



How to successfully mainstreaming NbS? Evidence from European Regions



NBRACER
Nature Based Solutions
for Atlantic Regional Climate Resilience

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What is mainstreaming?

Mainstreaming is the adoption and normalisation of innovations so that they become the new normal.



Image created with AI

Aim of this study

This study examines how Nature-based Solutions (NbS) become integrated into policies and practices, establishing them as a norm in water and climate resilience planning, and derives best practices for mainstreaming NbS.

Methods

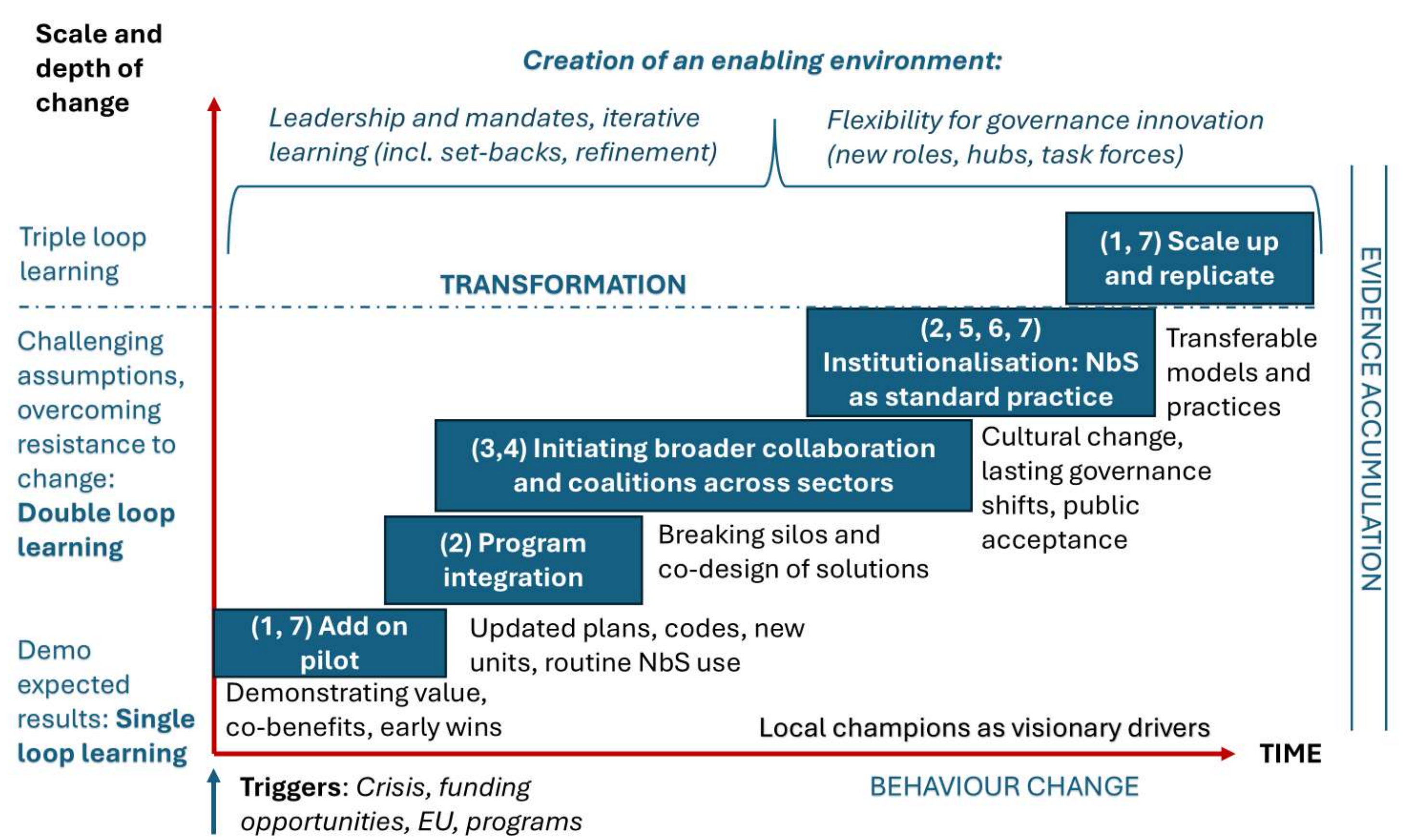
- Literature review and development of an analytical framework, integrating existing understandings of mainstreaming with social learning (single, double, triple loop learning)
- Semi-structured interviews with key regional stakeholders
- Qualitative analysis, data mapped on mainstreaming typologies
- Ten case studies drawn from eight Atlantic European regions
- For full methodology, scan the QR code

Existing mainstreaming typologies

Dimensions	Mainstreaming strategies
(1) Add-on	Establishment of specific on-the-ground NbS projects and programmes not integrated into core departmental work, but directly targeting adaptation. Entry point for testing feasibility.
(2) Programmatic	Integration of NbS aspects into on-the-ground operations, projects, and programmes; aligning departmental activities with adaptation objectives.
(3,4) Intra- and inter-organisational	Promoting collaboration across departments, agencies, governmental bodies, and civil society to develop shared knowledge, competence, and joint action.
(5) Managerial	Modifying organisational structures, job descriptions, workflows, personnel, and financial assets to better institutionalise adaptation.
(6) Regulatory	Modifying formal and informal planning procedures, policies, regulations, and legislation to systematically integrate NbS.
(7) Directed	Higher-level support redirecting focus through topic-specific funding, promotion of projects, staff education, or assignment of responsibilities.

Source: adapted from Wamsler and Pauleit 2016

Results: Combine mainstream types for transformation



Source: Authors, inspired by Puri et al 2022

Two case examples

FLOOD PROTECTION

Sigma Plan, East Flanders – all mainstreaming types

A regional flood programme along tidal Scheldt that pivoted from grey infrastructure to NbS (floodplain restorations, wetlands) through policy reform.



Controlled flood area under normal conditions (left) and storm tide (right). Red indicates the ring dike, and blue indicates the overflow dike.

URBAN GREEN

Porto, Portugal – mainstreaming types 1, 2, and 3

The URBiNAT Healthy Corridor evolved from an EU pilot into a citywide climate adaptation initiative, integrating community gardens and stormwater NbS in Campanhã.



URBiNAT (Parque Alameda de Cartes) before (left) and after (right) construction, showing a multifunctional green urban park for citizens that also serves as water management infrastructure.

Results: Evolving outcomes

- Crises, local and political champions and enabling policy and funding opens windows of opportunity for change
- Pilot projects demonstrates NbS early wins and effectiveness
- NbS becomes integrated in existing programs, codes, and routines
- Strong cross-sectoral collaboration, coalitions across departments, levels of government and stakeholder platforms drives progress
- Institutionalisation ensures NbS as standard practice.
- Scaling up and replicating by regional learning

Results: Enablers and success factors

- Politically and legally anchoring NbS (mandates, strategies)
- An adaptive mindset – iterative learning, through monitoring and adaptation and refining approaches over time
- Governance innovation, e.g. new coalitions and commissions
- Building the evidence and communicating widely about NbS as multi-value solution secures stakeholder and political support



Funded by the European Union

Funded by the European Union. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

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