

Valuing & Investing in Nature-Based Solutions for Urban Sustainability



KEY POINTS

- A clear valuation and assessment framework for NBS can lower uncertainty for financiers
- Volatility of value in time, context and between stakeholders poses a challenge for such a framework
- Business models for NBS should be specified per NBS type and urban domain
- Beneficiaries of different co-benefits of NBS need to be identified to enable finance and business models
- Finance for NBS can be enabled by creating scale through syndication between similar projects.

ABOUT THE PROJECT

NATure-based URban innovATION is a 4-year project involving 14 institutions across Europe in the fields of urban development, geography, innovation studies and economics. We are creating a step-change in how we understand and use nature-based solutions for sustainable urbanisation.





Briefing expert panel 8th February 2018

The implementation and mainstreaming of nature-based solutions (NBS) to address urban sustainability challenges is highly dependent both on how they come to be valued and the ways in which they can secure investment over the long-term. These issues are being addressed by the H2020 NATURVATION project (www.naturvation.eu). On 8th February 2018, we convened a small expert panel to exchange ideas and evidence on these fundamental challenges and potential pathways to mainstreaming urban NBS, drawing on the knowledge being generated in the project as well as from invited experts. The expert panel was divided up into three themes: (1) valuation and assessment (2) innovation and business models and (3) finance and investment. Small group discussions provided space to share ideas on each theme in more detail. In this briefing note, we provide a summary of the challenges and pathways that emerged during our discussion.

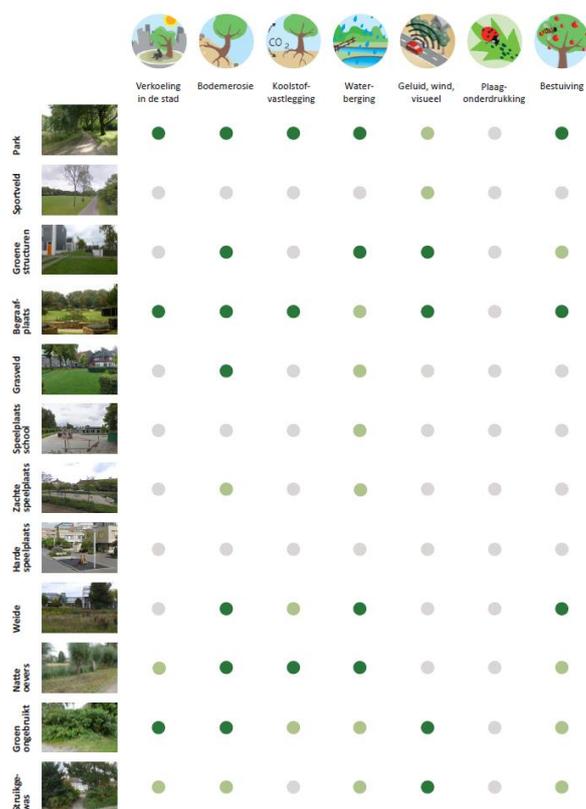


Figure 1 Assessing benefits of NBS in the city of Zwolle

Valuation and assessment

Assessing (and communicating) the value created by urban NBS is directed at clarifying the benefits delivered by different types of NBS to support decision-making. Arjan Ruijs (PBL) shared ongoing work from NATURVATION on developing an assessment framework for NBS, including a visualization of the benefits of different NBS interventions in the city of Zwolle (Figure 1). Marija Bockarjova and Wouter Botzen (USE) shared their work on creating a database of economic values of urban NBS, building on a large range of existing studies ([available on the NATURVATION website](http://www.naturvation.eu)).

1. Volatility of value. It varies in time, context and between stakeholders and social groups. How do we deal with this when valuing NBS? E.g. after a flood people value risk mitigation of NBS more than 5 years later when the flood is forgotten. The societal importance of topics changes over time (i.e. climate change versus biodiversity). Most assessment methods value nature at one point in time and do not examine such dynamics.
2. Non-monetary values: how do you make a complete 'set' of values that are important if some are not in monetary terms, and how do you assess trade-offs between them? For example, how do you include the time citizens put into implementing and maintaining NBS, and how to include ethical values in a



meaningful way? One way could be aggregation of monetary values on the one hand, and non-monetary exclusion criteria on the other. How to assess trade-offs between different types of value is a related challenge.

3. Deciding whether to develop a new assessment framework within the context of NATURVATION or direct our efforts towards optimization of an existing one is another key question. The impact of an assessment framework is dependent on both its quality and on its adoption rate by key decision makers: the purpose and potential uptake of such a framework (as well as of existing ones) should therefore be part of deciding what to direct efforts towards.
4. NBS have many more different stakeholders who benefit from different types of value than i.e. renewable energy, grey infrastructure and real estate projects. This dispersion of value across stakeholders makes it difficult to coordinate 'value capture' for financiers.
5. The focus in most assessments is on advantages of NBS and not on problems and disadvantages (e.g. badly maintained nature in cities may worsen social problems).
6. Some technologies are still in an innovation stage, which increases perceived uncertainty of investment value (such as green roofs).



Several pathways were identified:

1. A clear valuation and assessment framework for NBS can *lower the uncertainty (risk) for financiers of NBS*. For grey infrastructure and investments into renewable energy, return rates (in monetary and/or CO2 emission savings) are well known and display little variation. This is not the case for NBS, where assessment frameworks are yet unclear and valuation is more complex, also because of the diversity of co-benefits. Often in times of economic hardship, public budgets for environmental issues like NBS decline.



