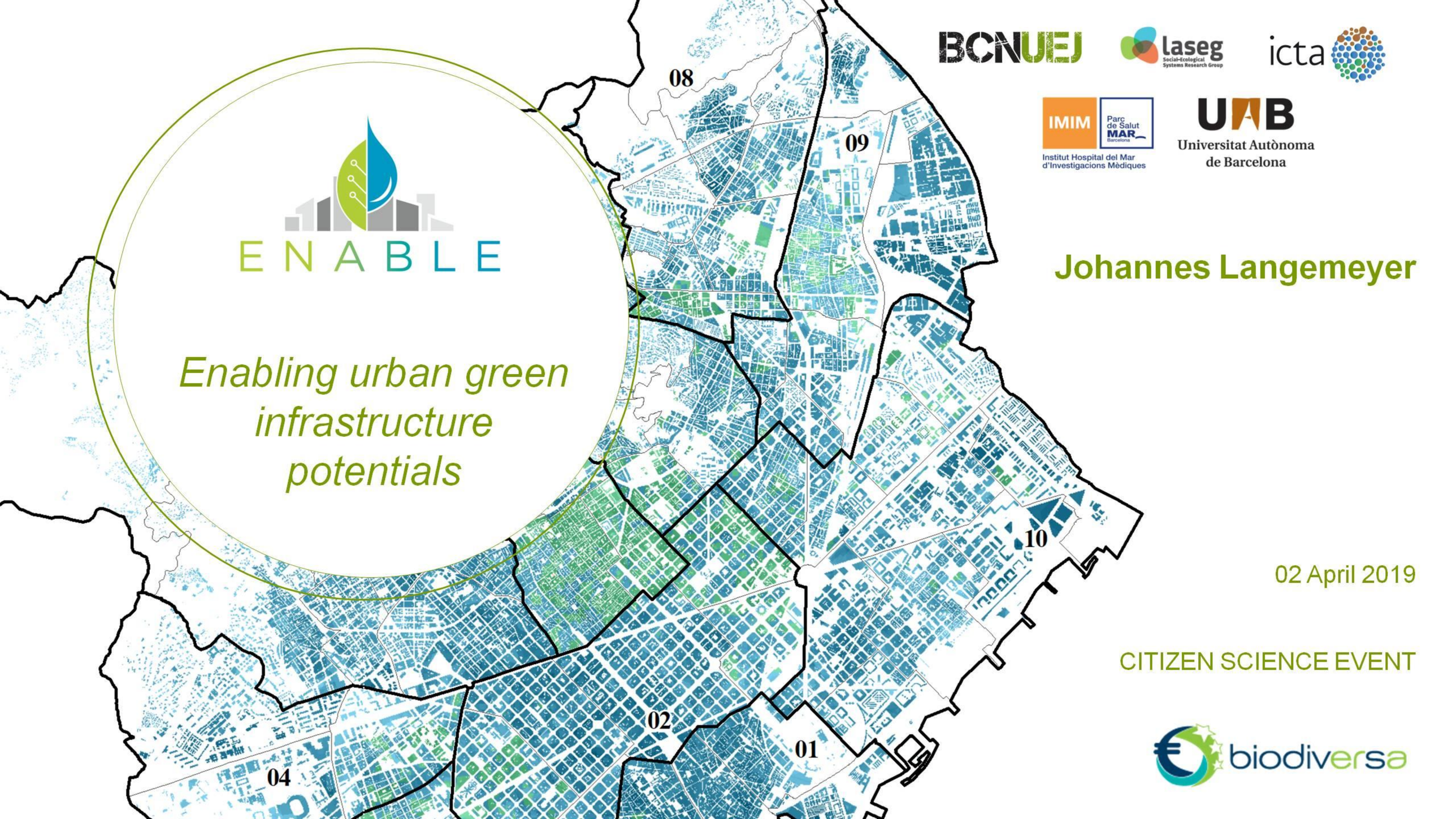


ENABLE

Enabling urban green infrastructure potentials

Johannes Langemeyer

02 April 2019

CITIZEN SCIENCE EVENT

Living on an urbanizing planet

- Three billion additional urban citizens are expected by 2050

- "Make cities and human settlements more inclusive, safe, resilient and sustainable"
  UN-Sustainable Devlopment Goal 11

- ENABLE aims to improve human wellbeing in cities enhancing the flow of ecosystem services (focusing on equity and resilience)

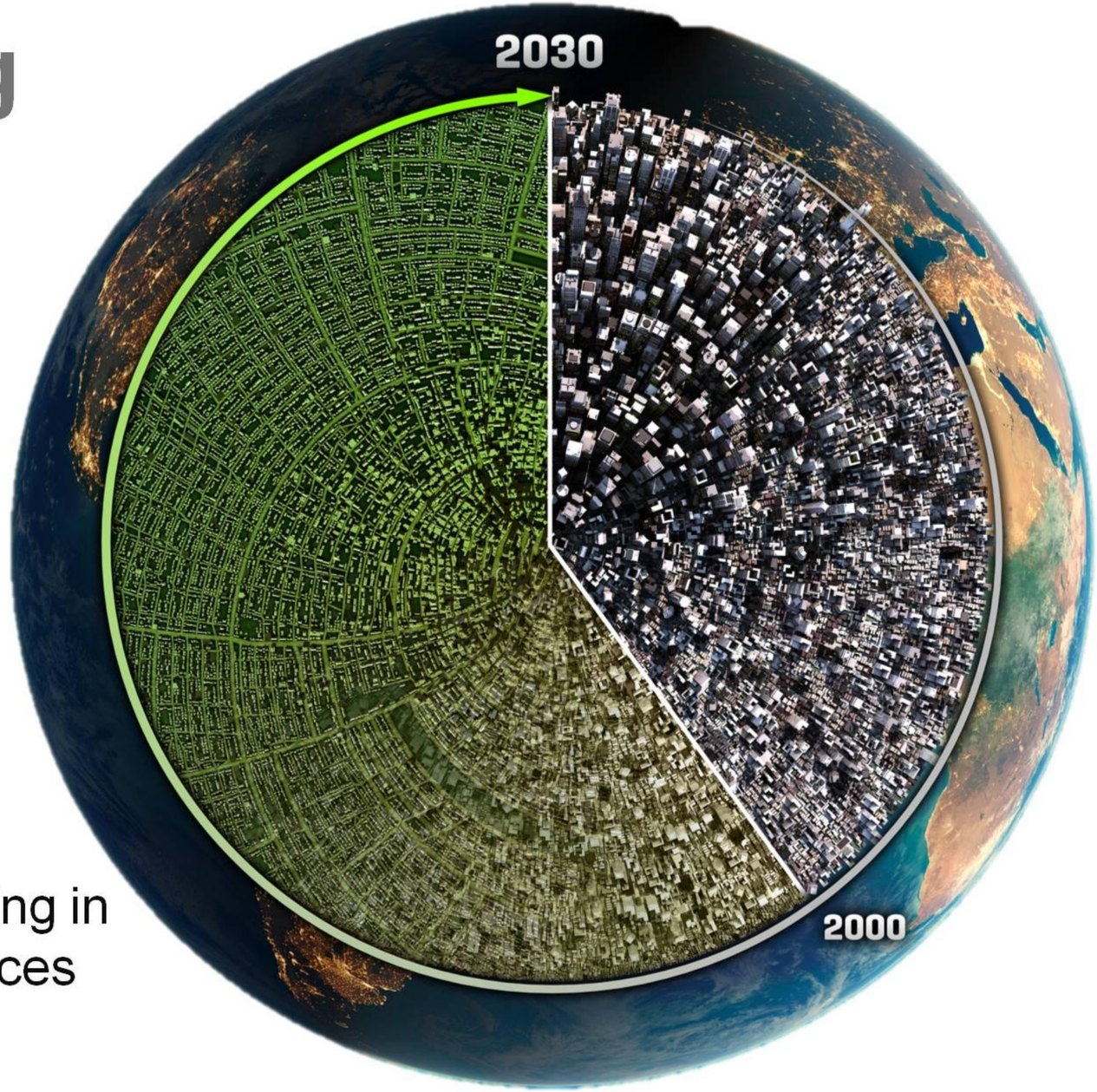


Figure: Elmqvist (2014)

