INTA
Urban Health Culture of the Future

Biodiversity and Urban Nature - Investment in a Healthy Future

Thomas B. Randrup - DRAFT

agenda

- Multifunctionality
- Management challenges
- Governance challenges

Betydelsen av urban grönska

Studier från USA och det globala syd visar att fattiga stadsdelar vanligtvis har lägre tillgång till grönområden.

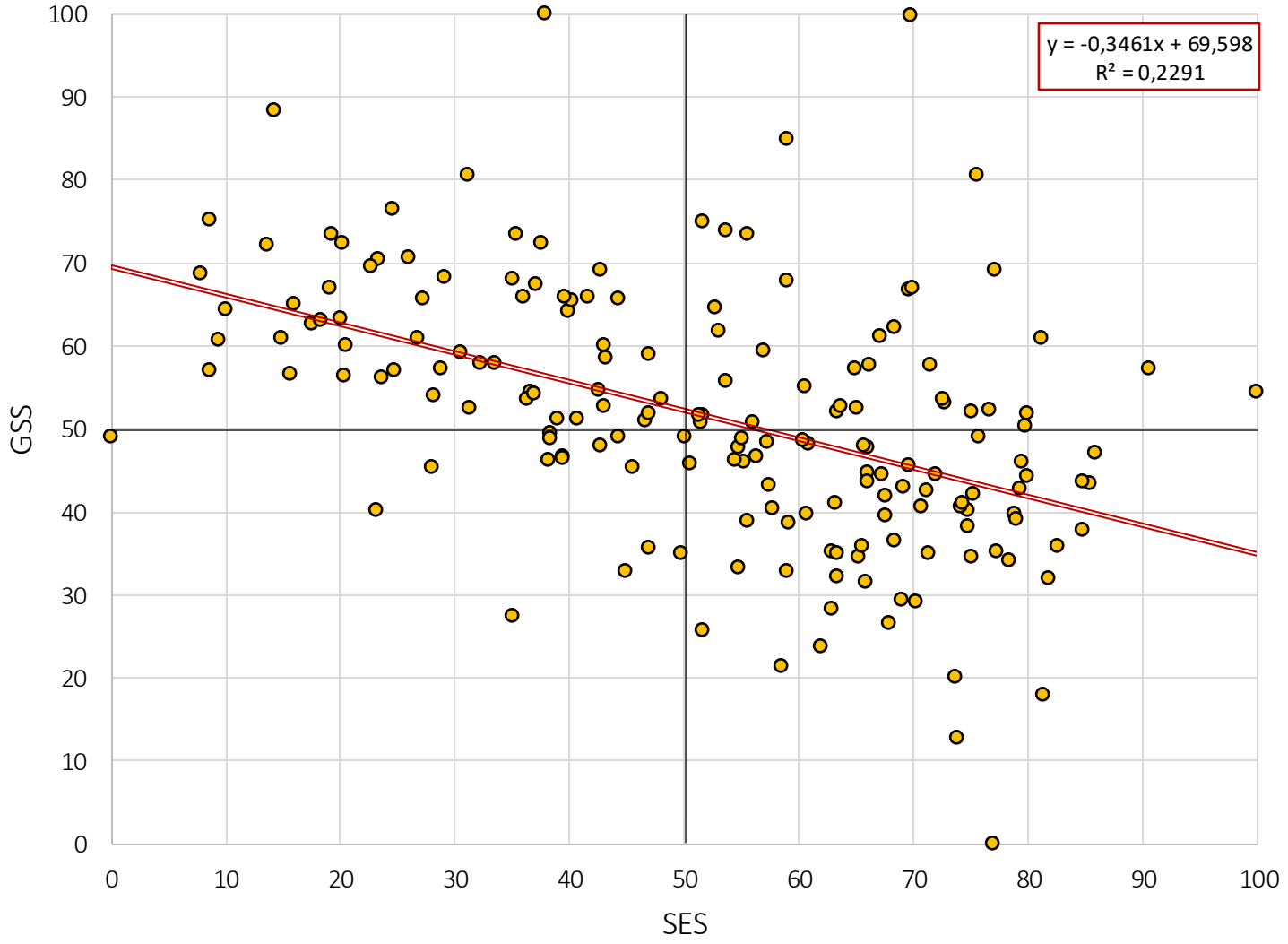
Gäller den här trenden för nordiska städer?

Rahman et al. (2024) **Unveiling environmental justice in two US cities through greenspace accessibility and visible greenness exposure**.
Urban Forestry & Urban Greening. https://doi.org/10.1016/j.ufug.2024.128493.