Economic valuation and an assessment of the wider benefits of NBS can help demonstrate the value of nature in such times.

2. Clearly distinguish which values are relevant for *which kind of decision-makers* (e.g. economic values and contribution to threshold 'standards' are important for an investment bank, a combination of economic, social, and ethical values for municipalities). NBS values should be matched with different user groups.
3. Understanding the contribution of NBS over time, and the kinds of maintenance required to prevent negative effects of NBS, is essential.
4. Recognising that the assessment of NBS can never be complete, it is important to realize that while researchers can offer information about NBS values, the choice of trade-offs between costs and benefits and different kinds of NBS should be made by policy makers and practitioners in line with their objectives.
5. In order to mainstream NBS it should be made fashionable (e.g. through pilots and experimentation the benefits and innovative side of NBS can be demonstrated to people). However, in order to enable a large uptake of NBS beyond small innovative niches, *economic incentives* for NBS may be needed (e.g. through tax credits, subsidies). In addition, the wider contribution NBS can make to society needs to be captured to ensure public support. Special care should be given to the interest and capacities of low-income households. NBS should be adapted to local needs and awareness should be created about its benefits, since perceptions by citizens of the values of NBS may be incomplete.

Innovation & business models

In this session Rob Raven presented how innovation with NBS was taking place in the cases found in the NATURVATION database (approx. 1000 NBS examples from 100 cities in 24 European countries, available on the NATURVATION website). Carleen Mesters presented the work of the [Green Deal Green Roofs](#), a stakeholder consortium that builds societal business cases for green roofs, including seven pathways to stimulate uptake of green roofs in the Netherlands (Figure 2).



Figure 2 Seven pathways for mainstreaming green roofs



We identified the following gaps for innovation and business models of urban NBS:

1. NBS is an umbrella term for many different types of intervention and not a level at which we can formulate successful business models. Instead this needs to be translated to NBS types.
2. We need to improve our understanding of how innovating with nature differs from technological innovation. For example, nature (and its benefits) has indivisible, place-based and integrative properties; it is sometimes considered 'wild' as opposed to technology and therefore more risky (both a service and a potential danger); it contains an ethical dimension (i.e. chopping trees has an ethical dimension unlike breaking open a road) and nature is fundamentally collective (a 'commons').

The following pathways were identified to innovate business models for the mainstreaming of NBS:

1. Harness the *specific qualities of nature* (the nature-related characteristics mentioned above) to innovate and build business models
2. Capture the *commons* element in business models: often co-benefits of nature are regarded as externalities but this should be reframed as common interests/value, used as a basis for collective funding models (i.e. crowdfunding) and provide argumentation for a larger role for public authorities
3. Specify successful pathways, innovations and business models *at the level of NBS types* and the *urban domains* in which they operate. E.g. urban agriculture needs different business models than SUDS or parks.
4. NBS should be instrumental in *reframing* the environment as an opportunity/solution instead of issue/cost. For example: funding of parks in Newcastle by hospitals because they contribute to health, versus perception as a 'bleeding' cost centre on the balance sheet of municipalities.

Finance and investment

In the third session, Helen Toxopeus (USE) presented NATURVATION's literature review on [finance and business models](#) for urban NBS. Sylvaine Rols from the European Investment Bank presented their [Natural Capital Financing Facility](#), created to finance innovative concepts in the field of biodiversity and



ecosystems in Europe. Sylvaine discussed existing initiatives and challenges for measuring and accounting for biodiversity and ecosystems as part of the financial decision-making process.



The following constraints were discussed:

1. Lack of consensus on appropriate biodiversity and ecosystem services *metrics and reliable underlying data* makes inclusion in financial decision-making more challenging. Similarly, metrics may lead to the argument that some NBS (such as green roofs) may not deliver enough benefits to allow for high subsidies. In some municipalities, subsidies have been discontinued for this reason.
2. *Lack of awareness* within financial institutions (like the EIB) of relevance and value of NBS during the credit process, i.e. when financing the built environment.
3. NBS is an umbrella term, only *some types of NBS* would be eligible for financing under the EIB NCF, for example when related to water management (risk reduction), offsets, habitat banking. Urban green spaces are often difficult to finance privately because of the challenge to capture private revenues.
4. The *scale* of the NBS project to be financed is a crucial criteria for eligibility for many financiers – projects are often too small (i.e. NCF starts at €2 m; project finance generally starts at €50 m).
5. Identifying *beneficiaries* for the different types of co-benefits from NBS is crucial for NBS to be financed. Not only are the benefits of NBS often uncertain – a key issue in innovation finance – obtaining finance depends on commitment and willingness/ability to pay from a diversity of potential beneficiaries, makes the financing process complex.

We identified the following pathways:

1. *Create scale* by setting up syndications (joining forces) between many similar projects (i.e. this allowed [rewilding Europe](#) to attract finance from the NCF). Find intermediary parties that coordinate such collaboration that can help in attracting larger scale funds and define value capture options (e.g. habitat banking and ecotourism)
2. *Decrease uncertainty* of NBS adoption through impact and financial metrics (returns / risks). This helps to make technology more ‘proven’ and can support attention in decision-making to i.e. biodiversity. The database of 1000 NBS could be used to improve and test such metrics.
3. *Cultural change* within financial institutions, i.e. by including people with diverse backgrounds into financial decision-making (i.e. biologists for developing ecological assessment frameworks).
4. *Build momentum and awareness* for NBS, in a similar way that climate is now a ‘hot topic’ which has led to increased political will. Flagship projects (i.e. [Wonderwoods](#) in Utrecht) can play a role.