

## Governance innovation for nature-based solutions

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# Policy innovation for Nature-based Solutions in the Disaster Risk Reduction sector

## *Synthesis of the first Nature-based Solutions Policy Business Forum workshop*

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### The NBS Policy Business Forum

The Policy Business Forum (PBF) consists of Nature-based Solutions (NBS) experts and knowledgeable stakeholders at the international, European, and national scale. The main aim of the PBF is to explore innovative ways to strengthen the science-policy-business nexus in order to exploit opportunities and overcome barriers in NBS implementation in the disaster risk reduction (DRR) sector. The PBF deliberates on how to improve the use of existing policies/instruments/initiatives to better enable the implementation of NBS, and to propose new ideas for governance and policy structures that can lead to greater success on the acceptance and implementation of NBS. The PBF members are involved in the forum deliberations in various ways, including interviews, surveys, web meetings/e-consultations, and workshops. The forum is organised within the framework of the European Union (EU) funded project PHUSICOS Work Package 5 on “Governance innovation for the design and implementation of NBS”.

### Rationale and roadmap of the first PBF workshop

Until recently, the term NBS was virtually absent from political or public agendas, while sister concepts such as Eco-DRR or Ecosystem Based Adaptation (EBA) were already extensively used. This is rapidly changing at all scales, and particularly at international fora, where they have emerged, for instance, at the Conference of the Parties (COP) 25 discussions and expected COP 26 negotiations. At least 66% of the Paris Agreement signatories include NBS in some form to help achieve their climate change mitigation and/or adaptation goals. Thus, ambition at the national and international level is growing. There is also growing recognition that NBS - here defined as living solutions inspired and supported by nature, that provide environmental, social and economic benefits and help build resilience (European Commission 2015) - can help provide viable and cost-effective solutions to a broad range of societal challenges. Among others, NBS can contribute to reducing natural hazards and establishing climate resilient societies. However, to realize their full potential, NBS must be mainstreamed into local, national, and international governance regimes, including regulatory and financial procedures, as well as into risk management, land use, and spatial planning strategies.

During the first PBF workshop, participants discussed policy reforms that are necessary to drive NBS transformative action. Three keynote speakers provided: i) an overview of the 2020 action agenda for climate, people, and nature (Elise Buckle, Director of Climate and Sustainability); ii) an analysis of gaps and opportunities in NBS policy and science (Karen Sudmeier-Rieux, United Nations Environment Programme); and iii) a review of NBS policy mixes at the EU and member state level (Elisa Calliari,

University College London). Afterwards, participants discussed international and national NBS policies and instruments in two thematic sessions addressing the following main questions:

- How can NBS be mainstreamed into European DRR policy agendas?
- Are new directives or frameworks needed at the European level?
- What NBS policy instruments and measures have European countries implemented for DRR?
- Do we need new national NBS regulations?
- How can funding for NBS be enabled?

The workshop participants (18) represented a wide variety of backgrounds, including engineering, natural sciences, social sciences, and business. Most participants work in policy and/or DRR, and their interests in NBS have been motivated primarily by the urgency of the climate crisis and the co-benefits NBS offers in helping to address other societal and ecological challenges. Below we present a synthesis of the workshop results. We begin with the results related to NBS policies and their implementation, and then focus on business models and assessment frameworks. We conclude with the identification of four main areas for catalysing NBS policy innovation. The main barriers and policy options as suggested by participants are included as a graphical summary in the main text.

### NBS policies and implementation

The European Commission is investing considerably in NBS and green growth, with the goal of positioning Europe as a leader for ‘innovation with nature’. Partially as a result of this, NBS are dealt with in a number of different policy domains, including adaptation, disaster risk management, research and innovation, biodiversity, and water retention. During the workshop, EU policy measures focused on NBS in the DRR sector. NBS policy instruments in selected member states were presented and discussed, such as the 2007 Flood Directive (2007/60/EC), the 2009 European Commission White paper on adaptation, the 2013 Global Infrastructure Strategy, the 2015 Action Plan on the Sendai Framework for DRR, and the EU Green New Deal.