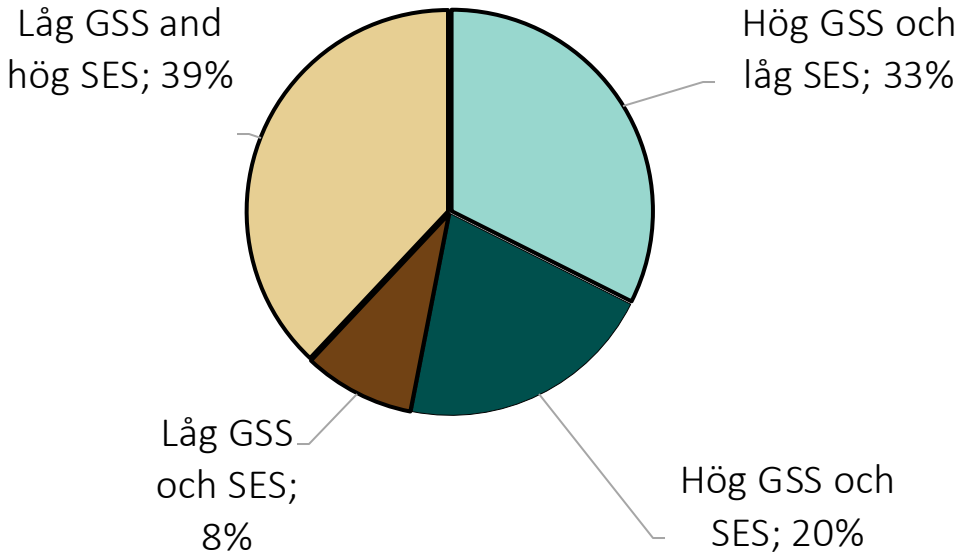
Green Equity Matrix

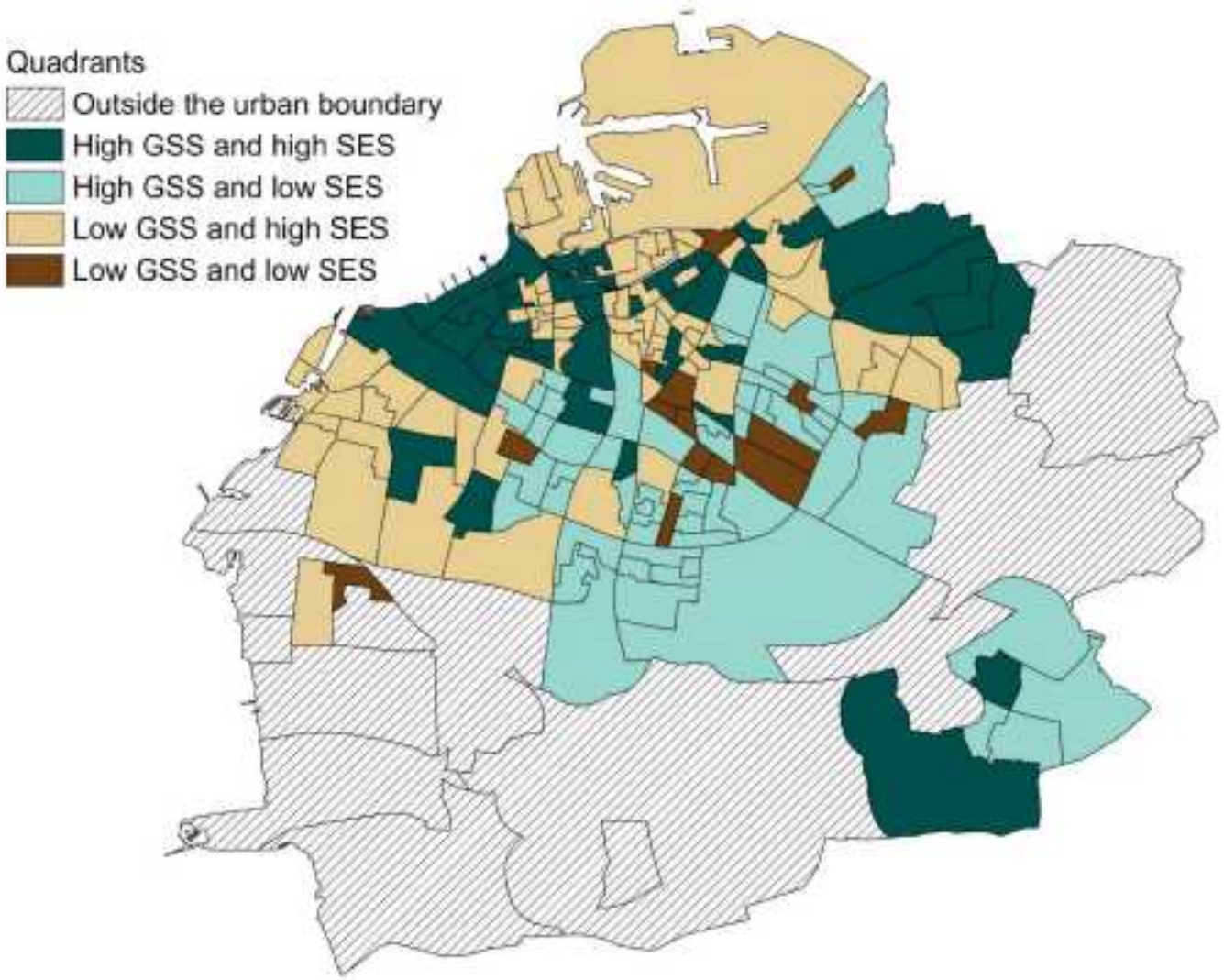
- Tool to assess and classify city districts based on their Green Space Status (GSS), and their Socio-Economic Status (SES)

- **Negative relationship** between GSS and SES in Malmö
  - Low GSS more often associated with higher SES



Kvadrantresultat





Diskussion

Metod

- Hälsoindikatorer – svårt att inkludera på stadsdelsnivå
- Ett enda sammansatt värde – användbart eller övergeneraliserande?
- Kvalitetsperspektivet av grönska– hur används det och av vem?

Resultat

- Fältbesök visade att vissa DeSO har betydande intern variation
- Utgångspunkt för planerare som vill identifiera stadsdelar där grönska bör prioriteras

Multifunctionality

- It is not only a matter about **where** green spaces are located, **how many** there are, and their individual **size** – eventhough it all matters for human use and biodiversity……it is as much about their functions.

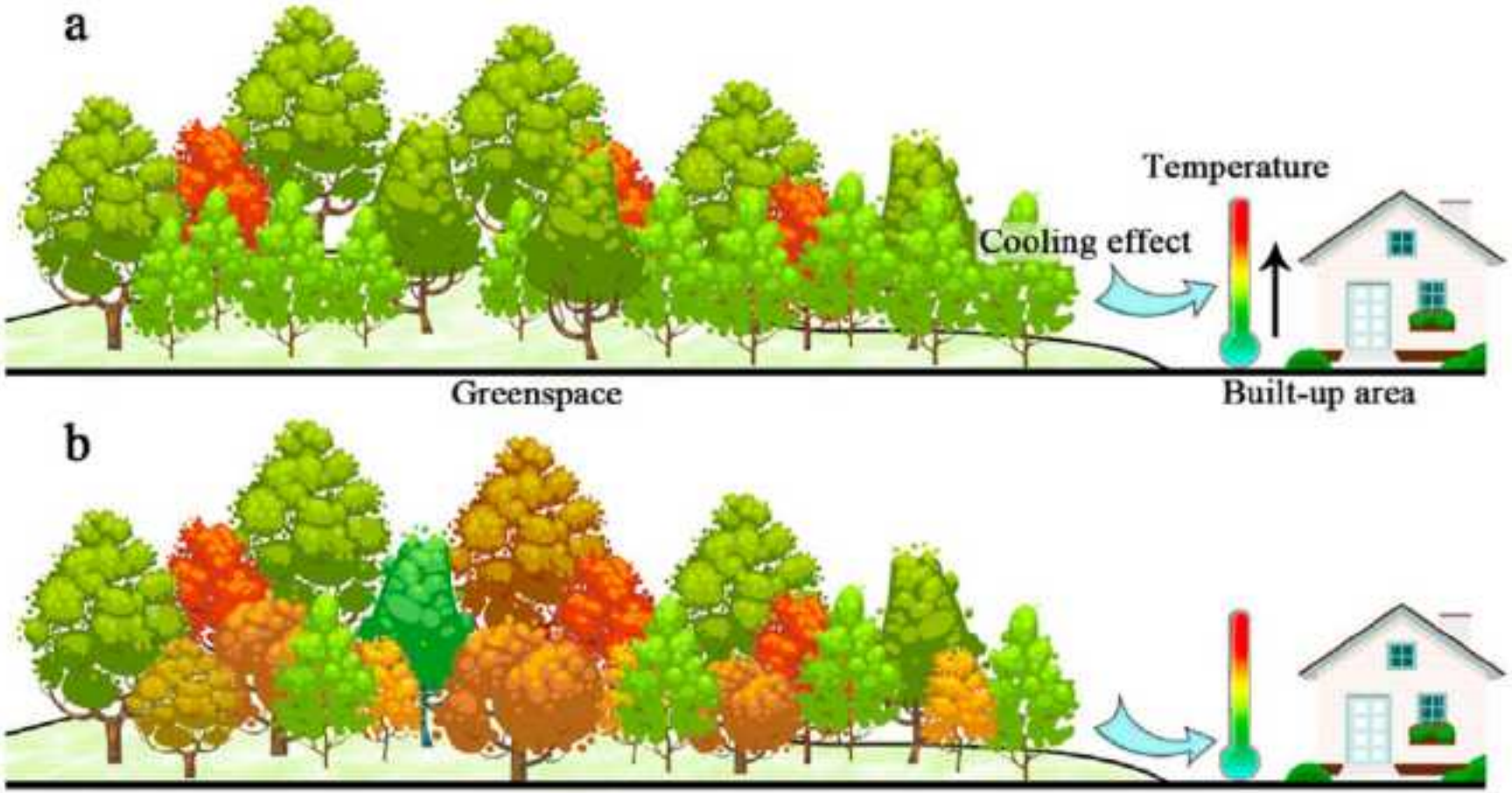
Max 300 m to nearest green space

The relationship between distance to green space and the level of physical activity among the population of Denmark was proven back in 2010:

Data derived from a nationally representative sample of 21,832 Danish adults.

