Indicator development for the assessment of nature-based solutions in cities

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The context

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SUSTAINABLE CITIES AND LIFESTYLES

✓ Low environmental impact
✓ Physical and psychological wellbeing
✓ Social cohesion, innovation and justice
✓ Economically viable

Neighborhood and city quality – main determinant for sustainable lifestyles and wellbeing

The crave for social connection (Dumitru and Garcia-Mira, 2016)

The need for robust impact assessment

- A solid evidence base for impacts at different scales

- Multi-level evaluations: nuanced accounts of impacts at local levels; appropriate-level standardization to ensure comparability across cities

- Robust data generation –effects over time, for different social groups

- Evidence-based policy choices regarding nature-based solutions

- Getting beyond **current blockages and barriers** in reliably assessing impacts

What we build on for indicator development

Bottom-up participatory approach to indicator development

1. Literature review: Existing reviews of indicators, relevant literature and reference frameworks on impacts and pathways to them (EKLIPSE, MAES, RSFC, IRIS etc.)

2. Identification of characteristics of successful and failed processes for the mainstreaming of nature-based solutions – database of 345 cases across Europe so far

3. Mapping innovative emerging experiments involving nature-based solutions across Europe

4. Capturing and sharing pre-existing city expertise, including KPIs used

5. European Dialogue on Nature-based Solutions in A Coruña

First city consultation

Second city consultation

Third city consultation

Gaps and barriers in impact assessments of nature-based solutions	Principles to guide indicator development
Lack of clear distinctions between direct and indirect impacts	We do not fear – evaluation of complexity and complex causality
Process versus outcome	
Lack of clear conceptualizations and robust indicators for social cohesion, and health and wellbeing	Delve into social cohesion and health impacts – clarification of pathways
Lack of clarity regarding pathways and intermediate mechanisms	Enablers for sustainable behavior change
Lack of evidence on uses, behaviors, experiences, social network effects in the interaction with NBS	Include actual types of interactions with different types of NBS – BEHAVIOR AND EXPERIENCE MAPPING, (on top of: vegetation, biodiversity or green space accessibility mapping etc.)

Gaps and barriers in impact assessments of nature-based solutions	PRINCIPLES TO GUIDE indicator development
Differential effects on social groups	Include magnitude of impact for different groups in impact evaluation and relative position change – empowerment

Very few trade-offs identified	• Focus on interactions (synergies, trade-offs) and identify amplifiers/enablers – both nature-based and social
	
	   • We know maintaining wilderness is important for both biodiversity and restoration – trade-off: lack of safety for women, for example.
	
	   • We hope opportunities for intergroup social contact will promote actual and positive social contact – but might do the opposite!

Impact evaluation is mostly short-term	Appropriate temporality and maintenance of evaluation – some things cannot be rushed if we want to build a solid evidence base!

Examples

Characterization of the nature-based solutions	BEHAVIOUR & EXPERIENCES IN PLACE	Outcomes/Effects
• Biodiversity enhancement* (percentage of green space – Eklipse) (Kabisch and Haase, 2014; van den Berg et al., 2010). • Environmental quality* • Geographical Accessibility* (Eklipse: NDVI, proximity measures Maas et al., 2006; Vries et al., 2003) • Availability and distribution of different types of NBS* (Cohen et al., 2012; Ernstson, 2013: Kabish and Haase, 2014; Raymond et al., 2016)	• Type of interaction with NBS during the process of design and implementation (passive/active; alone or accompanied; degree of organization-spontaneous/organized), and once it is in place as well. • Characteristics and quality of experience – Restorative? Safe? Meaningful?	• Positive relationships among social groups • Empowerment • Sustainable Lifestyle adoption • Reduction in autoimmune disease*