The results reveal that many NBS policies at the EU scale are grounded in soft, non-legally binding measures, and on voluntary actions at the state level. Although NBS as a concept is only emerging at the member state level, it already faces some resistance. For example, at the local scale, there is poor application of NBS policies. Several frameworks and agreements explicitly mention NBS or EBA/Eco-DRR (e.g., the Sendai Framework for DRR, 2015-2030 and the Paris Agreement), but provide little guidance on, for instance, how to monitor progress on NBS adoption or how to integrate the concept into National Adaptation Plans.

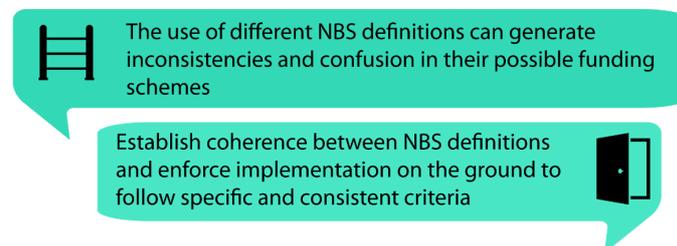
### *Coherence in NBS definitions and funding*

EU member states adopt different definitions of NBS in their policy instruments. In the words of Elisa Calliari [University College London]:

“These differences might show a lack of coordination between initiatives at the EU level and at the national and local levels. (...) Definitions matter and can influence policy decisions on which NBS rely to implement. For example, do all measures that restore ecosystems for DRR purposes also deliver jobs (see EU definition of NBS); and thus, can they be labelled as NBS? Multifunctionality is a key aspect in the NBS definition. Moreover, NBS improve natural functions, create wellbeing and jobs, and are co-designed with stakeholders. We need to capture the new framing by the EU if we aim at differentiating between, for example, traditional ecosystem-based approaches and NBS.”

Definitions also matter because they can serve as “gate keepers” for NBS funding. For example, should naturalistic engineering measures to reduce landslide risk be considered NBS?

“Coherence should emerge from funding schemes to force implementation on the ground to follow certain criteria instead of giving total freedom to local authorities to label any kind of measure NBS (*ibidem*).”

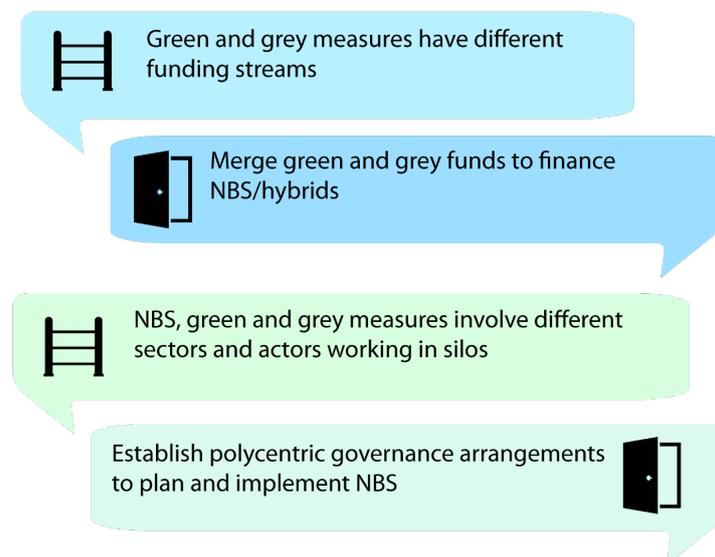


### Green and grey funding streams

One problem for NBS implementation, in the words of Andrea Goltara (CIRF):

“[The issue is] not lack of funding for NBS, but the unfair distribution of funding for green and grey measures. For example, in the same river basin, funds allocated to grey infrastructure vs. NBS could differ by several orders of magnitude.”

Generally speaking, grey measures receive more funding than green ones, and local authorities often lack strong political incentives to implement NBS. Moreover, their respective funding streams are separated. This also translates into bureaucratic difficulties for NBS and hybrid projects, as different funding schemes, and also practitioners and professionals, need to be approached and coordinated across different sectors.