Enabling urban green infrastructure potentials

ENABLE

New York

New York is delta city located on the Eastern seaboard of the United States at the mouth of the Hudson Rivier and home to 8.5 million people with 26 million living in the greater metropolitan region. Green infrastructure has become a central part of sustainability and climate resilience planning, especially since 2010 when the Green Infrastructure Plan was launched to help support storm water absorption and reduce unwanted combined sewage overflow. More recently, since the damage caused by Hurricane Sandy in 2012, NY has made further investments in GBI as nature-based solutions for building climate resilience.

Role of GBI for climate adaptation; resilience of urban ecosystems; unequal access to ecosystem services

Oslo

Oslo is a city of 630 000 inhabitants and currently one of Europe's fastest growing capital cities. Policies such as Oslo's municipal plan to 2030, the Marka Act and a newly developed Strategy for Green Roofs outline plans for urban densification and development, and introduce measures to tackle a number of social and environmental challenges facing the city. Mapping, indicator and assessment tools for ecosystem services are needed to support the effective implementation of these policies.

Accounting for ecosystem services of city trees; understanding ecosystem services in urban densification; enabling decision-support tools for urban planning

Stockholm

Stockholm is a rapidly growing city (1.5 million inhabitants) facing a number of challenges related to housing shortages, social segregation, and mounting pressure on natural spaces. At the regional level, land-use planning is decentralised and there are limited incentives for the 26 municipalities that make up Stockholm county to coordinate and cooperate. This poses a major challenge to the effective use of GBI and the capacity to handle complex sustainability issues such as water safety and climate change.

Urban densification; pressure on natural spaces; equitable and continued access to GBI

Barcelona

The Barcelona Metropolitan Area is home to approximately 3 million inhabitants, making it one of the most densely populated areas in Europe. It is characterised by a compact and densely populated urban core and increasing urban sprawl into the hinterlands. Key challenges include enhancing availability of GBI and increasing equal access to ecosystem services, taking into account diverse societal demands across municipalities, scales and administrative sectors.

Lacking availability of GBI; unequal access to ecosystem services; urban sprawl

Halle

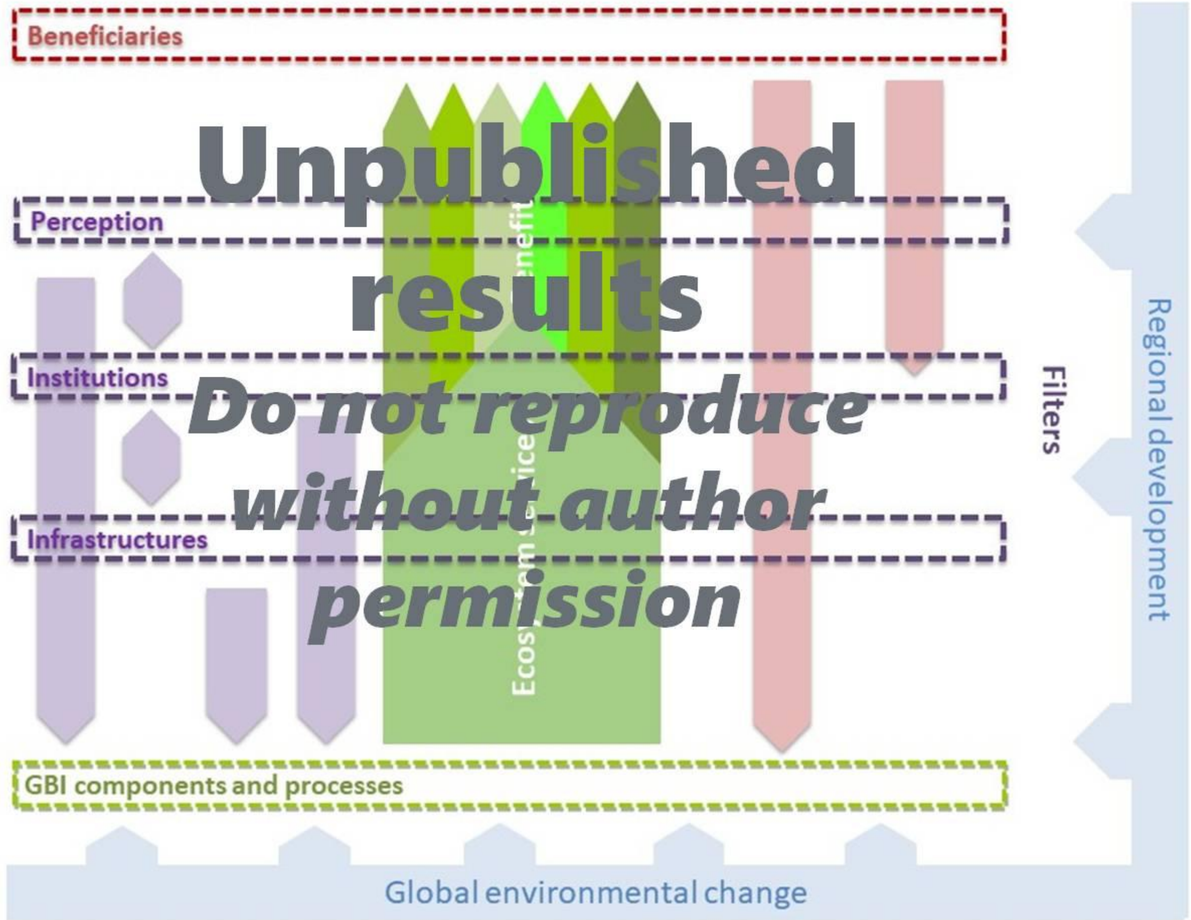
Halle, a small-medium sized town (240,000 inhabitants) located in eastern Germany, has experienced a period of urban renewal and population growth in recent years. This spike in urban development has resulted in a number of challenges such as the sealing of once open green spaces, increased air pollution and urban heat islands, a growing number of health problems (e.g. asthma, obesity) and the marginalisation of low-income communities.

Air pollution; heat islands; health problems; social marginalization

Łódź

Łódź is the third largest city in P
700,000 inhabitants. It is a shrinl
facing several unresolved enviror
socio-economic problems. Key cl
include bringing visibility to the
services provided by the city's ec
(e.g. its 'invisible rivers'), establis
a foundation for implementing a
Green Network based on a privat
partnership, enhancing natural c
social equity, and including GBI s
the city's revitalisation plans.

