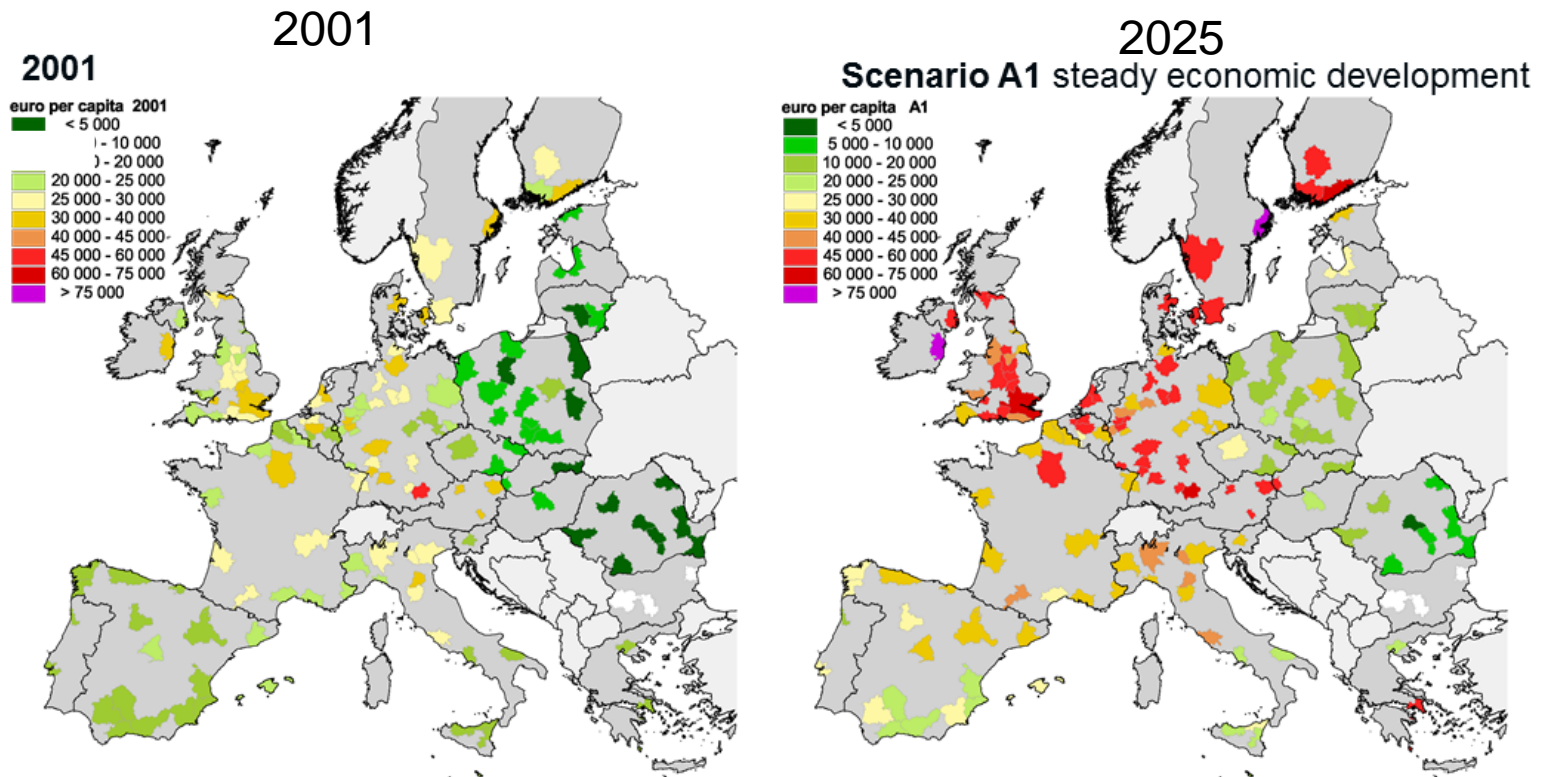
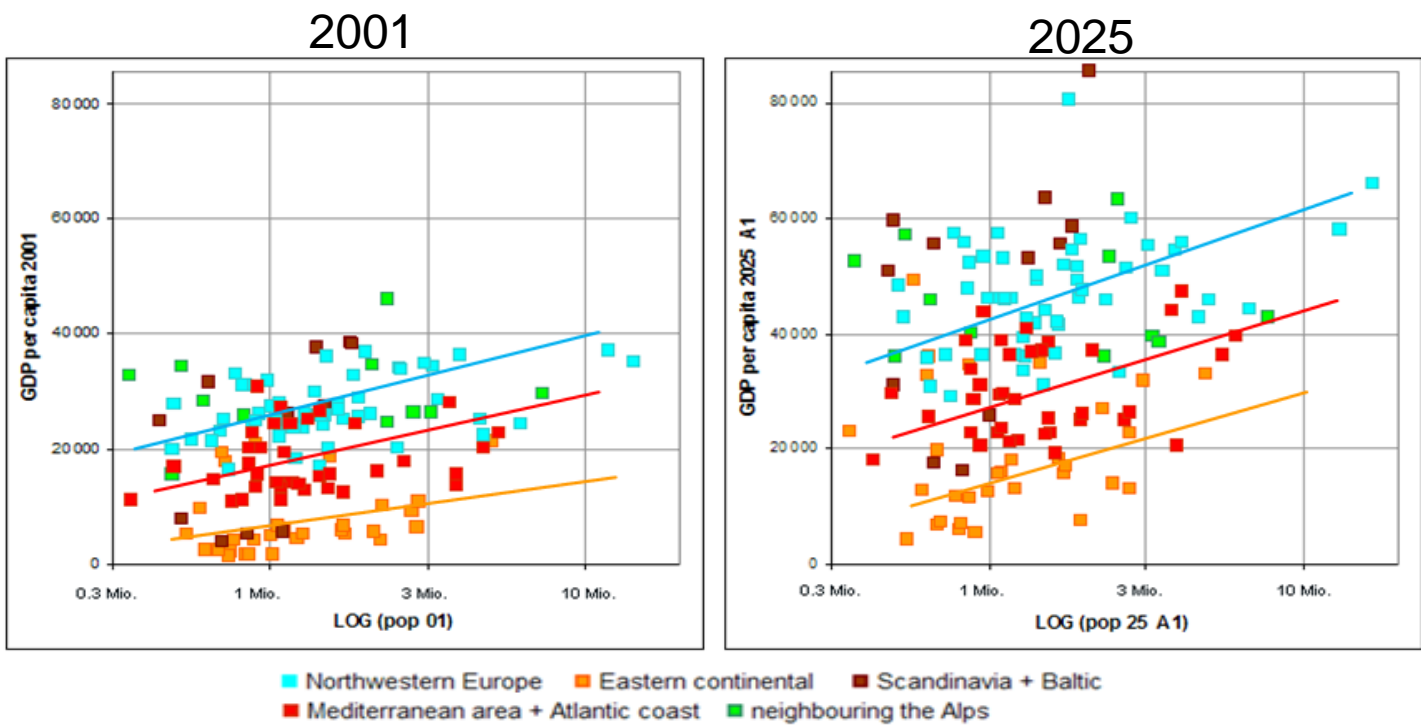


