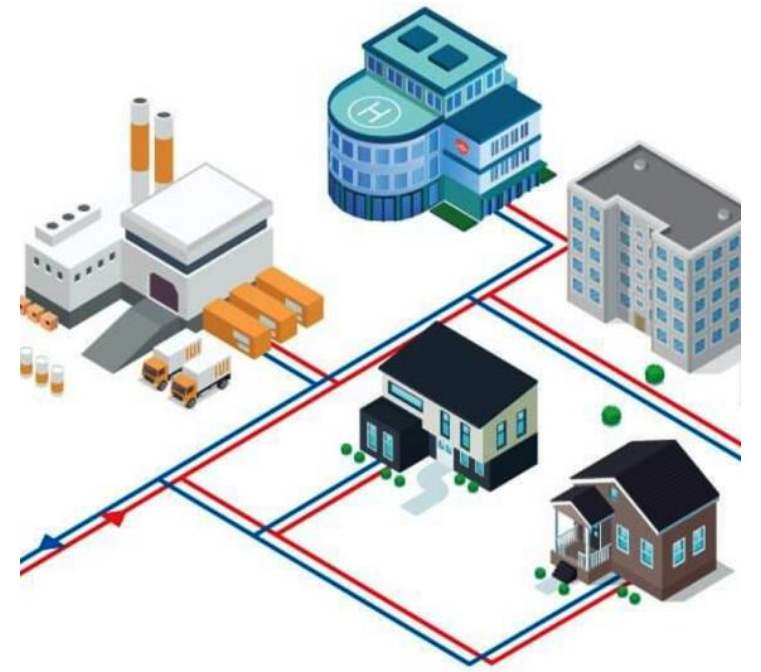


NATURVATION
cities – nature – innovation

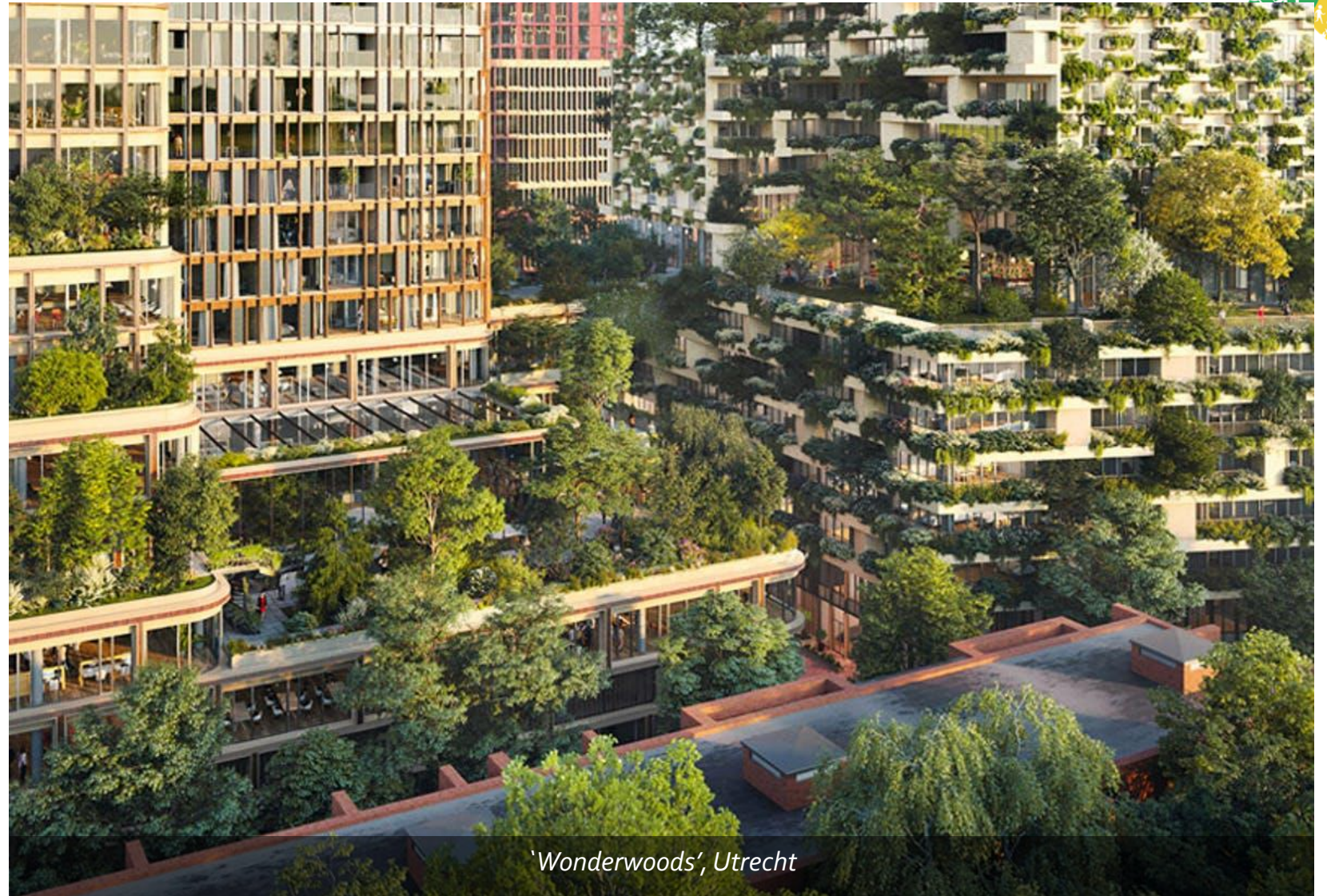
Best practices of Nature-Based Solutions in policy and planning