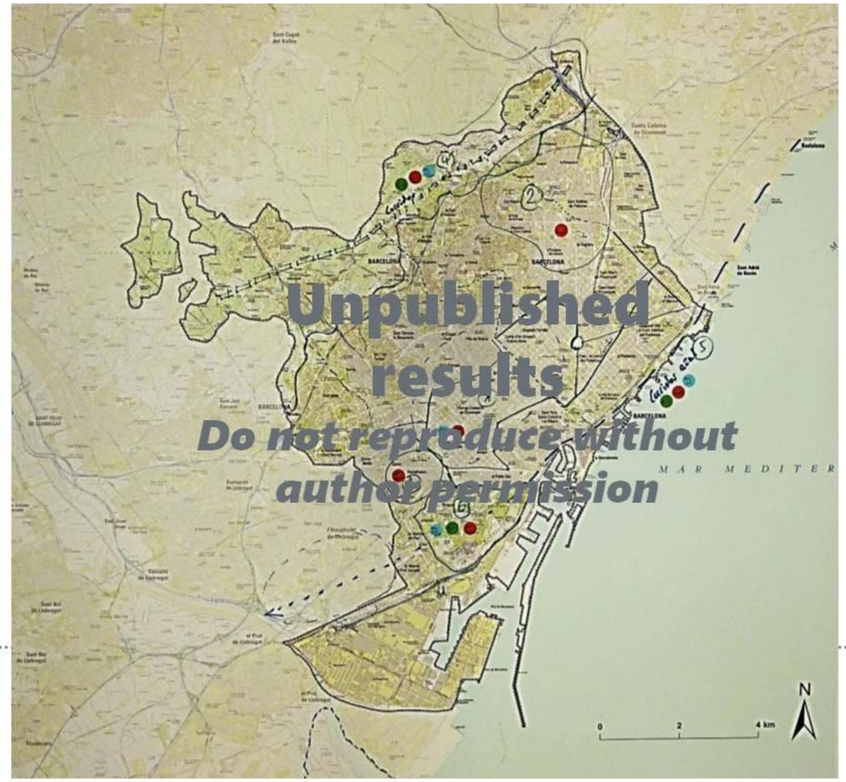
Environmental justice; limited of ecosystem services; integra GBI in urban revival initiatives

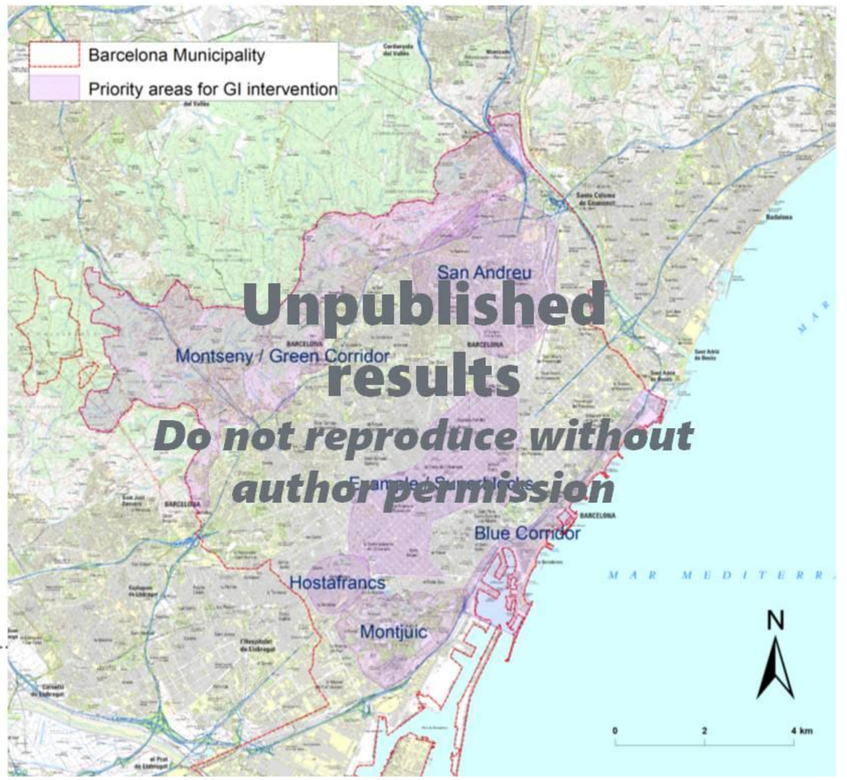


Andersson et al. (forthcoming)

Participatory research

Participatory defintion of research questions

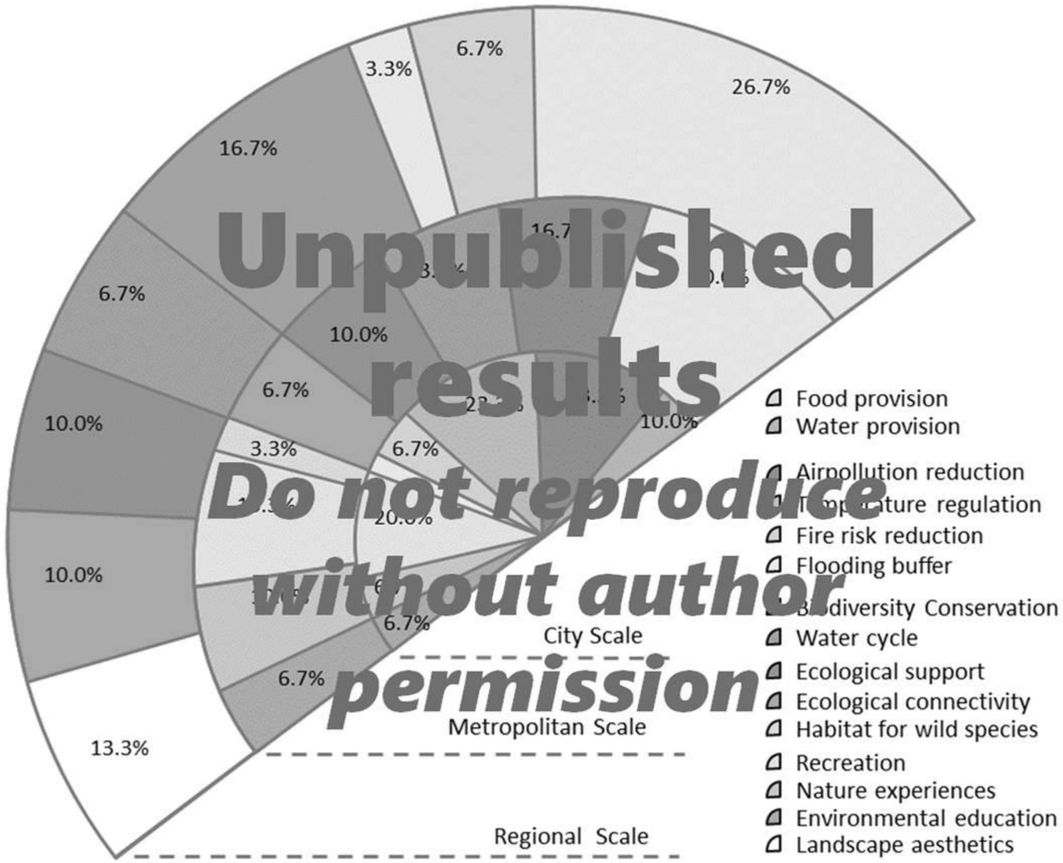




*Determining priotity areas for **green infrastructure** research*

Langemeyer et al. forthcoming

Participatory resilience assessment



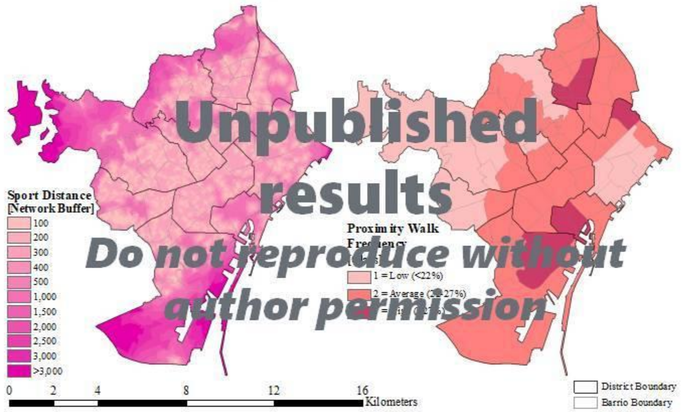
*Determining shifting demands for **ecosystem services***