Figure: City regions' GDP per capita 2001 and 2025, Scenario A1) (Data: PLUREL project, EUROSTAT, Boitier et al., AIT)



# Economic Development: The GDP per capita shows a distinct east-west and south-north upward gradient.



**Figure:** City regions' GDP per capita (vertical axe) against city size (horizontal axe, log-scale) - 2001 and 2025, Scenario A1), estimated trend lines for the sub-groups Eastern-Continental, Mediterranean, North-western (Data: PLUREL project, EUROSTAT, Boitier et al., AIT)

# Climate Change.

- The increase in temperature will concentrate on Southern & Eastern Continental regions & those neighbouring the Alps
- No. of Heat Days and Tropic Nights will increase rapidly mainly in Southern, and Eastern Continental regions.

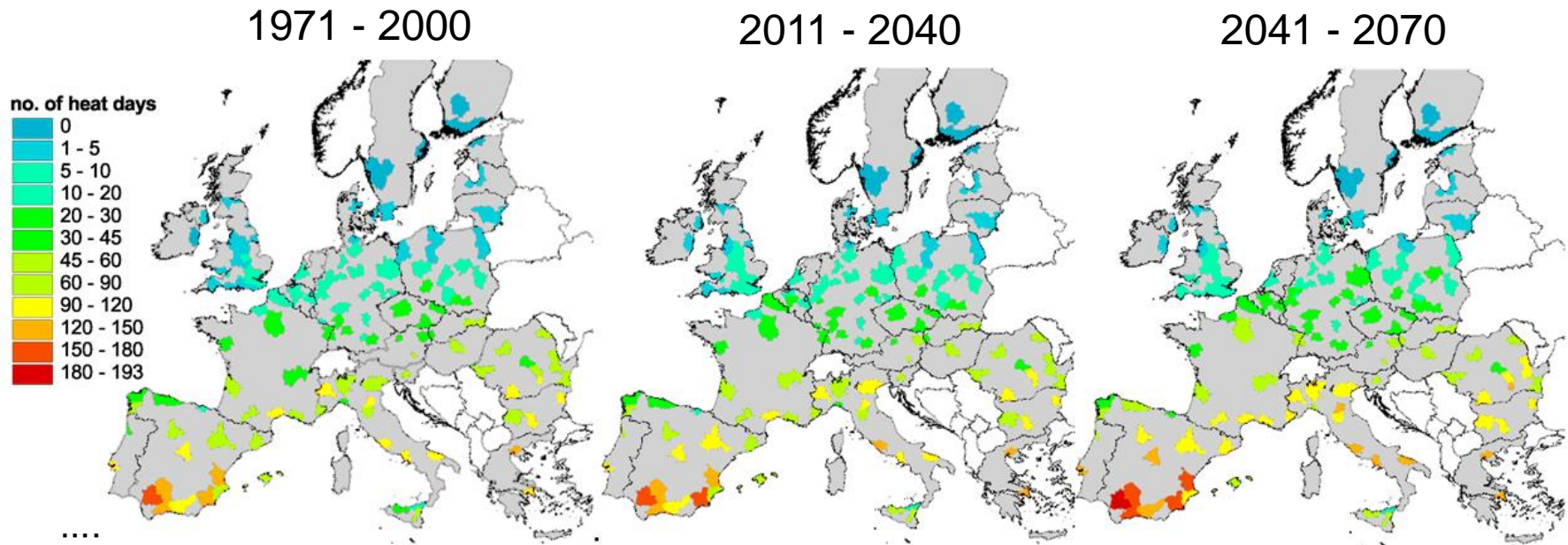
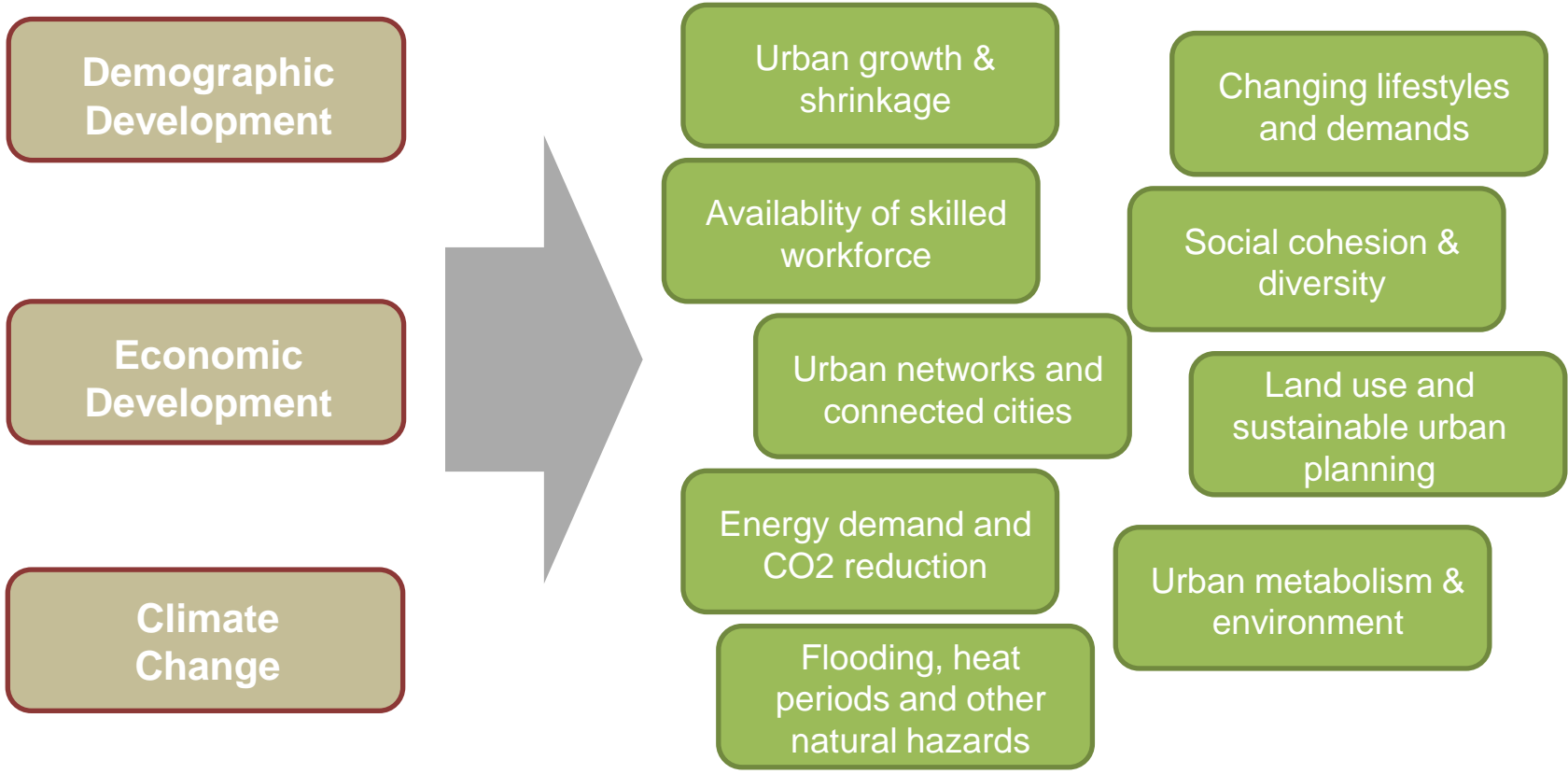