Respondents living more than 1 km from green space had lower odds of using green space to exercise and keep in shape compared with persons living closer than 300 m to green space. (Toftager et al., 2010)

Not only the tree cover, but also biodiversity was positively correlated with the extent of cooling
(da Wong et al, 2021)



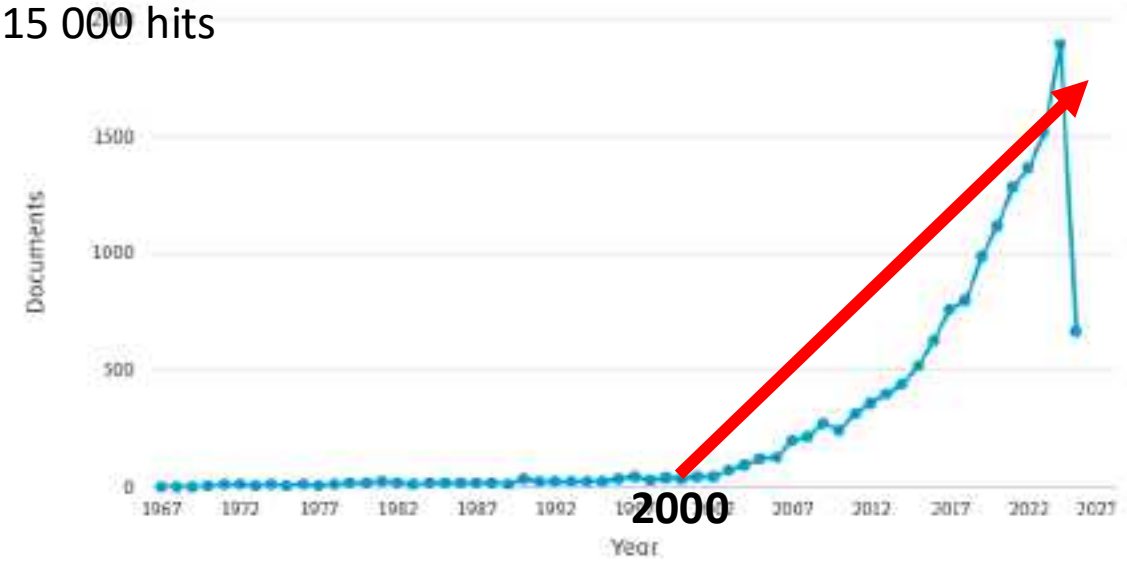
Greenspace (b) has a higher tree diversity. It provides a greater cooling effect than greenspace (a).

Rapid growth in science /literature related to urban (green) issues. Many agendas / functions

(Scopus, April 2025)

