



Nordic NBS policy brief

Status of nature-based solutions in the Nordics

The multi-functional character of nature-based solutions provides a great opportunity to address societal and environmental challenges simultaneously, including climate change and biodiversity loss. Their multi-functionality also makes governance, implementation and operation of such solutions challenging, and the need for knowledge sharing and cooperation across the Nordics more important than ever.

BACKGROUND

The world is currently facing biodiversity and climate crises that are globally interlinked. Nature-based solutions (NBS) are increasingly implemented and recommended, as they combine adaptation and mitigation to climate change while countering biodiversity loss and with a strong focus on solving societal challenges.

To support the vision of becoming the most sustainable region in the world by 2030, The Nordic Council of Ministers launched a research programme encouraging the Nordic countries to work together and enhance the knowledge base on nature-based solutions, restoration, climate mitigation and sustainable use of resources. As part of the Nordic NBS programme, a synthesis with mapping of the current status of NBS in the Nordics was produced in the S-ITUATION project. This policy brief presents key findings and recommendations based on this work.



Climate change is causing societal challenges and is closely linked to biodiversity loss (photo by Werner Karrasch, Vikingeskibsmuseet i Roskilde).

In the S-ITUATION project we investigated four key aspects related to NBS in the Nordic countries:

1. RESEARCH STATUS

Nordic researchers are increasingly being involved in European and national research on NBS, thus actively contributing to a stronger evidence-base. Most of the research projects related to Nordic countries are targeting NBS in urban areas. Of the 64 scientific publications we found using the term 'nature-based solutions' related to Nordic countries, most studies assessed NBS functions related to biophysical qualities such as flood risk reduction, health benefits and biodiversity contributions, but there were also studies on potential economic benefits from NBS. These academic activities should be sustained and enhanced in order to strengthen the position of the Nordic countries as role models for successful NBS implementation.

2. EXISTING POLICY FRAMEWORK(S)

The Nordic countries are at different stages

of mainstreaming the concept of NBS into policy. Norway and Sweden have adopted the term to a larger degree than Denmark, Finland and Iceland. The NBS concept is, in general, not well integrated in the legal structure in most of the Nordic countries. Norway is the only country with an explicit legal requirement in some planning guidelines to consider the use of NBS. However, all five countries have legislation, strategies and policies that support conservation, restoration and sustainable use patterns for nature. We found a few examples of "supportive material" like guidelines or tools to help practitioners plan, design and implement NBS, but these usually address certain types of NBS or specific challenges. We found some examples of financial support programs related to environmental subsidies for agriculture; public grants for NBS knowledge-building projects for climate change adaptation; direct funding for restoration and nature protection projects; urban climate change adaptation; stormwater treatment; NBS projects for water quality improvement. All Nordic countries would benefit from clear and explicit requirements for when and how NBS should be used. Appropriate regulation will create a more stable framework around the long-term development of NBS and ensure the necessary collaboration between relevant actors.

3. CHALLENGES TO MAINSTREAMING

The Nordic countries face similar challenges and opportunities for mainstreaming NBS as other countries and regions. These include shortcomings in long-term monitoring and evaluation of NBS, lack of clear definitions and targets for biodiversity gains, technical and ecological knowledge gaps, economic difficulties related to cost-benefit assessment and funding mechanisms of NBS, regulatory, governance and policy challenges as well as potential for improvements to the participatory processes for stakeholders. Due to their multi-functional character, NBS require the development of cross-sectoral structures and policies. Administrative boundaries, sectorization and silo-thinking, as well as a lack of cooperation between private and public organisations, often hinder the implementation of good NBS.

4. KEY EXAMPLES OF PROJECTS

Analysing 54 Nordic case studies of projects implementing NBS, we have seen successful examples in all Nordic countries and across various land use types and ecosystems. In most Nordic countries NBS are used for climate change mitigation and adaptation and to reduce pollution, in addition to having biodiversity benefits. Other societal challenges are addressed to lesser extent, but also have great potential. Some of the projects still exemplify challenges such as missing biodiversity targets or lack of regular monitoring.

RECOMMENDATIONS

The knowledge base in all phases of NBS projects needs to be strengthened.

We recommend to:

- Further strengthen research on NBS to reduce uncertainties and improve the knowledge base on performance, costs, benefits, disbenefits, trade-offs, and implementation of different NBS types.
- Facilitate iterative learning from innovative NBS pilot projects and on NBS adaptive management, also allowing for failures.
- Acknowledge and consider traditional and indigenous knowledge.
- Increase NBS education on all education levels.
- Support capacity-building among practitioners, especially in municipalities.
- Create arenas for exchanging knowledge and experiences on NBS across the Nordics and globally.
- Develop more practical guidance on how to plan, design, implement and operate NBS.

Long-term monitoring and more comprehensive cost-benefit evaluation of NBS is required.

In order to reduce uncertainty regarding NBS effectiveness, define minimum requirements for quality and performance of NBS interventions, increase the trust in NBS, attract funding and enable adaptive management of NBS, we recommend to:

- Set clear and measurable targets (also for biodiversity) when planning NBS. Such targets could be related to funding mechanisms.
- Include holistic cost-benefit assessments considering as many types of NBS and ecosystems as possible, also taking changes to nature over time into consideration.
- Develop tools, standards and platforms for how monitoring and assessment of individual NBS outcomes can be linked to existing environmental or economic monitoring structures.

Better funding structures for NBS are needed. We recommend:

- Reviewing and adapting national legislation in order to eliminate funding structures that hinder the adoption of NBS, such as technical solutions required by law.
- More "creativity" is needed to find new business models for cross-sectoral and public-private financing mechanisms for individual NBS projects. Examples from other countries should be reviewed and considered for adoption in the Nordics.
- Public funds might be needed to reduce the investor risk in public-private co-funding projects, especially in cases with high scepticism towards NBS.

WHAT ARE NATURE-BASED SOLUTIONS (NBS)?

Nature-based solutions are essentially about working with nature, for nature and people. NBS are defined by the United Nations Environment Assembly as "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits."



Biodiversity benefits are a key part of nature-based solutions (photo by Christian Kjær, Aarhus University).

Appropriate institutional structures, procedures and policy instruments at all governance levels are essential to facilitate the implementation of NBS. We recommend:

- Assessing the current policy framework for NBS in the Nordics in detail concerning the effectiveness and efficiency of its policies.
- Developing new institutional structures to support adaptive ecosystem management practices to meet future challenges, including climate change.
- Requiring participatory approaches and stakeholder involvement in all NBS projects to ensure a just and equitable transition to a sustainable future.
- Shifting to a cross-sectoral mindset and improving cooperation across agencies, sectors and policy levels to enable a transition to preferential use of NBS.

KEY MESSAGES

Common standards and guidelines are needed to support increased adoption of NBS including setting clear biodiversity targets.

- Using a global standard such as the one developed by the International Union for Conservation of Nature (IUCN) could help to solve several challenges related to NBS implementation, in addition to raising awareness and providing a holistic approach.
- Minimum requirements concerning the quality of NBS interventions and the cost-effectiveness of the solutions should be considered by public authorities.

Clear political prioritization is needed to mainstream NBS into policy and practice.

- In order to tackle the climate and biodiversity crises, there is a need to actively steer away from "business-as-usual" i.e. from the routine use of technical or engineering solutions without considering, and when possible, implementing NBS.
- If possible, the conservation and protection of important ecosystems should be prioritised as the first solution. If this is not possible, restoration actions or implementation of other types of NBS should be considered. Sustainable use and management of ecosystems should always be prerequisites for NBS.

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