Sander van der Jagt



Route to a sustainable future?

The potential
of nature is
often
overlooked

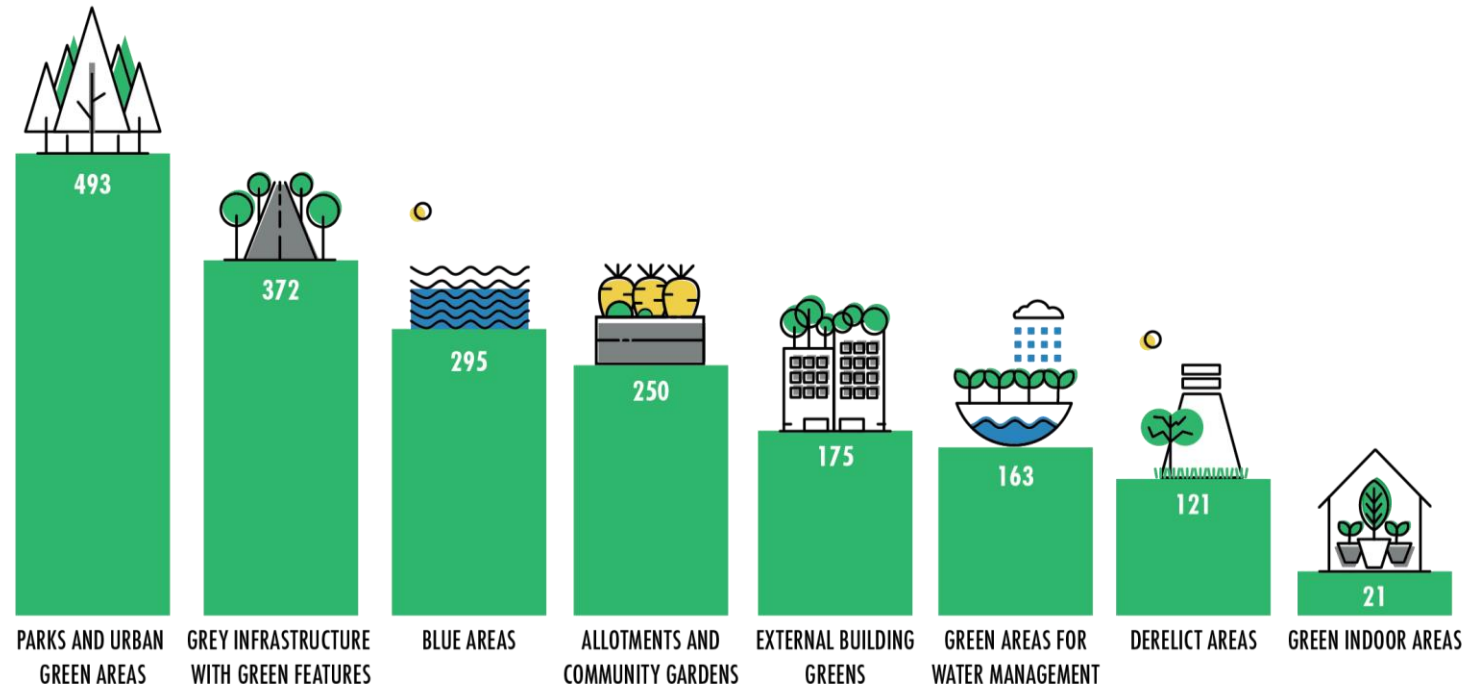


'Wonderwoods', Utrecht





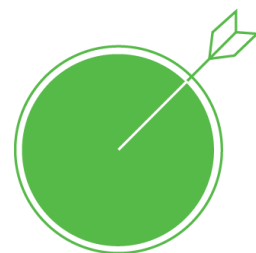
Different shapes & sizes of urban NBS



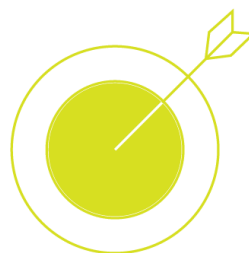
Source: Almassy et al. (2017)



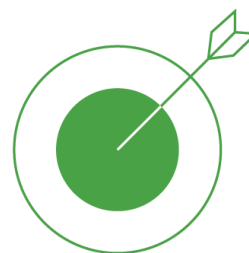
Urban nature is multifunctional



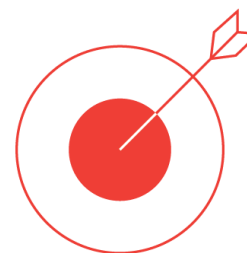
GREEN SPACE, HABITATS
AND BIODIVERSITY
(843)



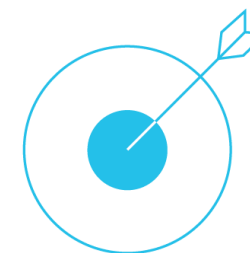