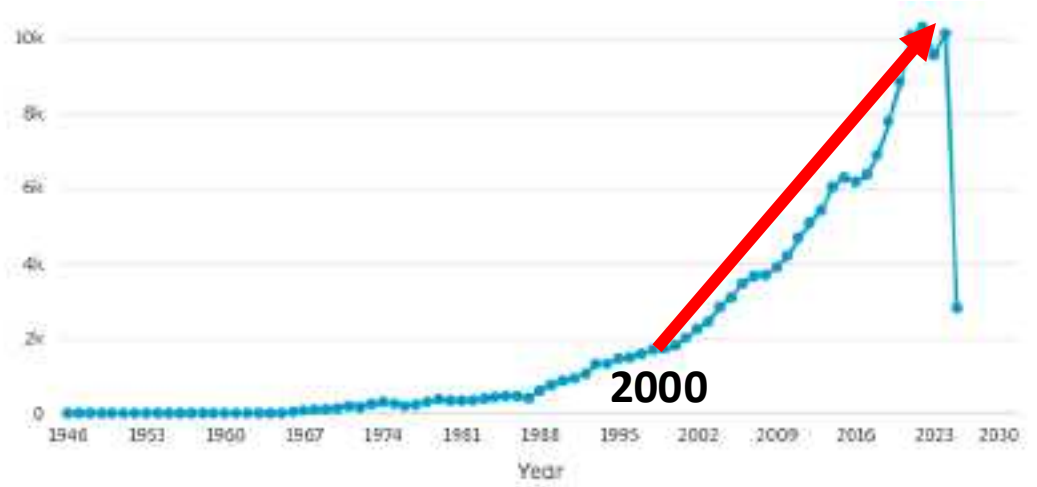
Urban+Heat+Island

15 000 hits



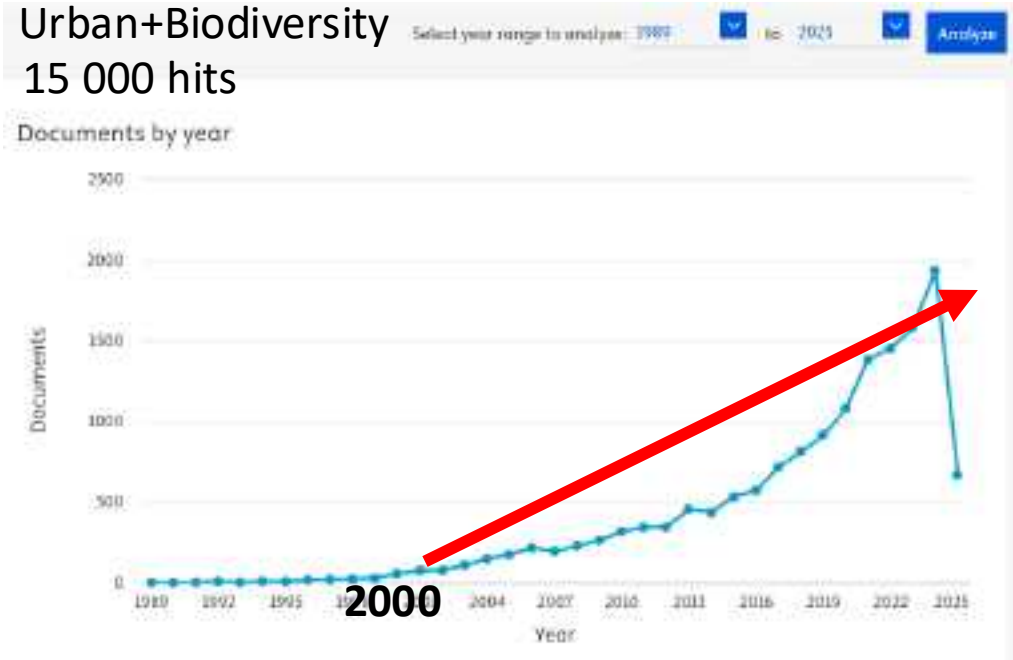
Urban+Human+Health

160 000 hits



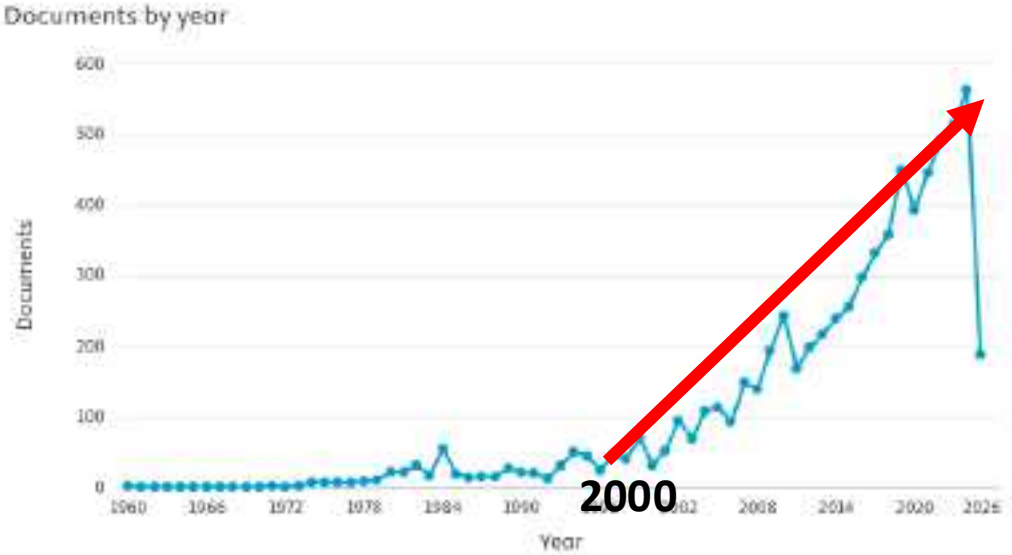
Urban+Biodiversity

15 000 hits



Urban+Stormwater+Management

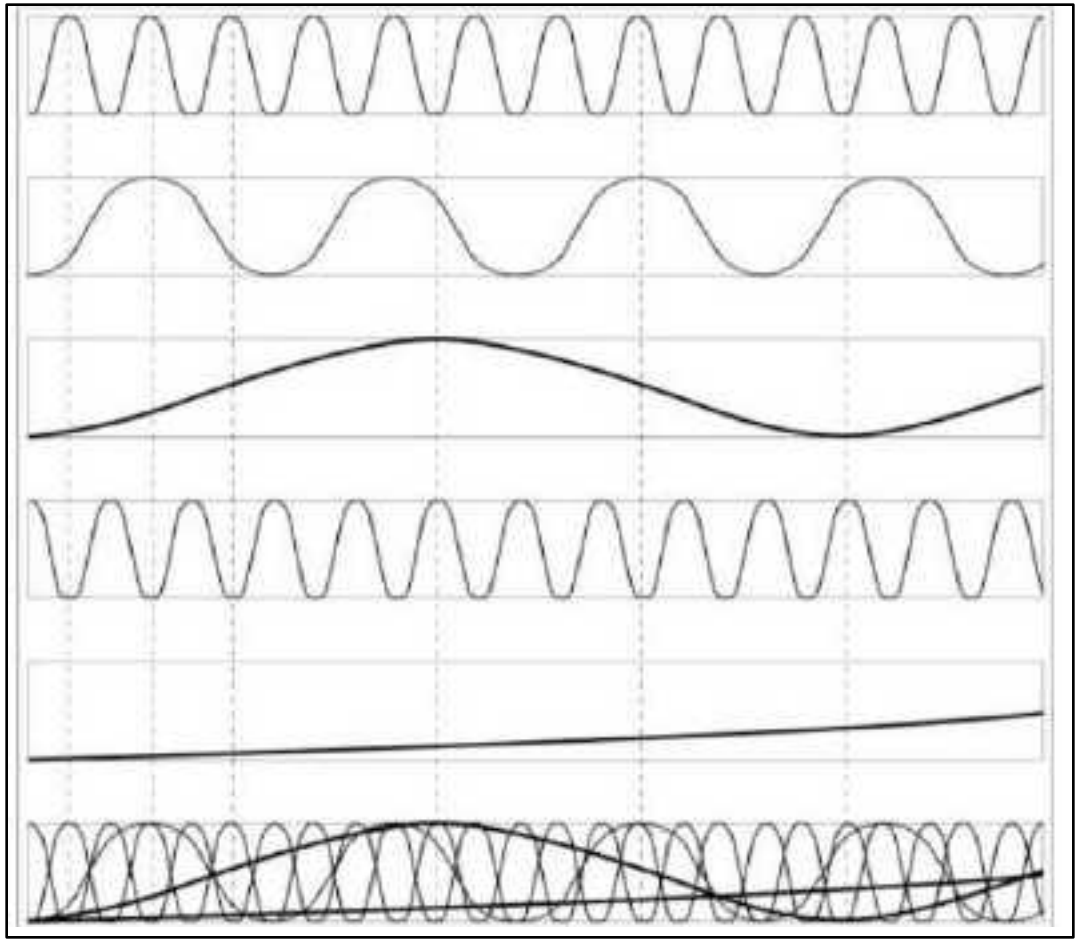
7 000 hits



- Key arguments for Blue/Green Infrastructure / Sustainable Storm Water Management is water handling in combination with multiple cultural ecosystem services (aesthetics, recreation, education etc.) + biodiversity

Management challenges

A time perspective –
”the urban rythms overlaps and challenge the operational management too…” (Hidra, 2024)