Langemeyer et al. forthcoming

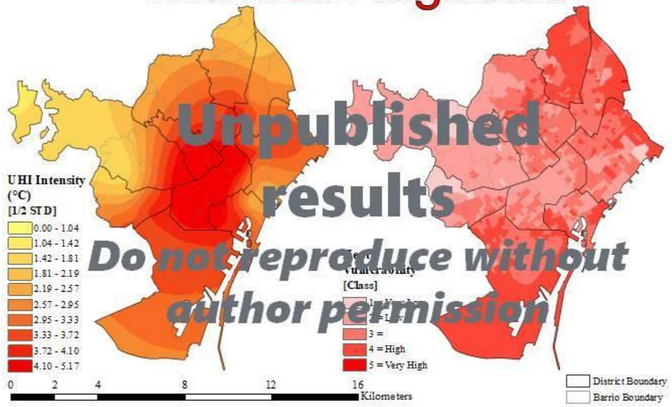
Knowledge integration

*Determining spatial **ecosystem service** deficiencies*

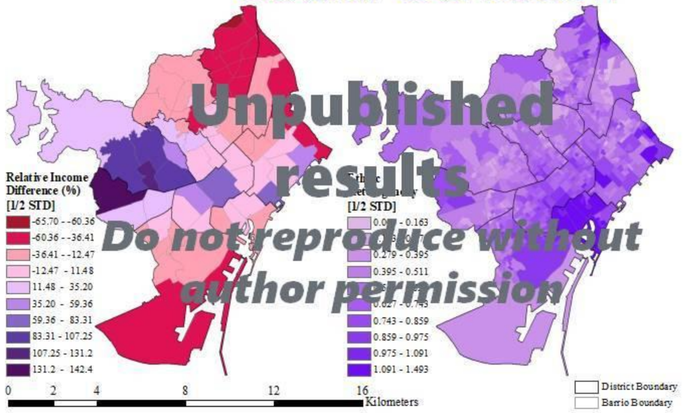
Recreation



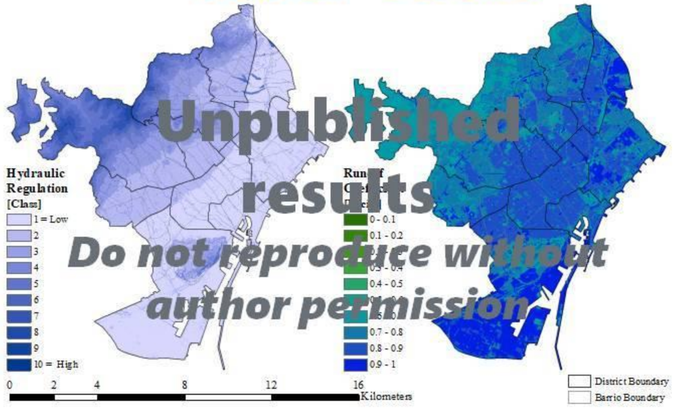
Thermal Regulation

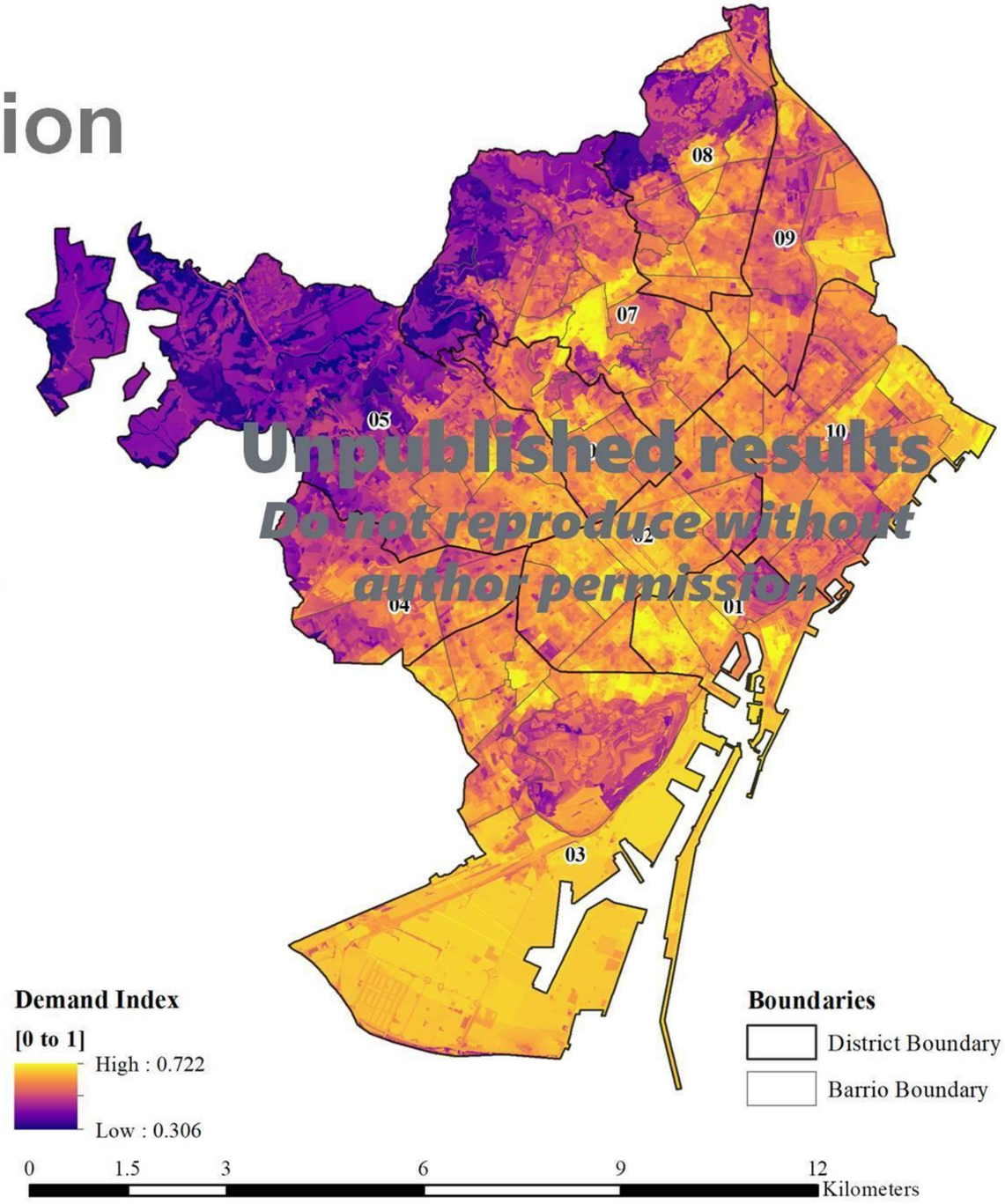