REGENERATION, LAND-USE
AND URBAN DEVELOPMENT
(584)



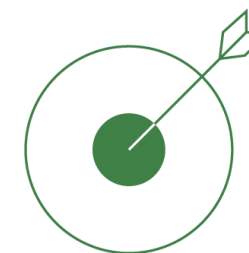
HEALTH AND WELL-BEING
(539)



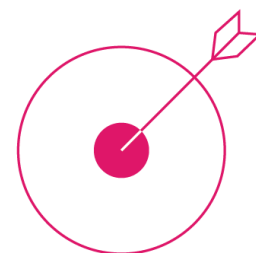
ENVIRONMENTAL QUALITY
(449)



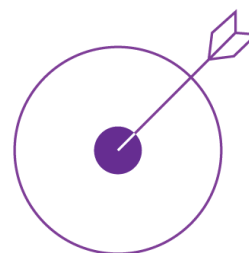
WATER MANAGEMENT
(351)



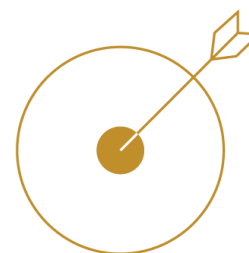
CLIMATE ACTION
(319)



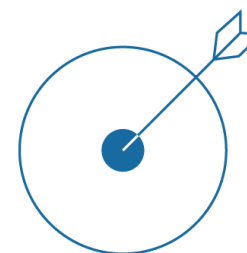
SOCIAL JUSTICE, COHESION
AND EQUITY
(242)



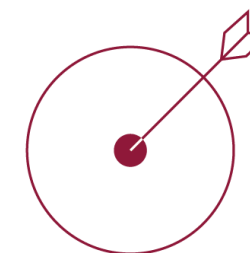
CULTURAL HERITAGE
AND DIVERSITY
(209)



