



// Modes of urbanisation (ESPON SUPER)

Ivana Katuri^ć **Urbanex (Croatia)**



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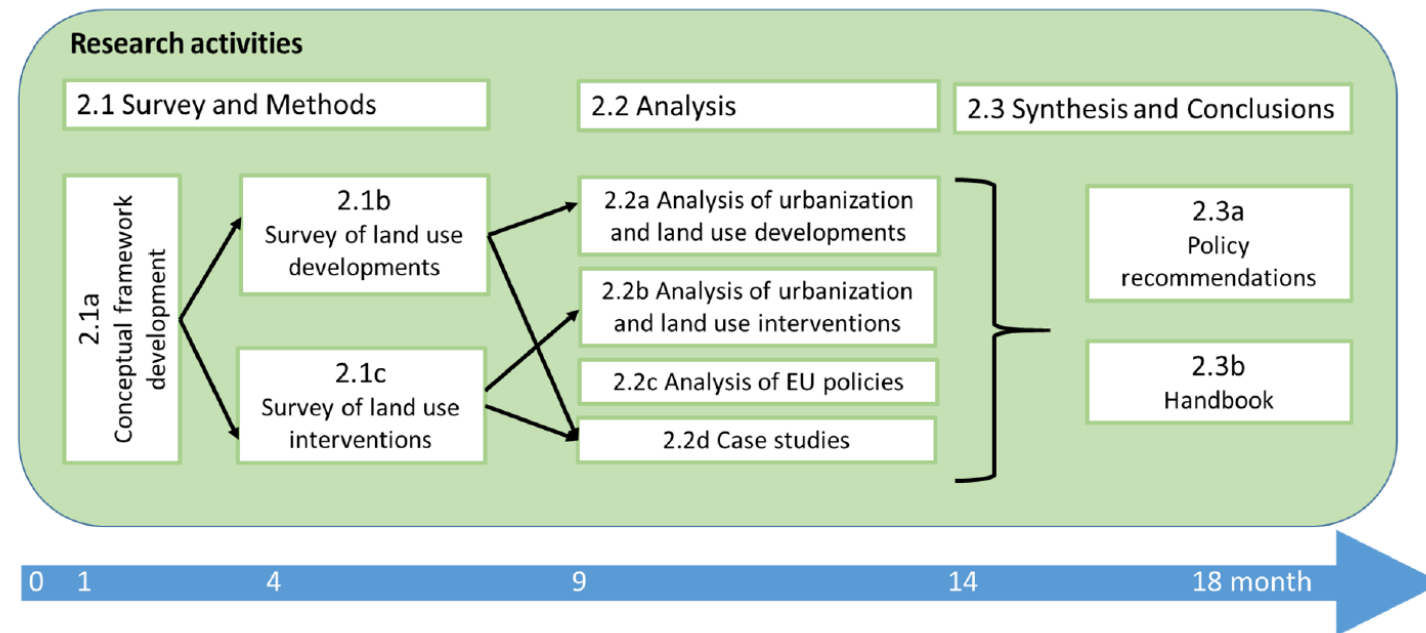
project SUPER