Social Cohesion



Runoff Control

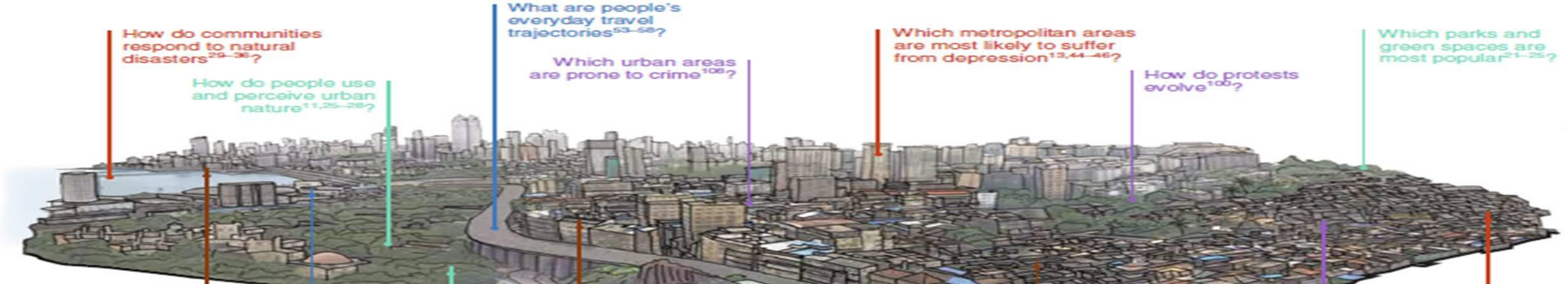




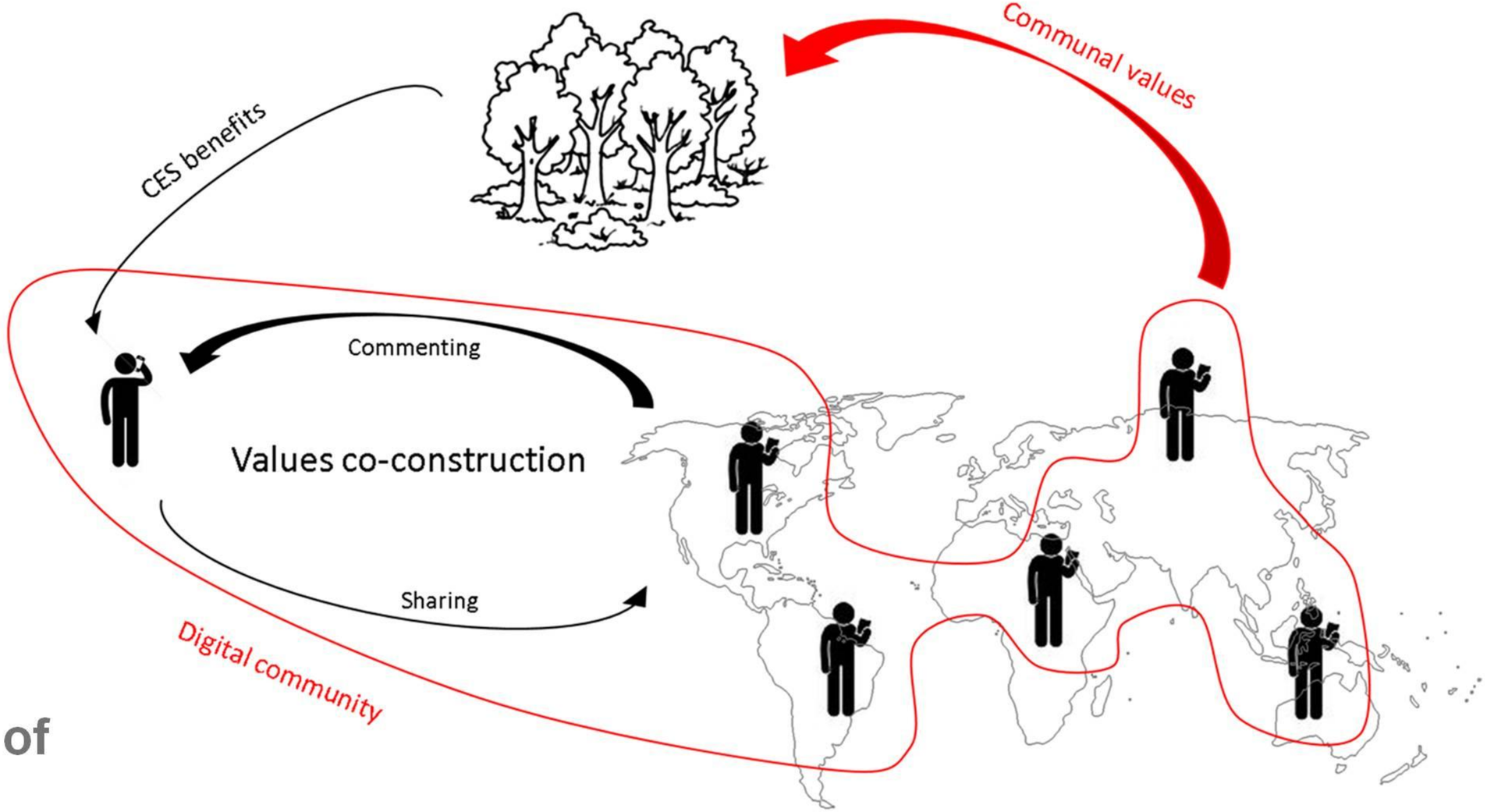
Langemeyer et al. forthcoming

Social Media Analysis

Figure: Llieva & McPhearson (2018)



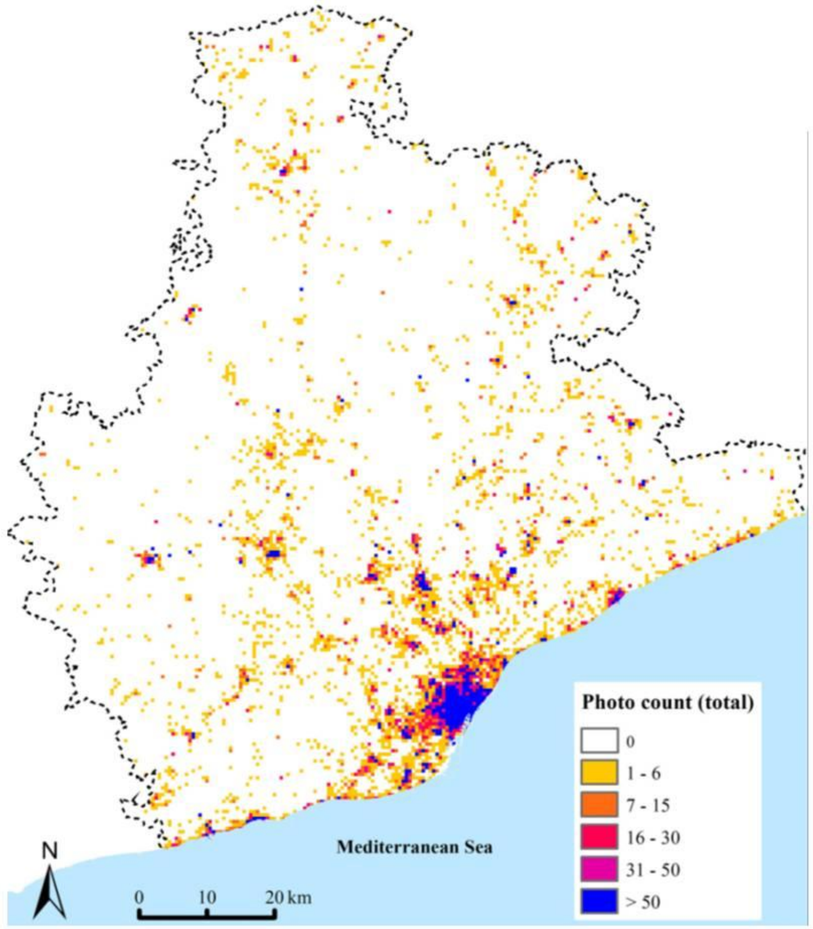
Understanding cultural ecosystem services