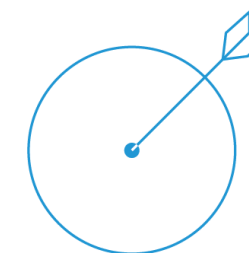
SCP
(204)



GOVERNANCE
(187)



ECONOMIC DEVELOPMENT
AND DECENT EMPLOYMENT
(144)



COASTAL RESILIENCE AND
MARINE PROTECTION
(66)



Average values of urban nature, by type
(2016 USD, per ha per year)

	Global data
Peri-urban areas	\$2,249
Park	\$11,992
Forest	\$2,386
Small urban green	\$1,948
Green connected to grey	\$1,248
Blue	\$2,805

→ Indication of (social) value that urban citizen place on urban nature

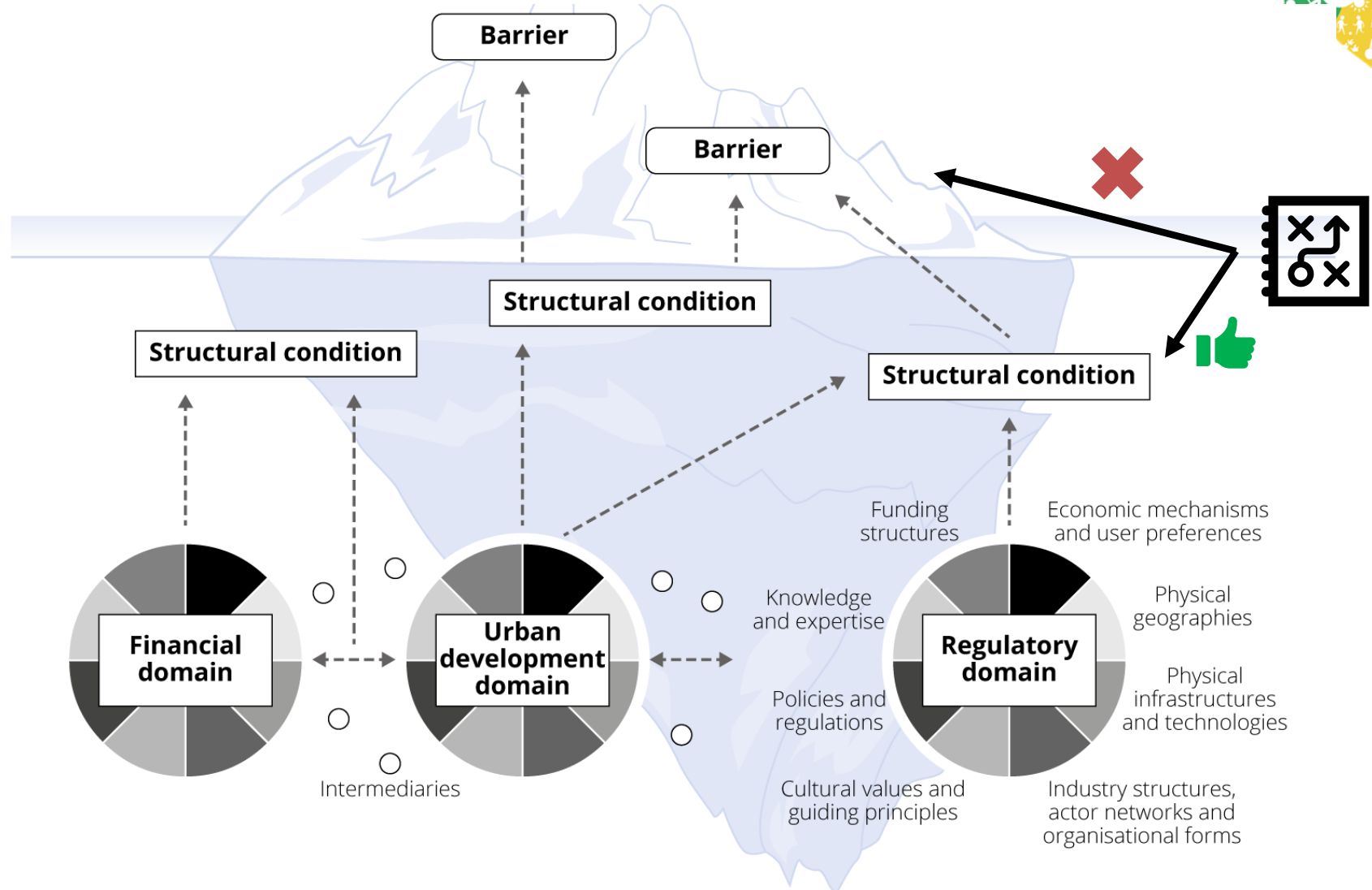
NBS valued differently by urban citizens