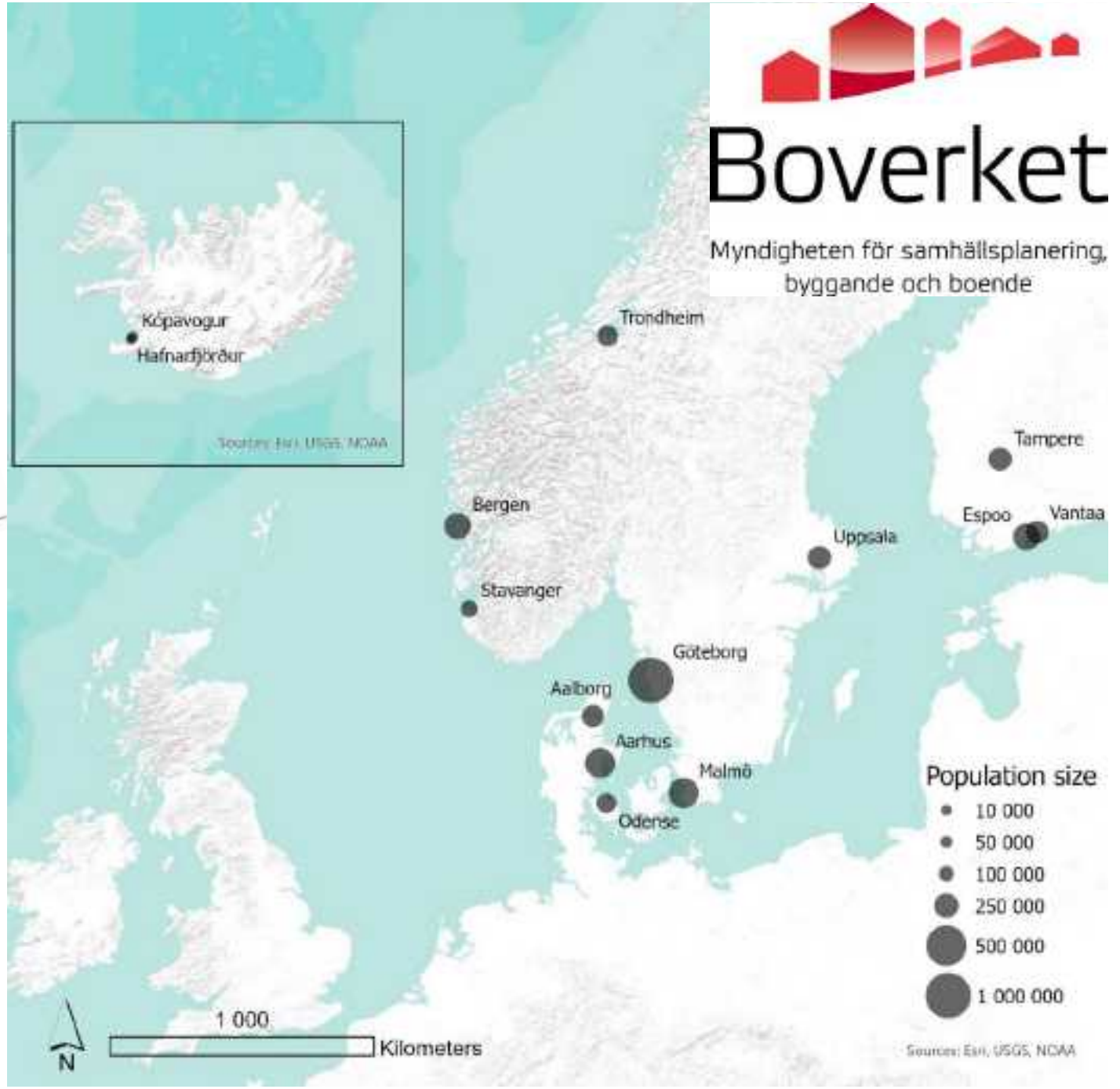
24h:	Use night and day
Week:	Weekday use / Weekend use
Year:	Seasonal use
4th year:	Political election period
10 years:	Avg lengths of a Compreh. Plan
30 years:	Lamppost change
60 years:	Sewer system change
30-80 years:	Avg street tree change
170 years:	age of early West. Urb. publ. parks

Nordic Managers perceptions of the main challenges

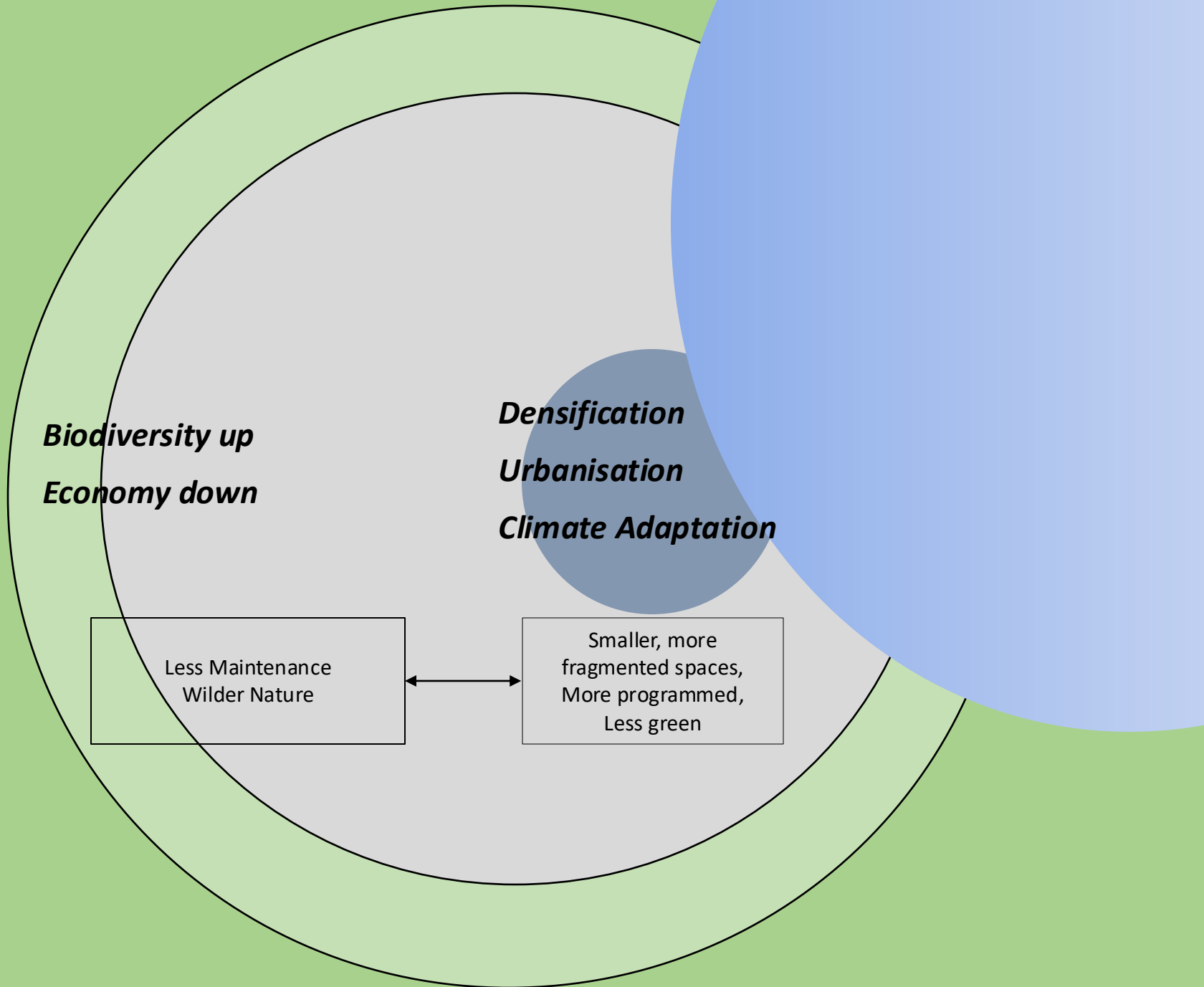
Three largest cities in each country
(ex capitals)