Figure: Number of heat days (days with  $T_{max} > 25$  C) – averages during 30 year periods 1971-2000, 2011-2040, 2041-2070

## Urban Megatrend Study: Conclusions.

- The megatrends **manifest differently** in space and are depending on the spatial context.(Governance System, History, Planning, etc.)
- Challenges **accumulate** in certain urban regions.
- Challenges deriving from one Megatrend may influence other challenges.
- These interactions are highly dependent on **local circumstances**.
- **Urban Challenges** can be categories:
  - Natural Environment
  - Demographic Development
  - Social & Cultural Issues
  - Built Environment and Infrastructure
  - Economic Development
  - Science & Technological Development
  - Urban Governance & Democracy

# From Megatrends to Challenges





# From Challenges to Visions

## Urban Challenges

- Manage sustainable urban growth and shrinkage
- Provide innovative & green environments and public spaces
- Ensuring energy transition and CO2 reduction
- Manage mobility needs and urban networks
- Achieve social cohesion and utilize urban diversity
- Take advantage of newest technological solutions
- Anticipate all these issues in new governance concepts

## RDI areas

Urban Adaptability & Dynamics

Social Inclusion and Urban Democracy

Economic Vitality and Knowledge Based Society

Sustainable Infrastructure & Networks

Urban Environment and Ecosystem Services



The Adaptive City.



The Diverse City.



Entrepreneurial City.



The Connected City.



The Livable City.



Tuesday, 21 May 2013

PLANNING TIMES

REAL CORP 2013

URBAN EUROPE

Joint Programming Initiative

# Thank you for your attention.

*Johannes Riegler  
johannes.riegler@ait.ac.at*

*Real Corp 2013, Rome  
21<sup>st</sup> of May, 2013*