Bockarjova, Botzen and Koetse (forthcoming) Ecological Economics





NBS are not part of the mainstream



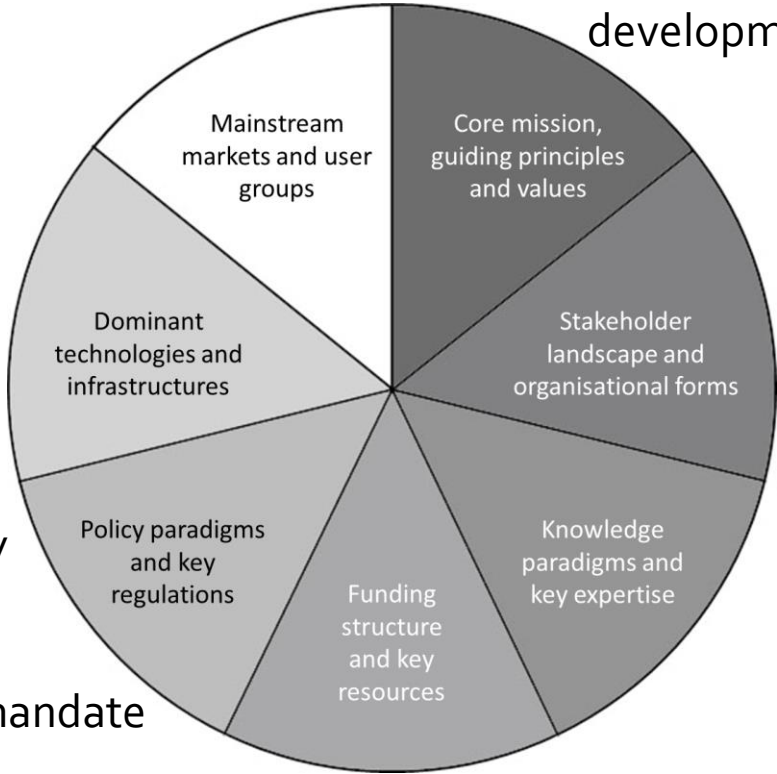


Unravelling the barrier

- Netherlands

Limited private sector engagement

Competition with other development priorities



Limited policy alignment

Weak public mandate

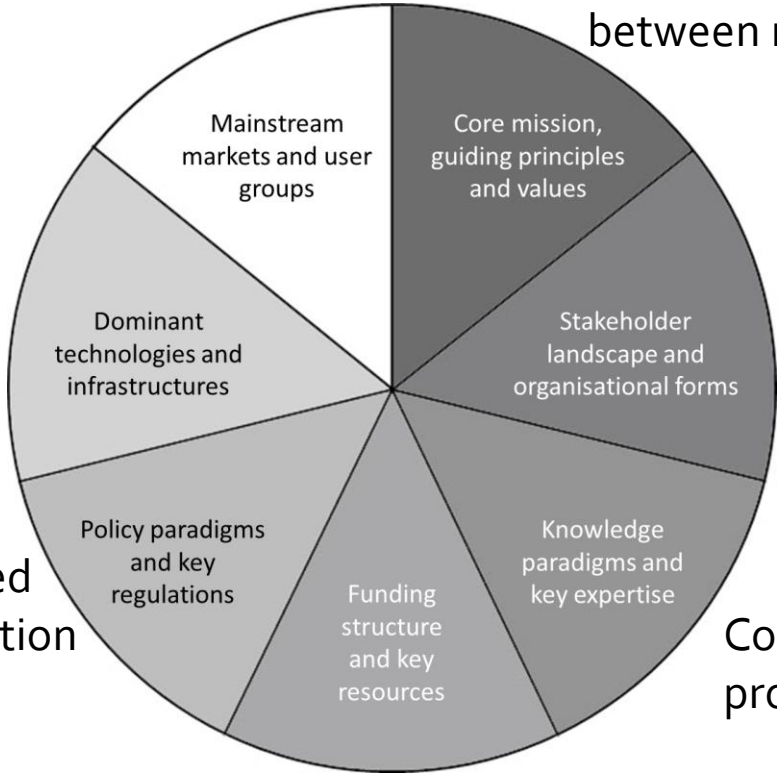
No national funding or financial incentives