Interviewees:
– responsible for Green Space Planning / Management

Randrup, et al. ,2021




Ecosystem services
User pressure
Biodiversity
Multifunctionality
Densification
SDG
Urbanisation
Climate adaptation
Environmental matters
More nature
Strategic green plans
Connectivity


Biodiversity up
Economy down
Densification
Urbanisation
Climate Adaptation
Less Maintenance
Wilder Nature
Smaller, more fragmented spaces, More programmed, Less green

Governance challenges

PROGRAMMATIC ALIGNMENT

POLICY LEVEL

– Visions & policies

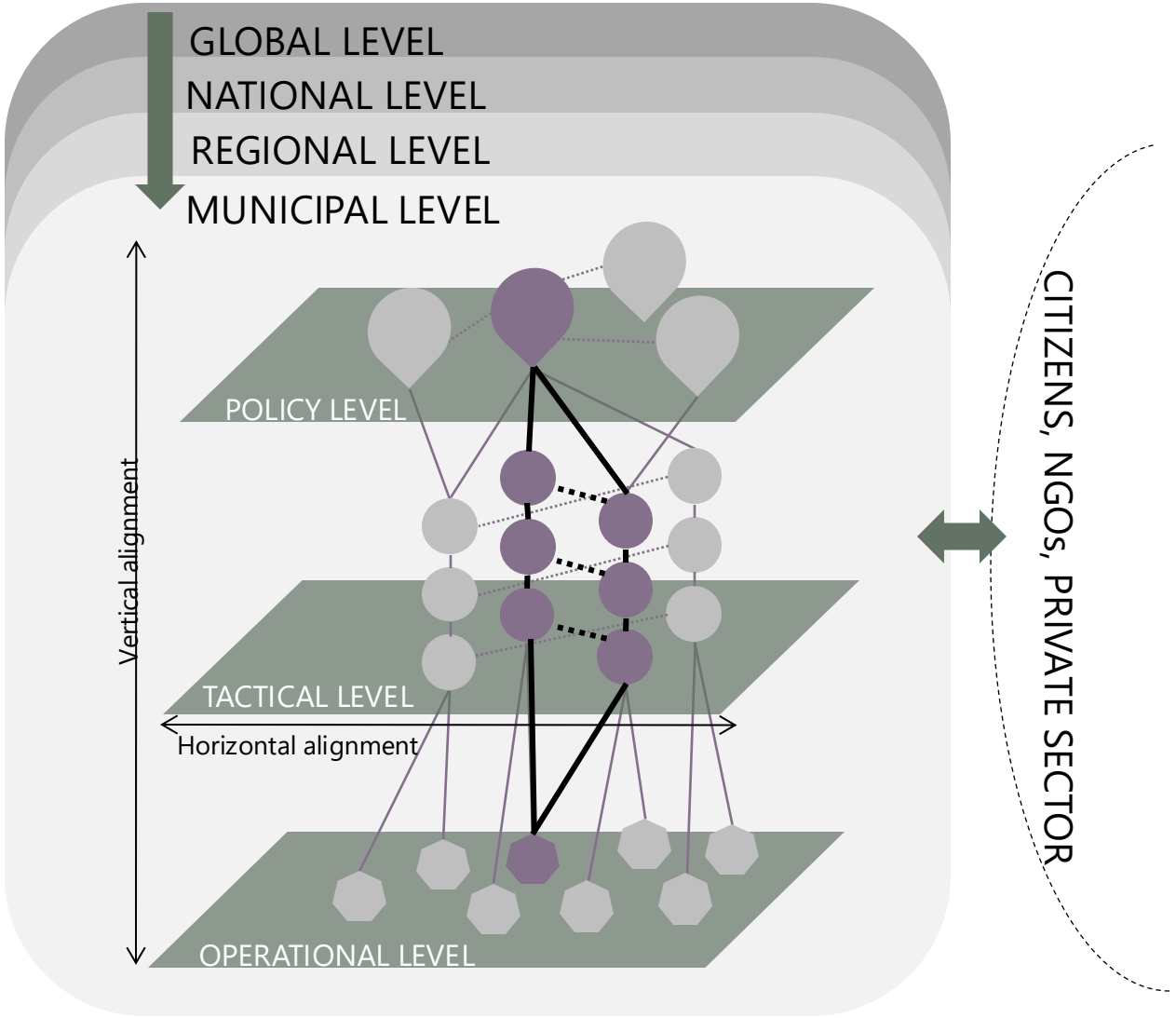
TACTICAL LEVEL

– Thematic departments

– Plans and strategies

OPERATIONAL LEVEL

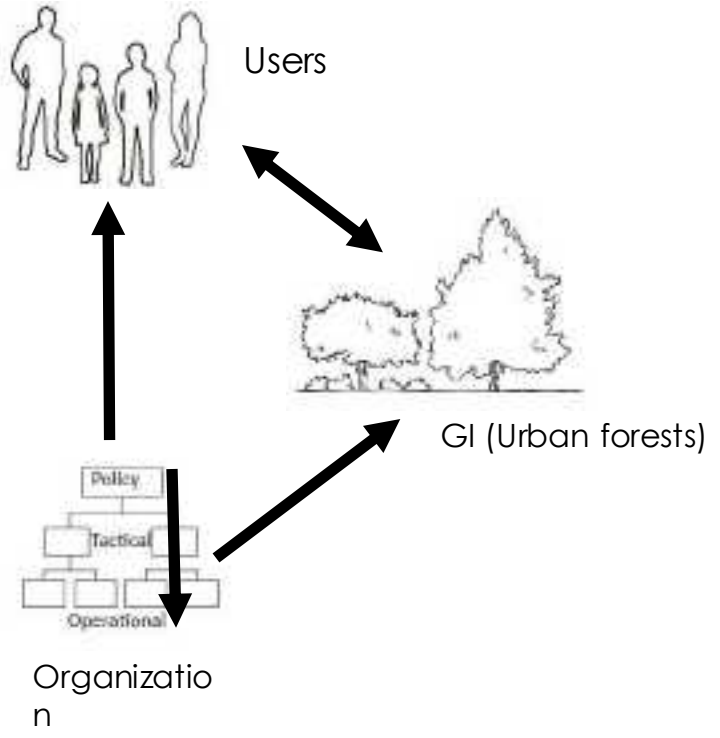
– Operational work



- It starts at policy level
  – ideally, with addressing prioritizations
- Tactical level concretises synergies and conflicts
  – find allies in other depts!
- Operational level is key, but often overlooked.
  – realization capabilites must be taken into account already at policy and tactical level

Green infrastructure as a health promoting resource

- Well established connection between GI and human health (Hartig et al., 2014; WHO ROfE, 2016; Markevych et al., 2017; van den Bosch & Ode Sang, 2017; Bratman et al., 2019)
- Effective land use planning is fundamental for delivering increased and equitable HH&W outcomes (Sallis et al., 2017; WHO, 2020)
- Overarching plans specify and prioritize land use to
  reflect political long-term ambitions
  guide subsequent planning stages
- Growing but still relatively sparse knowledge on how the relation is handled in planning practice



Randrup and Persson (2009)

