

A photograph of a forest stream with a large green text overlay on the left and a smaller green text box on the right. The stream flows through a lush forest with tall trees and dense undergrowth. The water is clear, revealing rocks and fallen branches. The overall scene is vibrant and natural.

Nordic NBS policy brief

Advancing Nature-Based Solutions in the Nordics: Insights from Eight Pilot Projects

Understanding the conditions needed for nature-based solution projects, as well as gaps and barriers, is essential for successful NBS implementation and up-scaling.

This policy brief summarises insights from eight Nordic NBS pilot projects in the Nordics. They serve as tangible demonstrations of the potential that NBS applications have in the Nordic region.

Photo: Antti Karppinen / Metsähallitus

BACKGROUND

The world is currently facing a biodiversity and climate crisis which are globally interlinked. Nature-based solutions (NBS) are increasingly implemented and recommended, as they combine adaptation and mitigation to climate change with 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, the S-UMMATION project followed eight NBS pilot projects funded by the program from spring 2022 to fall 2023. This policy brief presents key findings and recommendations based on this work.



In Denmark, brush fences have been built in collaboration with local schools in several municipalities. Photo: Per Bille.



Students joining the National Museum and a local farmer in the restoration of the landslide on Kalsoy Island in the Faroe Islands. Photo: Kolbrún í Haraldsstovu

THE PILOT PROJECTS

The NBS pilot projects offer a diverse range of NBS types, societal problems addressed, and climatic and landscape variations across the Nordics:

1. More Nature - Less Waste (Denmark): The municipal waste company Renosyd is engaging local schools to build brush fences out of branches. This can reduce garden waste and create habitats for insects and small animals.

2. Planning for multifunctional land consolidation (Denmark): Assens municipality, VandCenter Syd and Hedeselskabet are developing a comprehensive plan for multifunctional land distribution in the Holmehave area to establish afforestation, nature and wetlands.

3. Land restoration initiative (Faroe Islands): The Lendisbati restoration initiative aims to prevent erosion, protect biodiversity and restore wetlands for carbon storage. It is part of Tjóðsavnið (the Faroe Islands National Museum) and involves landowners, nature-restoration experts and high school students.

4. Stream and watershed restoration in peatland and unproductive forest areas (Finland): The Finnish Wildlife Service organization Metsähallitus leads this work to restore the entire watershed area around the Mätäsoja Stream to enhance water quality and habitat connectivity.

5. Crop wild relative biodiversity in urban green and coastal areas in Reykjavik (Iceland): This project led by Reykjavik Botanic Garden will provide a toolbox for genetic plant breeders working towards a sustainable and increasingly urbanized agriculture for local food production.

6. Protecting stream banks against erosion (Norway): This project led by the Norwegian Institute for Bioeconomy (NIBIO) aims to prevent erosion, stabilize stream banks and improve water ecosystems by strengthening slopes and edges with nature-based solutions.

7. Floating wetland raft system for treating sea waters (Sweden): Initiative Utö in collaboration with the KTH Royal Institute of Technology and alchemia-nova develops a floating system for wetlands to remove excess phosphorus from seawater.

8. Establishing multifunctional wetlands in agricultural areas (Åland): The water utility company Ålands Vatten collaborates with farmers in this project to improve several multifunctional wetlands for better water quality, sustainable food production, climate adaptation and increased biodiversity.

OVERALL INSIGHTS FROM THE NBS PILOTS

Having followed the projects for about half or a little longer of their duration, it is evident that the experiences and the insights that have emerged from their planning, establishment and operational phases, align with and reaffirm established international findings on NBS projects.

Six common, overarching aspects emerged from studying the NBS pilot projects:

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."



Crop wild relative biodiversity in urban green and coastal areas in Reykjavik, Iceland. Photo: Magnus Göransson.



A supporting and enabling environment and leadership is central if NBS projects, or related actions, are new to the responsible organization. The project leaders played an instrumental role in the pilot initiatives. As pioneers, they had to spend time communicating the benefits of the NBS project, not only to stakeholders but also people in their own organizations.



Careful planning is an important component to be able to execute the NBS projects effectively. The pilot projects underscored the importance of appropriate planning specifically to ensure the multifunctionality of the NBS.



Involvement and collaboration with various stakeholders, citizens and landowners is a key part of the NBS project work. A significant observation from the pilot projects is that collaborating with various actors proved essential, considering the socio-cultural and legal contexts intertwined with the NBS landscapes.



Combining different disciplines, types of knowledge, and roles is necessary to achieve multifunctionality of the specific NBS. The pilot projects have demonstrated that radical interdisciplinarity is beneficial, such as integrating social and natural sciences with communication, management skills and technical skills.



Monitoring effects of the NBS will be necessary after the end of the pilot projects to assess their long-term performance. This will require additional funding.



Financing: The eight Nordic NBS pilot projects would not have taken place without funding from external sources. As such, the four-year NBS program of NCM has been essential to the projects and in getting these started.

Recommendations for enhancing the implementation of nature-based solutions in the Nordics

Based on insights from the NBS pilot projects, we provide a set of recommendations to improve the implementation of NBS in the Nordic region. These are directed at NBS practitioners, such as project planners and managers, as well as NBS enablers like policymakers and funders.

RECOMMENDATIONS FOR NBS PRACTITIONERS

- **Prioritising stakeholder engagement:** Actively involve local communities and stakeholders in all phases. Consider their needs and capacities to foster collaboration and enhance project outcomes.
- **Comprehensive site analysis and planning:** Consider land use, ownership, and environmental conditions. Prioritize spaces where interventions are feasible.
- **Holistic approach:** Ensure that NBS are multifunctional and prevent shifting problems by considering diverse perspectives and land uses.
- **Ecological diversity and principles:** Emphasize biodiversity through habitat creation and select locally appropriate NBS.
- **Adaptability and resilience planning:** Design NBS projects to be flexible, adapting to changing conditions through ongoing monitoring and feedback.
- **Effective use of resources and expertise:** Leverage local expertise and collaborate with external experts when needed, always considering local conditions.
- **Monitoring and documentation:** Implement continuous monitoring to track progress, adapt strategies, and share valuable insights for future NBS initiatives.
- **Capacity building and education:** Empower communities with knowledge for long-term stewardship, promoting ownership through education and engagement activities.

RECOMMENDATIONS FOR NBS ENABLERS

- **Promote understanding and applications of NBS:** Emphasize NBS's ability to address social, economic, and environmental challenges, highlighting local benefits.
- **Facilitate and promote monitoring and documentation:** Encourage and fund long-term monitoring and evaluation, learning from both successes and failures to improve future projects.
- **Facilitate cross-Nordic sharing and learning:** Support exchange and networking among NBS projects in the Nordics and beyond through joint projects and seminars.
- **Provide institutional support mechanisms and policies:** Ensure flexible institutional support for pioneering projects and accommodate diverse needs through adaptable framework conditions.
- **Promote transdisciplinary, cross-sectoral, and inclusive approaches:** Support collaboration across disciplines and sectors, engaging landowners and promoting multifunctional land use models.
- **Establish a comprehensive financing framework:** Provide long-term funding for all phases of NBS projects, ensuring stability and accommodating varying project timelines.

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