Unravelling the barrier

- Sweden

Limited private (& third) sector engagement



Interest & capacity varies between municipalities

Insufficient networks linking public & private sector

Costs and benefits not properly understood

Top-down & formalized planning limits innovation

One barrier - different structural conditions

- NL and SE both have limited private sector engagement
- In NL main issue: limited policy steering
- In SE main issue: limited networking and scope for bottom-up experimentation
- Barrier best addressed through different interventions



Greenspace plans & policies at different levels





Green space factor



Current situation
BAF = 0.06

Sealed surface = 140m²
Semi-open surface = 59m²
Open soil = 1 m²



Planning variant A
BAF = 0.3

Vegetation = 115 m²
Mosaic paving = 25.5m²



Planning variant B
BAF = 0.3

Concrete surface = 21 m²
Vegetation = 79 m²
Mosaic paving = 100 m²
Green walls = 10 m²
Green roofs = 41 m²





Green deal instrument



- Agreements national government & private/third sector
- Stimulate green economy
- New business models
- Addressing regulatory barriers





Green benefit planner



Ecosystem Service	Indicator	Unit	Green Neighbourhoods	Green Network	Metropolitan Landscape	Urban parks
Air quality	PM ₁₀ retention	thousand kg/yr	2.4	-	0	2.7
	PM ₁₀ retention	million €/yr	0.13	-	0	0.15
Health	Reduction in probability of being overweight	%	0	1.0	2.0	3.0
	Reduced number of visits to GP	thousand visits/yr	3	2	0	1
	Reduced health costs due to urban green	million €/yr	2.4	1.9	0	1.0
	Reduced health-related labour costs due to urban green	million €/yr	11.8	9.0	0	5.0
Physical activity	Additional time spent on outdoor physical activity	million min/yr	0.3	0.3	-	0.2
	Cycling	million km/yr	143	49	214	199
	Cycling	km/person/yr	137	47	205	190
	Time spent cycling to-from work	million min/yr	0.5	0.4	-	0.1
	Avoided premature deaths from cycling to-from work	lives/yr	4	3	-	1
	Avoided premature deaths from cycling to-from work	million €/yr	12	9	-	3
Property value	Contribution to property value	million €	51	41	0	12
Recreation	Visits to recreation areas	million visits/yr	0	0	10	19
	Visitation expenditures	million €/yr	0	0	49	88
Urban cooling	Decrease in temperature	degrees C	0.01	0.01	0.00	0.03
	Area with > 1.5 degrees C cooling by green	thousand ha	9	7	0	1
	Area with > 2 degrees C cooling by green	thousand ha	9	8	0	4
	Area with > 2.5 degrees C cooling by green	thousand ha	0	6	0	3
Water storage	Reduced rainwater in sewers	million m ³ /yr	1.2	1.1	0	0.8
	Reduced water treatment costs	million €/yr	0.9	1.1	0	0.6

Source: RIVM, 2018



Stepping stones to mainstreaming



<https://naturvation.eu/mainstream>

Conclusion

- Nature-based solutions needed for sustainable societies
- Mainstreaming requires moving beyond the 'barriers'
- It relies on a patchwork of actors and measures
- Different countries need different governance interventions





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