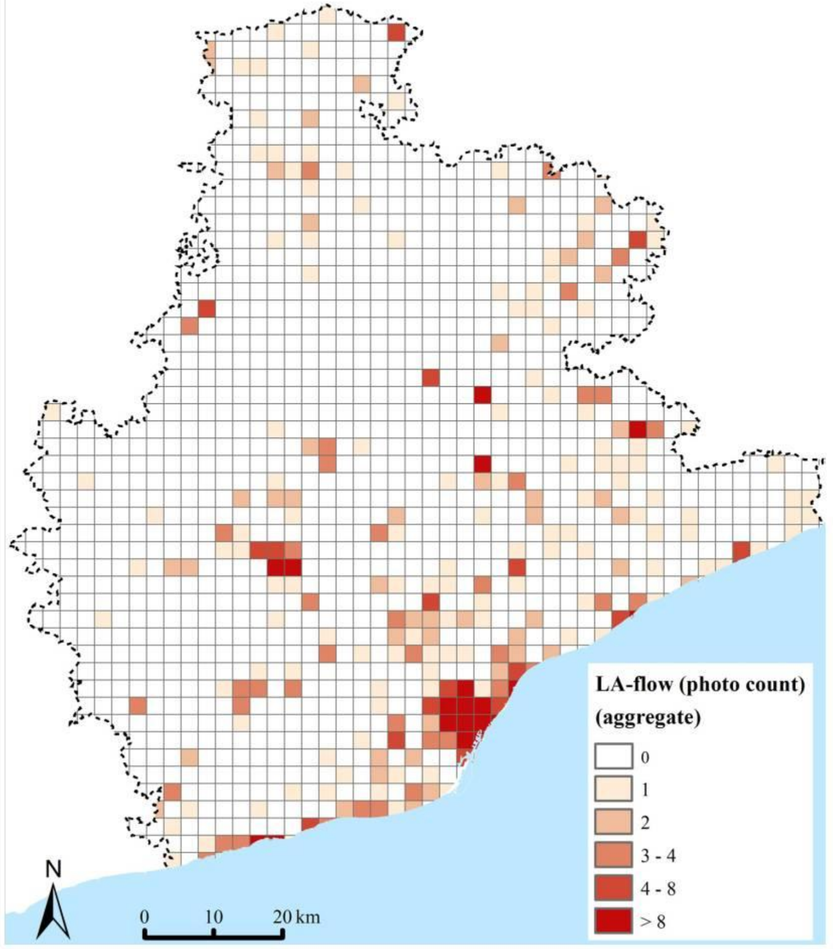


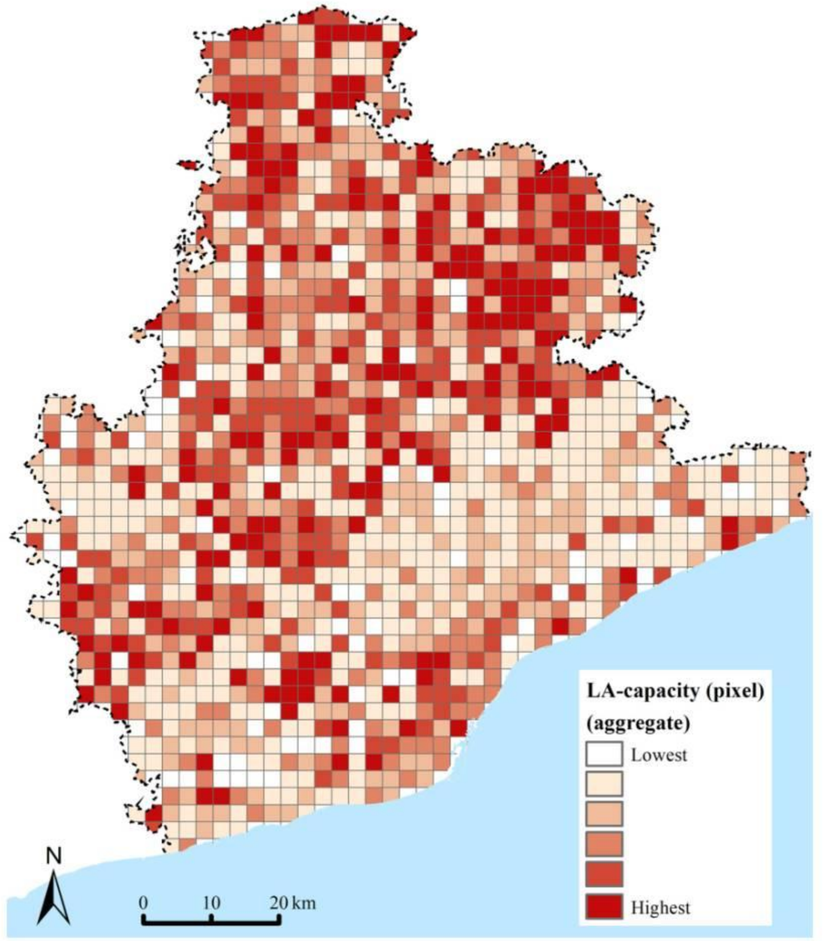
Digital co-construction of values

Calcagni et al. 2019

Assessing crowd-sourced data



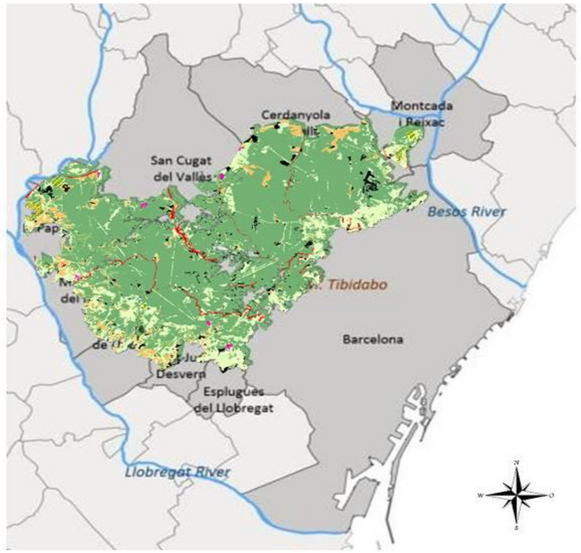


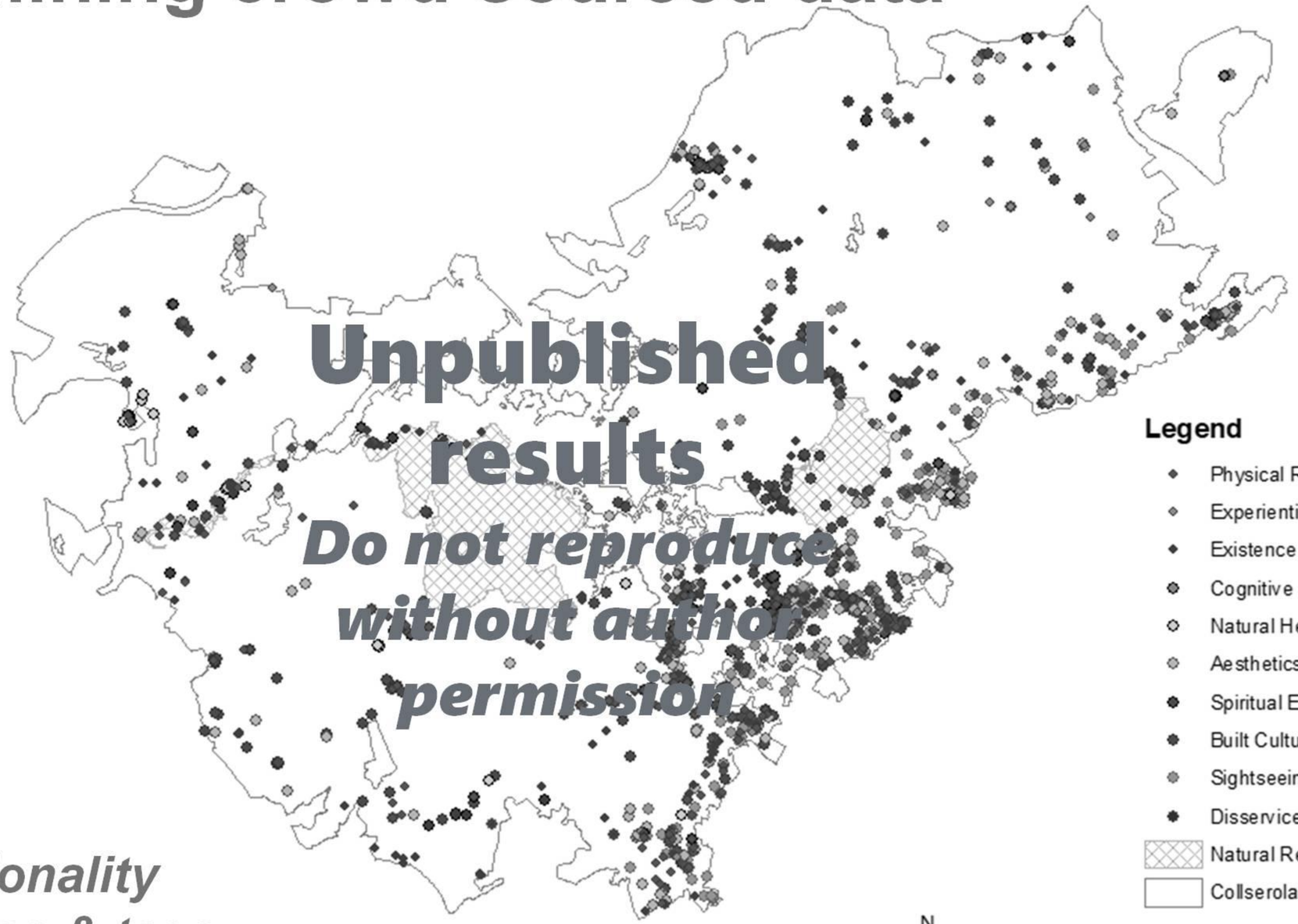


Examining landscape aesthetics based on Flickr pictures

Langemeyer et al. 2018

Examining crowd-sourced data

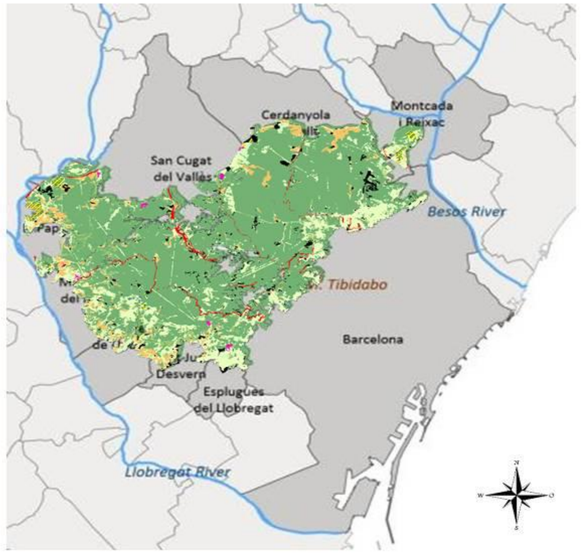


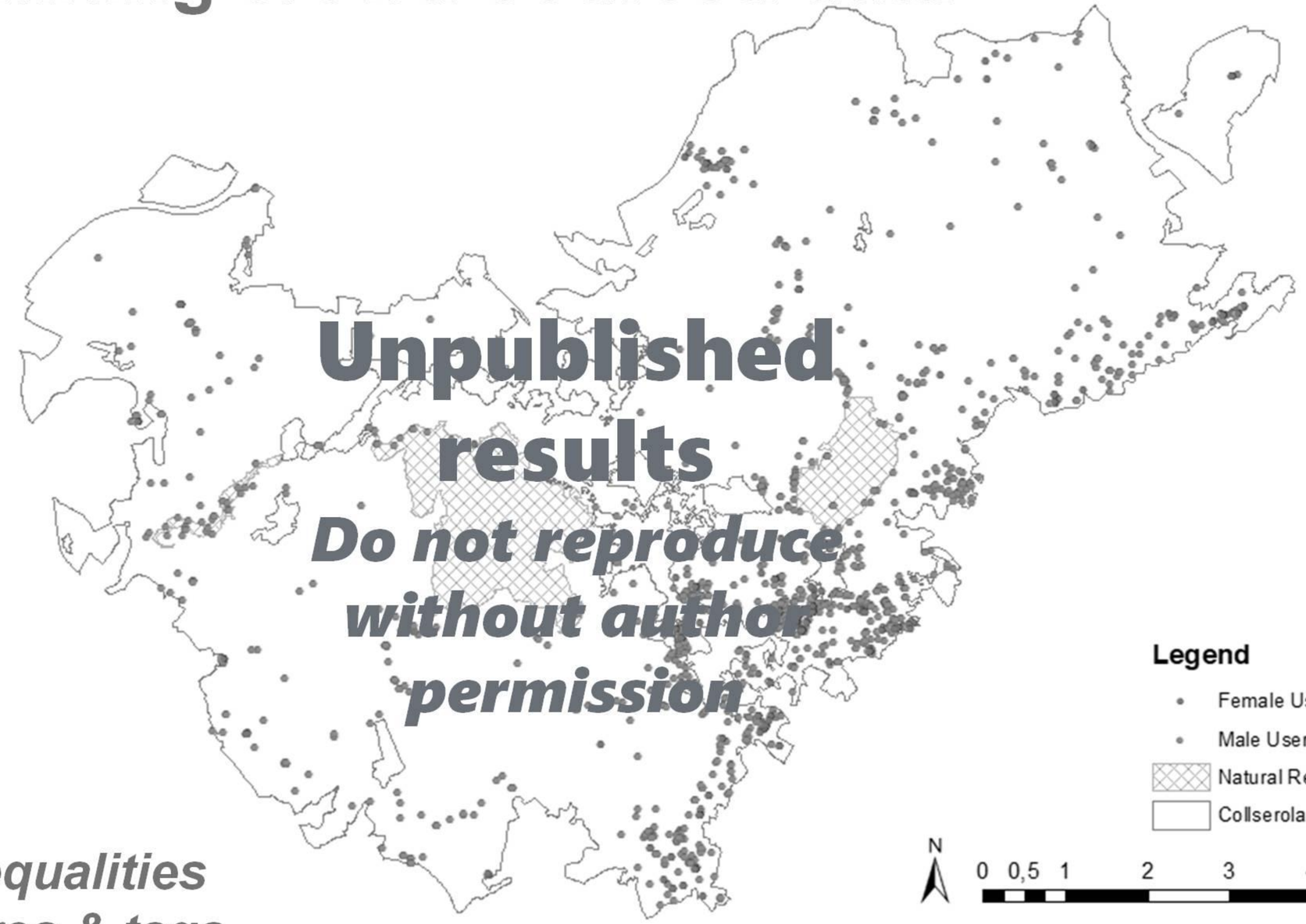