Primary Indicators

Characterization of the nature-based solutions

- Neighbourhood or city composition – depending on scale
- Geographical Access

BEHAVIOUR MAPPING

Use of NBS per social group (age, gender, socio-economic and socio-cultural categories) –
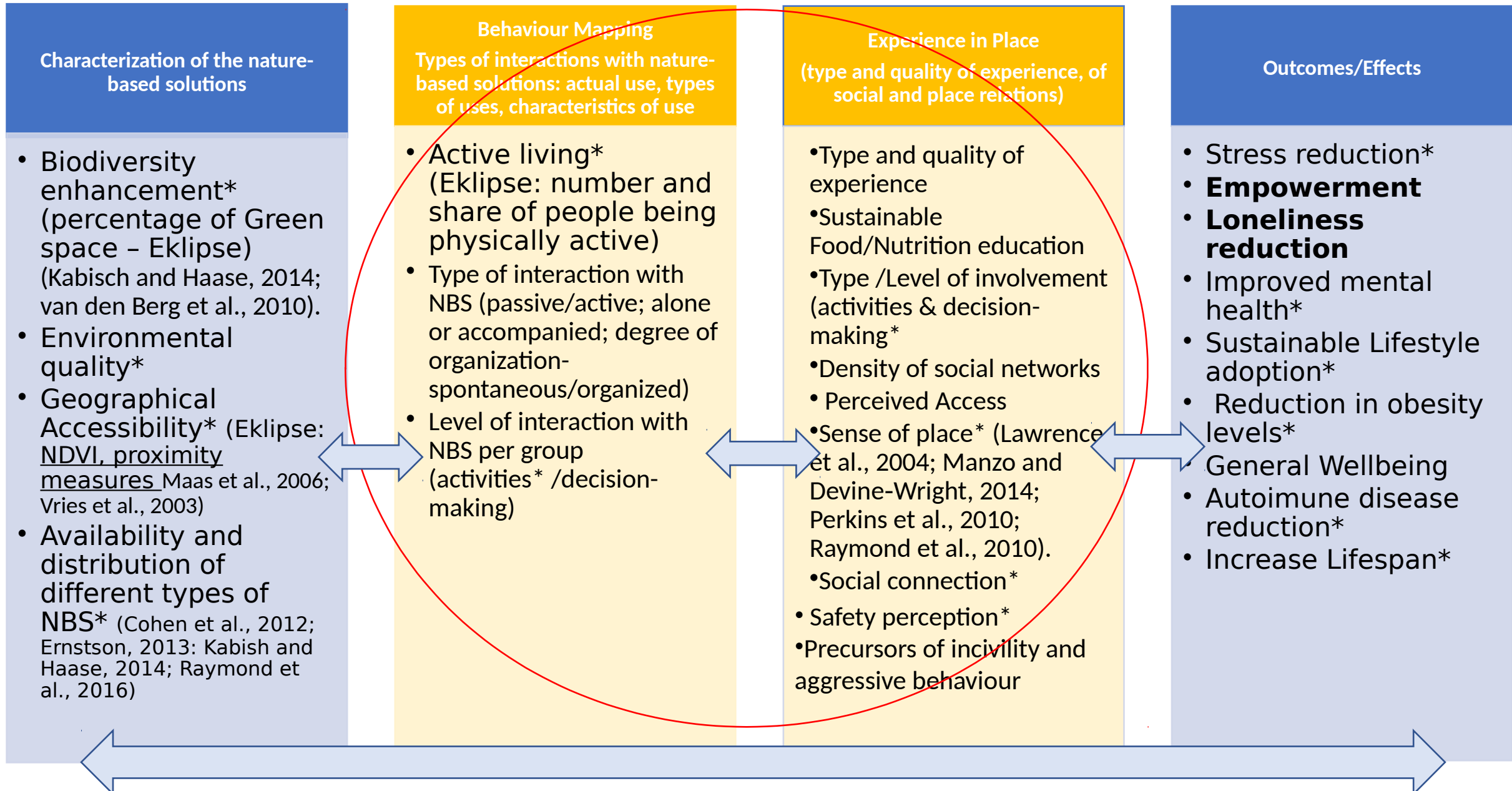
- Type of interaction with NBS (passive/active; alone or accompanied; degree of organization-spontaneous/organized)
- Frequency and duration of interaction
- Motivations for use

EXPERIENCE MAPPING

Perception of and experience in physical space

- -Perceived Access
- Perceived quality of NBS
- Objective and perceived safety

Indicators
Social Cohesion
(examples)

Social relations
- Social contact/networks
- Quality of relations
- Civic Engagement

Empowerment
- Impact
- meaning

Place relations
- ✓ Space appropriation

Orientation towards a common good
- ✓ Feelings of responsibility for the common good

(In)Equity
- ✓ Compatibility of uses

Indicators
Social Cohesion

Social relations

Social contact/networks
- Opportunities for social contact
- Density of social networks
  (e.g. number of friendships made /new people known) (within and inter-group)
- Frequency and quality of social interactions
- Levels of trust

Quality of relations
- Enhanced social connections – reduced loneliness
- Acceptance of diversity/ mutual tolerance and support
- Reduced perceptions of social threat
- Actual and perceived safety

Civic Engagement
- Levels of involvement with the NBS
- Ownership of process / Type of involvement

Empowerment
- Autonomy
- Competence
- Relatedness
- Impact
- Meaning
- Resilience

Place relations
- Space appropriation
- Attachment to place
- Pride

Orientation towards a common good
- Feelings of responsibility for the common good
- Ownership Perception
- Solidarity between groups
- Acceptance and compliance of the social order and the social rules – reduced incivility

(In)Equity
- Level of interaction with NBS per group (activities /decision-making)
- Inclusivity – welcome/belonging
- Reduced gap between groups on all impacts

Genk: Stiermerbeek Valley

A multifunctional linear park in the valley of Stiemerkeek. Stiemerbeek cointains a green line for walking and biking, promoting use the sustainable transport between different neighbourhoods (variational in ethnical and cultutral diversities.

Aims

More opportunities for physical activity in the valley for all social groups

People tying their identities to Stiemerbeek Valley (collective memory/ cultural heritage) (sense of place)

Stress reduction

More contact with

Characterization of the NBS

- Geographical Accessibility

- Environmental quality

Behaviour and Experience and place

- Adoption of active mobility and recreation

- Frequency, duration and type of contact with nature

- Meaningful and sustainable leisure

- Knowledge of biodiversity and sustainability

- Place attachment and identity

Outcomes/Effects

- Reduced obesity

- Space appropriation, higher involvement with NBS

- Reduction of stress-related physical and mental illness

- Empowerment

- Sustainable lifestyle adoption

MUCHAS GRACIAS
POR SU ATENCION

Más información:

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