Sustainable Urbanisation and land-use Practices in European Regions



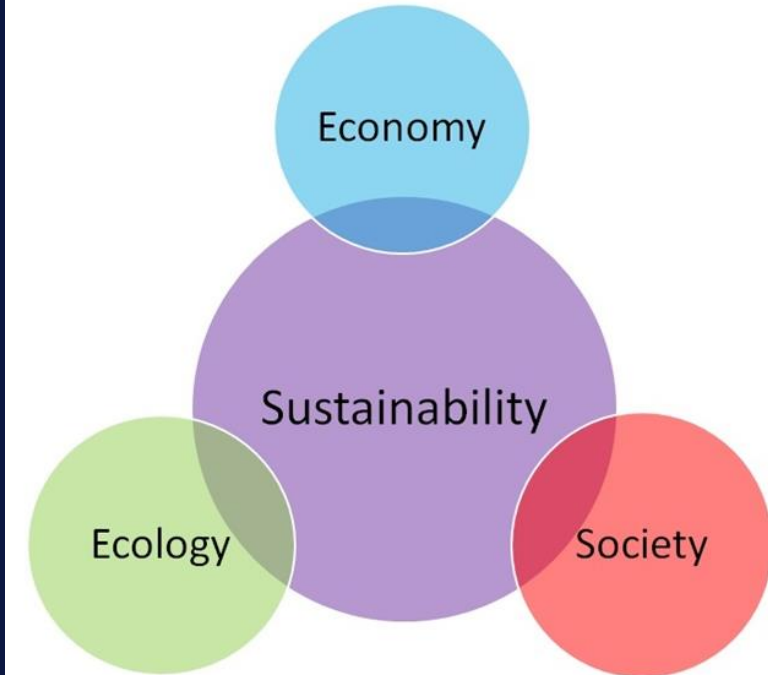
Research goals and design

- Output: evidence, recommendations and measures on how sustainable land use can be promoted and how unsustainable land use can be avoided, reduced and compensated in Europe, its cities and regions
- Sustainable (temporal balance vs thematic balance of people/planet/profit)
- Urbanisation (and land use – understanding drivers of change)
- Practices (land-use decision-making, effectiveness of planning)
- In European Regions (territory matters, regional approach)



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Impacts of modes of urbanisation on sustainability



Three modes of urbanisation

- **Urban containment** (was no net land-take)
- **Concentrated urbanization** (new)
- **Diffuse urbanization** (was urban sprawl)

Urban containment

- Close to zero land take, dense cities
- A strategy to restrict urban growth - no new unbuilt land is being converted to urban use
- Strict city boundaries (e.g. greenbelts), infill development, brownfield redevelopment inside the urban area



https://www.nationale-stadtentwicklungspolitik.de/NSP/EN/Projects/BuildingCityOfTomorrow/city_of_tomorrow_node.html

Concentrated urbanisation

- Clustered/polycentric urban structure
- Transit-oriented development (TOD)
 - a strategy of concentrated urban growth that considers mixed-use development near, and/or oriented to public transport systems



Diffuse urbanisation

- Low-density, scattered/discontinuous, car-oriented, unplanned
- *...the physical pattern of low-density expansion of large urban areas, under market conditions, mainly into the surrounding agricultural areas. [...] Development is patchy, scattered and strung out, with a tendency for discontinuity. (EEA 2016: 20)*
- A movement of human population from densely populated metropolitan urban towns and cities into low-density, monofunctional and car dependent communities



Urban sprawl in Europe, EEA report (2016)

Three dimensions of sustainability

Economic sustainability	Ecological sustainability	Social sustainability
<ul style="list-style-type: none">- GDP, wealth- Public finance- Jobs- Accessibility- Business areas- Housing demand / new construction- Transportation costs- Energy consumption	<ul style="list-style-type: none">- Reducing mobility (by car)- Reducing pollution (including CO₂)- Green urban areas- Biodiversity- Land consumption- Natural hazards – risk and vulnerability- Climate change adaptation and mitigation- Consumption of resources- Space for future renewable energy- Space for future water retention- Space for future circular economy	<ul style="list-style-type: none">- Health- Affordable housing- Equity / inclusion- Public and recreational space- Variety (highrise, suburban, etc)- Mixed-use areas- Quality of life

Results - urban containment

- Economic sustainability:
 - + + agglomeration economies, central business district, abundance of jobs, good accessibility, inner city redevelopment, lower transportation costs, less energy consumption per capita
 - increase in housing prices, reduced new housing supply, market volatility, possible economic loss

- Ecological sustainability
 - + + reduced dependency on cars and transport-related pollution
 - + preservation of agricultural land and open space, smaller impact on climate change due to lower GHG releases, more flexibility with respect to land use pattern (outside the city boundaries)
 - +/- inside the compact cities biodiversity is reduced, but large open areas out of the city are left intact
 - loss of green space inside the city boundaries due to densification, higher risk related to natural hazards due to high population density

Results – urban containment

- Social sustainability

- + cycling, walking, recreation, variety in housing, mixed-use areas
- +/- polarization of incomes but less spatial segregation
- Exposure to traffic noise, decrease of green areas, high density housing
- - high housing prices