Another problem is defined by one of the participants as “green washing”:

“In contrast to grey measures, which are often large and visible, NBS are typically less impressive and thus difficult to communicate. NBS are often used as “choreography” or “green washing” in projects that are hybrid or primarily structural/grey.” [Luca Pucci, Legambiente NGO]



NBS and their benefits are less visible than those of grey infrastructure

Involve stakeholders in all stages of NBS implementations by codesigning NBS solutions



### *NBS scalability*

National or local authorities might hesitate to implement NBS because they are too expensive. One of the main factors making some NBS more expensive than grey solutions is the cost of land that needs to be acquired (e.g., river embankments). This raises questions concerning the scalability of NBS.

“Limited land availability is a major barrier to scale up NBS projects.” [Maurene Valdelfener, Grand Lyon]

Land expropriation is an option to implement NBS, but it is very difficult to implement because of opposition by property owners in several countries.



NBS often require expensive land acquisition, making upscaling difficult

Implement innovative funding mechanisms for NBS (e.g., Payments for Ecosystem Services)



### *Inclusive bottom-up NBS planning: last or first mile?*

Collaboration and multi-stakeholder engagement are critical to promote inclusive and bottom-up NBS planning.

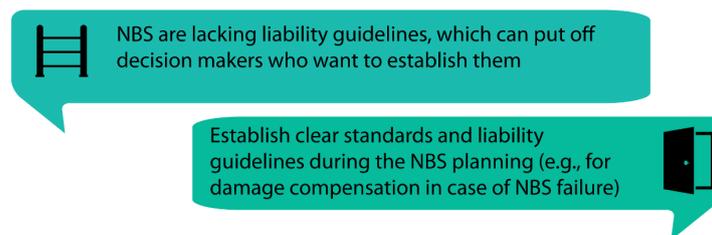
“NBS projects are not reaching the scale that would be interesting to large investment flows, particularly climate finance flows. Their planning is not as inclusive or bottom-up as it's going to need to be to produce such scaled projects with key groups such as farmers and local communities.” [Louise Gallagher, University of Geneva]

Involve stakeholders in all stages of NBS implementations by codesigning NBS solutions



### *Liability of public authorities and damage compensation*

NBS require land - usually more land than grey infrastructures. This will inevitably affect private property owners, but also public authorities. In the context of DRR, liability for damage compensation for, for instance, flooded private property, are critical issues for NBS implementation. Who bears responsibility for the success or potential failure of an NBS to reduce disaster risk needs to be carefully defined to avoid potential legal complications.



## Business models and assessment frameworks

### *NBS long term performance and comparability*

There are sizeable knowledge gaps concerning EBA and NBS, including demonstration of transferability, effectiveness at larger scales, and quantification of co-benefits. A particular challenge is embedding NBS multifunctionality in the assessment of adaptation options. Developing better assessment frameworks that can support policymakers in choosing among NBS, hybrid, or more traditional/grey solutions can play an important role for wider NBS uptake. The International Union for Conservation of Nature (IUCN) standardised approach for NBS design and verification is moving in this direction, together with many other frameworks developed in EU projects.

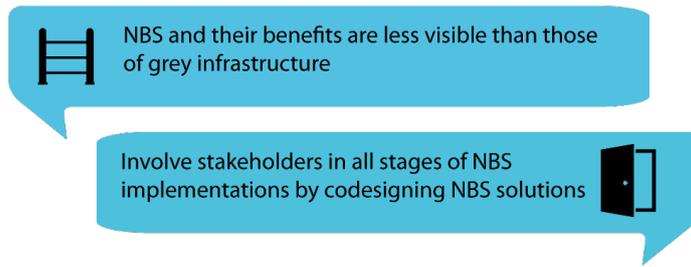
“It is critical to provide better assessment. Three preconditions to implement NBS are particularly relevant. First, verifiability to demonstrate robust track records (monitoring performance over time, achieving design criteria). Second, predictability, especially of NBS long-term performance and effects. Third, comparability for NBS to be functionally comparable under varying conditions (e.g., geo-zones) and with grey solutions.” [Fredrik Mink, Independent consultant, Advisor EU Dredging Association]