Examining multifunctionality based on Flickr pictures & tags

Calcagni et al. forthcoming

Examining crowd-sourced data





Unpublished results

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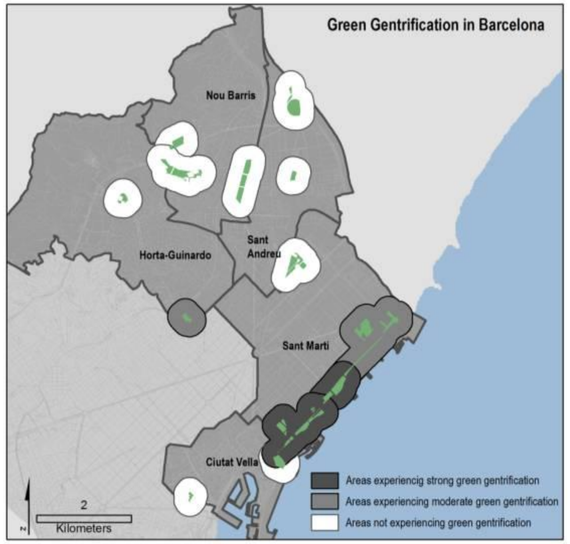
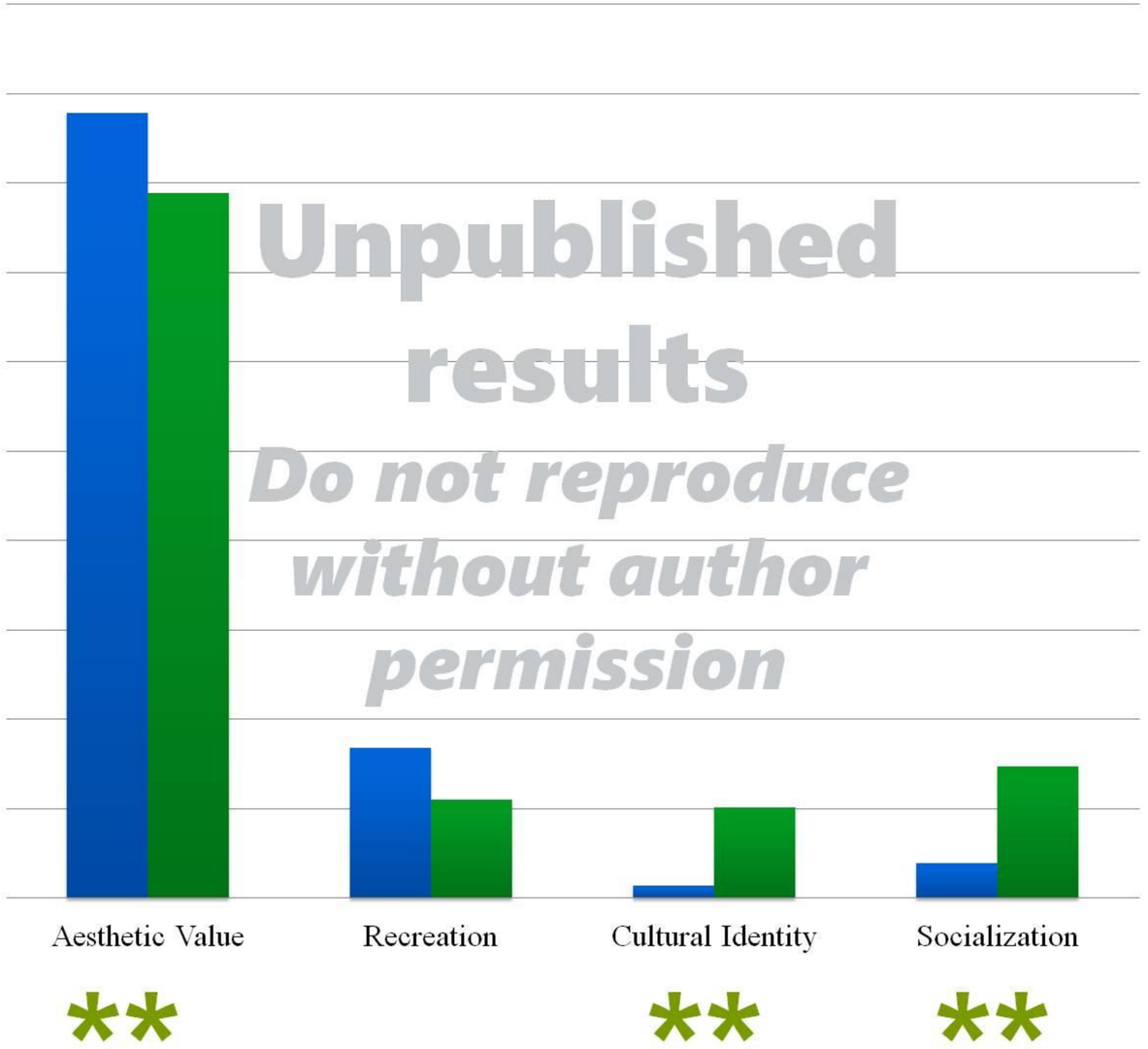
Examining gender inequalities based on Flickr pictures & tags

Calcagni et al. forthcoming

Examining crowd-sourced data



Green gentrification in Barcelona
Anguelovski et al. (2016)

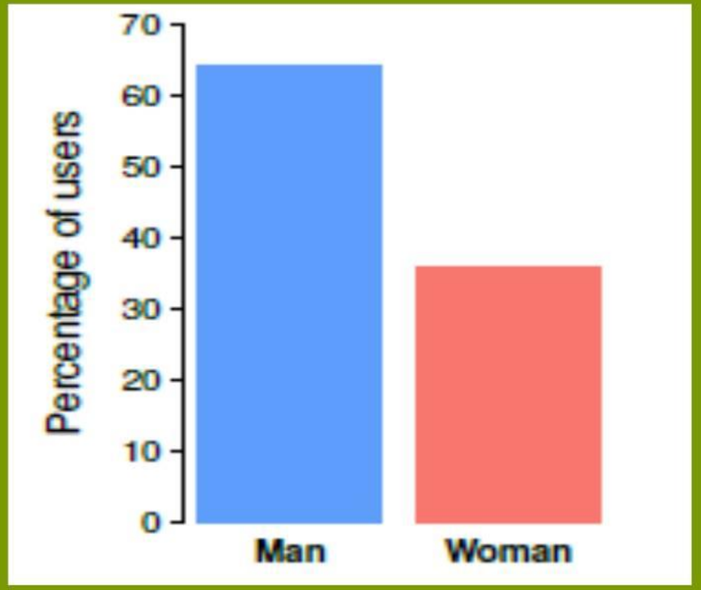


Connolly et al. forthcoming

Understanding 'green gentrification'

“ Non-intrusive data collection

“ Data rich in (unknown) biases



Lenormand et al., 2018

“ Ethically more complicated than CS approaches based on volunteer-collected data (violates several CS principles)

ENABLE

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HUMBOLDT-UNIVERSITÄT ZU BERLIN

eco logic

UNIVERSITY OF LODZ
International Relations Office

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