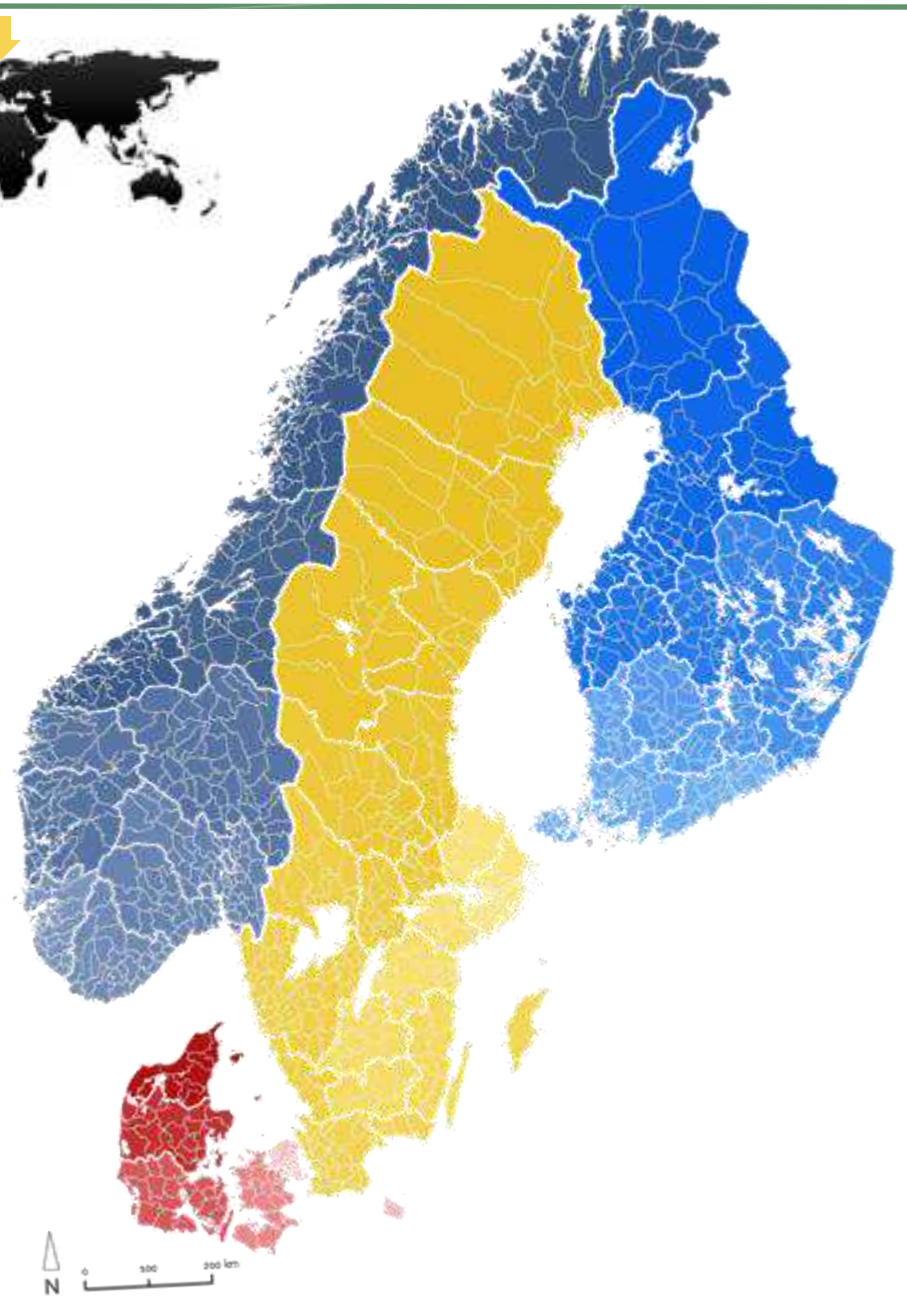
The Nordic context:

Denmark, Norway, Finland, Sweden

- Similar from a global perspective, **Welfare states** with **high local government autonomy** (Borges et al., 2017)

- Similar **planning traditions** and **public health promotional responsibilities** on local gov. level (Davies and Lafortezza, 2017; Helgesen et al., 2014)

- Share the **comprehensive plan** as most **overarching planning document on local level** (Borges et al., 2017)



How is the GI-HH&W relationship described in Nordic comprehensive plans?

- What **terminology** is used?
- How are the concepts **interlinked**?
- Which **goals** are mentioned?

Plans studied in

Täby (SE), Espoo (FI)

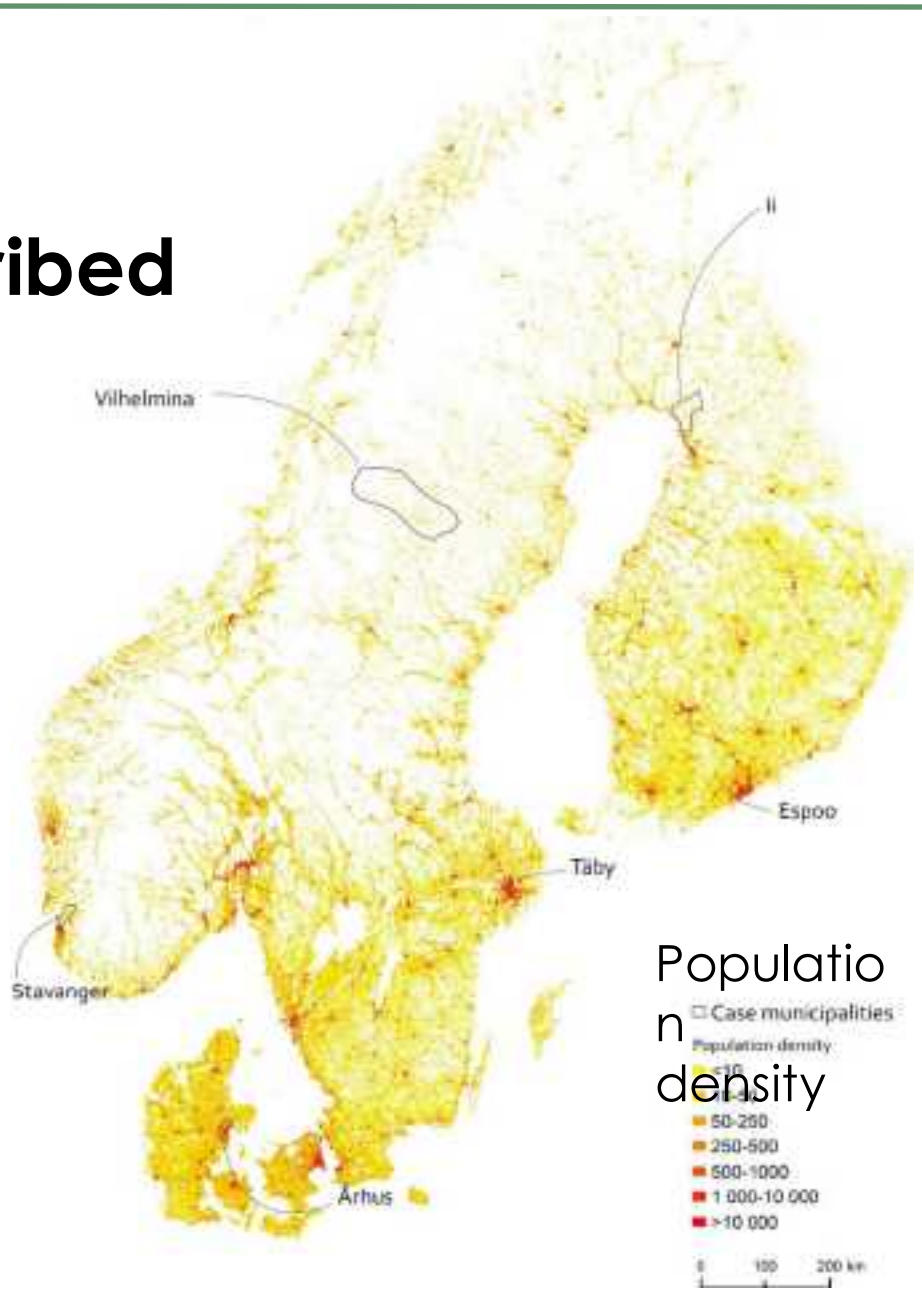
Stavanger (NO), Aarhus (DK)