“Another key gap lies in the monitoring and evaluation (M&E) of NBS for DRR (and adaptation). To date, many initiatives on the ground have failed to set up M&E systems that can adequately capture outcomes of NBS projects, let alone of impacts.” [Sylvia Wicander, UN Environment Programme World Conservation Monitoring Centre]

### *A negative business case for grey solutions*

A common perception throughout the EU (and in some countries more pronounced than others) is that green infrastructures are not as effective or important as grey ones. As one example, this is thought to be the perception held by citizens about green spaces in urban areas in Slovakia. In contrast, Austrians generally attribute a high value to urban green spaces. Different perceptions are translated into different regulations in the two countries. Thus, a paradigm shift is needed for NBS to be able to compete with other land uses. If NBS are considered as critical green infrastructure, it will be more difficult to convert these areas to other uses, for example, residential housing. So far, the focus has been on showing the cost-effectiveness of NBS and their (often) superiority in comparison with grey solutions.

“The paradigm should shift towards making a “negative business case” for grey solutions. NBS always have to prove their superiority over grey solutions (...) but why don’t we do the same with grey?” [Juraj Jurik, Global Infrastructure Basel Foundation]

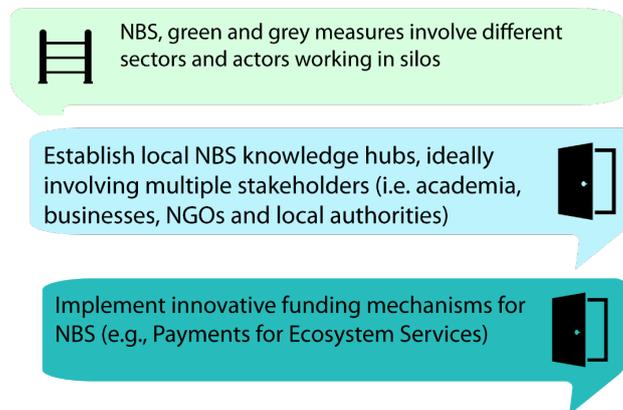


*Towards robust NBS business models*

While the social, economic, and environmental benefits of NBS are greatly relevant for society as a whole, their multiple benefits might not contribute to the revenue stream necessary for private investment. This represents an important hurdle to promoting robust NBS business models. Yet, there are examples of good practices of private sector involvement in NBS for DRR. An example is hydropower company contributions aimed at better managing sediments in retention basins, thus improving water quality and the ability to reduce floods. New models of cooperation between the public and private sector can be instrumental in the implementation of NBS in the future.

“There is a need to better motivate collaboration between the public and private sectors, as well as with academia and civil society if any meaningful change is to be possible before we reach a global environmental tipping point. We need to find a way to persuade all actors to incorporate NBS as part of their core business risk management strategy and find ways to clearly articulate the return on investment to wider audiences. Governments must be targeted to support/underwrite actions by private and local institutions. The NBS community must start speaking the language of the priority audiences it needs to reach with realistic and practical actions that identified institutions must take.” [Andy Andrea, Alliance for Impact]

Thus, there is a need for the NBS community to develop tangible and easily communicated collaborative actions that bring together multiple sectors.



**Catalysing NBS policy innovation**

Four main areas have been identified to promote NBS policy innovation in the DRR sector:

*Promoting “hard” instruments in European policies*

Many of the NBS policies at the EU scale are grounded on soft measures that are not legally binding. Thus, most of the support at the EU scale is based on voluntary actions at the state level. There is still a lack of strong EU support for policy financing and implementation. “Hard” instruments should be promoted.