Results – concentrated urbanisation

- Economic sustainability

- + + accessibility of the public transport, new business areas, agglomeration economies, wealth
- + jobs located closely to transit stations, new housing supply, lower transportation costs, less energy consumption

- Ecologic sustainability

- + + reduced dependency on cars
- + reduced air pollution, provision of green areas, higher preservation of open space, smaller impact on climate change due to reduced GHG releases, better planning
- better resilience to natural hazards, more flexibility with respect to land use

Results – concentrated urbanisation

- Social sustainability

- + + affordable housing

- + walkable neighbourhood design, social inclusion, recreational spaces, mixed use areas, new housing supply

- +/- housing prices may increase due to improved accessibility

- noise pollution

Results – diffuse urbanisation

- Economic sustainability:

- + sprawl can be associated with increasing wealth, high skill jobs in edge cities (airports, technopoles), low-cost and low-density housing market needs
- mostly low skill jobs, less public transport, greater reliance on cars
- - higher costs because of commuting

- Ecological sustainability

- + more space for water infiltration and retention
- +/- abundance of green spaces depend on the type of the neighbourhood
- decrease in availability of land
- - increased mobility by cars, increased air pollution, extensive loss of biodiversity, open space and agricultural land

Results – diffuse urbanisation

- Social sustainability

- + + affordable housing

- + good quality of life - low density housing provides more privacy and gardens

- +/- provision of green areas depend on the type of the neighbourhood

- spatially segregated land uses, health problems due to pollution

- - social polarization, low social mobility

Measuring sustainability of urbanisation

- This method will be used to assess particular types of urban development from case studies and pan-European analysis
- Identification of modes will be based on Corine Land Cover 2008-2018 coupled with population data

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Modes of urbanisation - impact on housing



Housing - urban containment

- Economic sustainability
 - possible restrictions of economic growth, as house prices increase, development land becomes scarce and individuals and businesses decide to relocate to other cities where there is still room for new development on the periphery (Ouestlati et al. 2015)
 - **reduced new housing supply** (Mayer & Somerville 2000), and increased market volatility (Huang & Tang 2012; Laughlin 2012)
 - **restrictive land-use policy causes high prices for houses**, estimated economic loss in the Netherlands 0,5 % of GDP (Besseling et al. 2008, 13-77)
 - increasing development risk makes **all houses less affordable because fewer get built** (Cheshire 2018)
 - **restrictive land use regulation and local planning constraints increase local housing vacancy rates**: a one standard deviation increase in restrictiveness causes the local vacancy rate to increase by 0.9 percentage points (23%) (Cheshire et al. 2018).
- Social sustainability
 - „...urban densification has been shown to increase housing prices, which has a negative impact on affordable housing (Millward 2006).”

Housing - concentrated urbanisation

- Economic sustainability
 - positive impact - it considers new constructions (Knowles 2012; Ratner and Goetz 2013)
- Social sustainability – housing affordability:
 - studies mostly note **positive** or **neutral** effects of TODs
 - affordable housing is an important part of most TOD policies (Gunthrie and Han 2016)
 - find that lower-income passengers often represent the majority of transit users (van Lierop et al. 2017)
 - **housing prices may increase due to enhanced transport accessibility**; however, in the US lower-income residents did not move out of new transit neighbourhoods at a disproportionate rate (Delmelle and Nilsson 2019)
 - the majority of transit neighbourhoods do not undergo dramatic changes in their socioeconomic composition in the decade following the placement of the station (Nilsson and Delmelle 2018)

Housing - diffuse urbanisation

- housing demand is one of the drivers of diffuse urbanisation, especially affordability of low-density housing
- Economic sustainability
 - positive impact: fulfilment of low-cost and low-density housing market needs (Longley et al. 2002)
 - housing market in less dense cities is more resilient and affordable than in denser cities during a recession phase (Antoniucci and Marella 2016)
- Social sustainability
 - **many people choose to live in low-density suburbs due to low housing prices** (Ouestlati et al. 2015; EEA 2016; Ewing et al. 2016; Antoniucci and Marella 2018)
 - **suburbs are a desirable place to live** because low-density housing offers more privacy and larger garden areas than densely built-up compact cities (Longley et al. 2002)
 - living close to nature reduces stress (Wells & Evans 2003), Robertson (1990) argues that decentralised urbanisation, as a return to the countryside, would help to instil positive rural values.