Ii (FI), Vilhelmina (SE)

Capital region

2nd tier cities

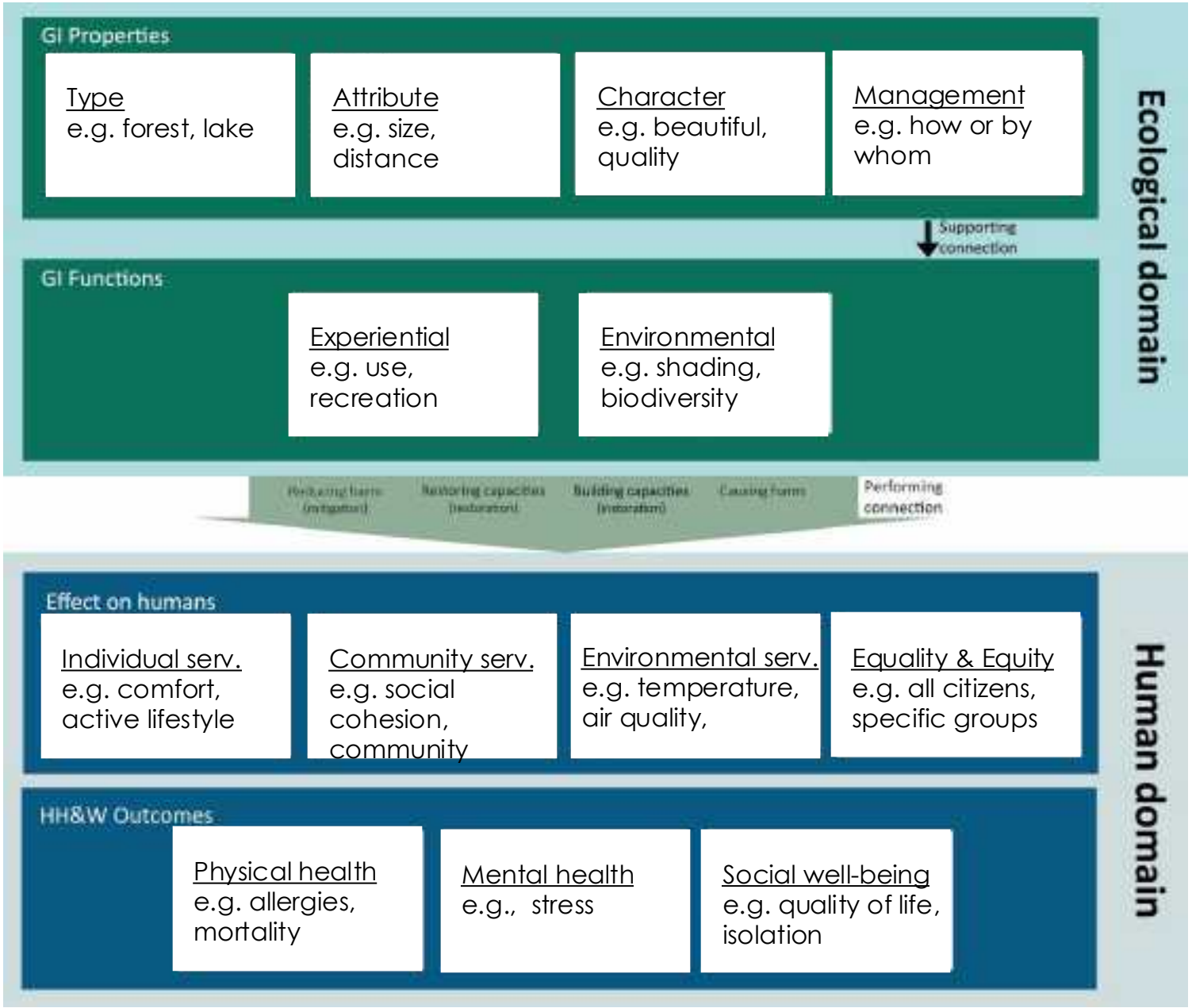
Remote rural



2nd World Forum on Urban Forests
Washington DC, 2023

SLU

Analytical Framework



Adapted from WHO Regional Office for Europe (2017), Roué-Le Gall (2015)

Conclusions

- **Health outcomes** are **not a strong focus** and superficially described in the studied plans
- **Strong focus** on describing connections between Types of GI and Functions of GI
- **Strong focus** on general use and activities; **less focus** on rest and social aspects
- Attributes such as **size and characters** describing naturalness, serenity which are key for de-stressing are generally lacking.
  (Grahn and Stigsdotter, 2010; Ode et al., 2017)
- **Goals and visions** are scattered and generally **superficial and spacious**

And in practice? (Interview study w. GI & public health practitioners)

- Planned goals are often spacious enough to support "anything"
  – good and bad
- Difference between "policy in plans" and "policy in use"
  – generous green visions are ignored or 'a hard bargain' in implementation stages
- Difference between planners' and managers' attitudes
  – Resources don't increase with responsibilities on operational levels
- Overall economic rationale supports short term investment focus
  – overlooking long term sustainability

From lack of knowledge (2018) to ‘we know what it takes – gives us the frames’ (2024)

Policy level	Lack of incorporation in legislative mandates (no formal requirements of urban green spaces) European Nature Restauration Law (2024) is a very recent exception
	Unclear leadership & responsibilities (fragmented / ‘siloed’ organisation)
	Lack of funding
	Lack of evidence of effectiveness
Tactical level	Lack of staff and time
	Lack of institutional capacity
	Lack of experienced expertise
	Lack of standards
	Lack of documented environmental values (getting better every day, but ….)
	Perceived risk in cost and performance
Operational level	Stakeholder engagement challenging (time and knowledge)
	Stakeholders many, varied and fragmented
	Lack of space
	Engineering culture
	Resistance to change

Qiao et al., 2018; Zen-Dong et al., 2024)