“An example is enforcing a certain land proportion of forest cover for each member state.”  
[Juraj Jurik, Global Infrastructure Basel Foundation]

The Common Agricultural Policy (CAP) can be incredibly important for NBS because it represents a considerable budget item in the EU agenda. The CAP can open a window of opportunity to better enforce NBS funding allocation rules.

“For example, in the CAP, conditionality has worked in the past. It should be transferred from a national to a European scale. Conditionality can include measures at the small scale - like buffer strips - that can increase effectiveness at the large scale.” [Andrea Goltara, CIRF]

Accordingly, conditionalities established by the CAP financial incentives can help promote NBS measures that contribute to CAP goals.



To date, many EU policy mechanisms enabling NBS remain voluntary with no legal obligations to comply



Identify and use existing European policy and financial instruments that are legally binding as an opportunity for NBS implementation

### *Merging responsibilities for planning and implementation*

NBS budgets are often managed by actors different from those planning and implementing them. For example, while coordinating agencies such as river basin authorities might contribute to greater cooperation among actors involved in the development of NBS, if such coordinating agencies do not have control over the financial means necessary to implement their projects, their action and potential will be limited. This is the case for many river basin authorities across Europe. It is also critical to improve coordination between the multiple authorities that are benefiting from NBS.

“Indeed, it is not always the case that NBS are cost-effective at an intervention-based level, it’s at the co-benefit level that financial benefits of green over grey measures are evident.” [JoAnne Linnerooth-Bayer, IIASA]



NBS, green and grey measures involve different sectors and actors working in silos

Establish polycentric governance arrangements to plan and implement NBS



### *Merging green and grey funding streams at the EU and national level*

A lack of balance between funding for green and grey solutions was highlighted. Another critical problem is that funding streams for green and grey measures are separated, entailing several consequences. The coexistence of several funding streams does not make it easy for local authorities to favour NBS over grey measures for DRR.

“One solution to this issue will be to merge these conflicting funding streams into a single DRR program which prioritizes NBS approaches.” [Andrea Goltara, CIRF]



Green and grey measures have different funding streams



Merge green and grey funds to finance NBS/hybrids

### *EU funding for NBS hubs to empower the local level*

Europe is investing considerably in NBS and green growth. However,

“...there are limited guidelines to support NBS implementation at small scales. This leads to a growth of single and isolated solutions that are not strategically planned and integrated at larger scales. National policies should boost a multi-level integrated approach to design and manage NBS systematically across the territories, to be more effective for DRR purposes.” [Andrea Staccione, CMCC]

Participants agreed that finding the right instruments and identifying powerful actions to empower the local level is a priority. The EU should better support local actions. A good practice example could be the “Resilience Office” in Milan, which was set up with the Rockefeller Foundation’s help. The role of this office is to coordinate between different departments and agencies to find the best solutions to increase the city’s resilience. Another good practice example, even if originating from another sector, is the EU initiative “Farm to fork”, which built on extensive public consultation.

“NBS hubs may be an effective model, at the local or regional level. These hubs act as catalysts for NBS adoption. They may ideally include a university or research institute, solution providers (it can be businesses or local authorities), and NGO/civil society representatives.” [Juraj Jurik, Global Infrastructure Basel Foundation]



The implementation of European instruments supporting NBS at the national, regional and local scales remains limited

Establish local NBS knowledge hubs, ideally involving multiple stakeholders (i.e. academia, businesses, NGOs and local authorities)