Housing – one of key LC change drivers

- secondary housing – e.g. Croatian tourism
- housing studies on the motivation for different housing patterns
 - Arbaci, S., 2007: Ethnic Segregation, Housing Systems and Welfare Regimes in Europe, *European Journal of Housing Policy* 7 (4), 401-433
- work of Arbaci underlined divergence perspective related to housing issues

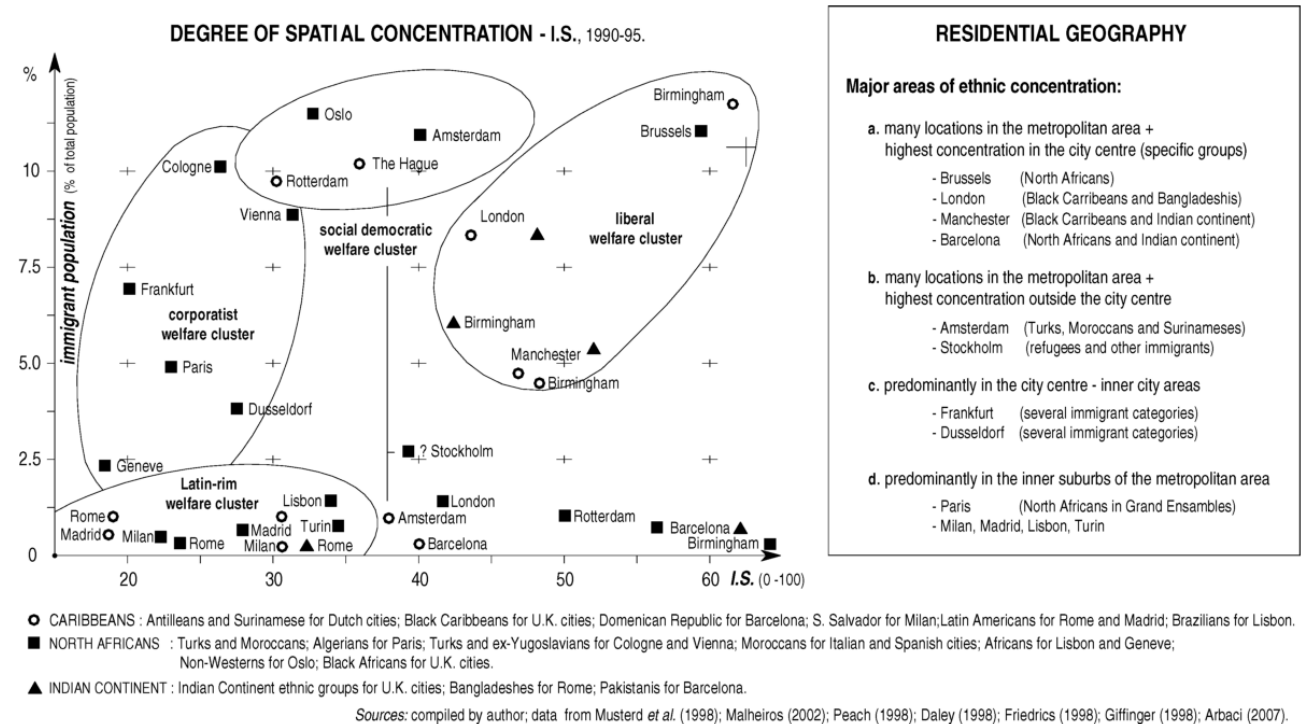


Figure 1. Indices of segregation (IS) and major areas of concentration for selected ethnic groups in selected European cities, 1990–1995.



// Thank you

Ivana Katurić, URBANEX (Croatia)

This presentation will be made available at: www.espon.eu/Helsinki-2019

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