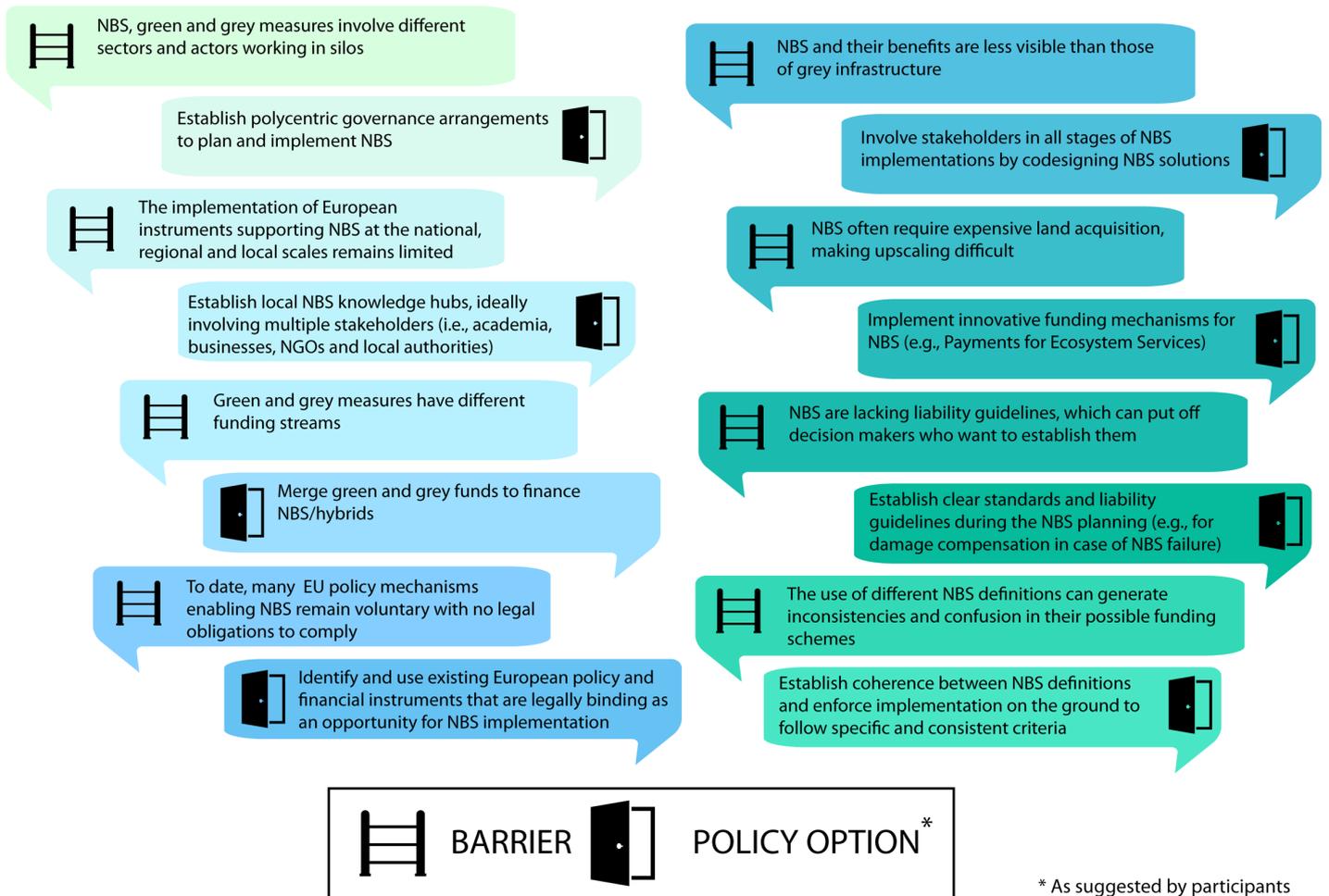


Figure 1: Summary of the barriers to NBS implementation, and policy options for overcoming them as suggested by workshop participants. Design: Juliette Martin

### The PBF next steps are as follows

- 1. Circulate the synthesis to all participants**, the PHUSICOS Consortium, and interested parties to solicit levels of interest in continuing to be engaged in the discussion. Reconvene the Policy Business Forum to address some of the specific issues that arose and some new ones, with a focus on NBS financing.
- 2. Commitment to become a ‘champion’ for NBS in the DRR sector in 2020 and beyond.** This would involve being part of an active NBS community linked to the PHUSICOS project, which is also active on social media (Twitter, etc.). In addition there are opportunities to link to ongoing initiatives such as the EU projects taskforce on NBS governance.
- 3. Meet again with PBF members with commitment to ‘recruit’ other interested participants.**

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