

# POLICY BUSINESS FORUM

The role of public and private sectors in  
mainstreaming nature-based solutions

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# The role of public and private sectors in mainstreaming Nature-based Solutions

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

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## The NBS Policy Business Forum

The Policy Business Forum (PBF) engages 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. Participants in the PBF deliberate 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 with respect to the acceptance and implementation of NBS. 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 second PBF workshop

At least 66% of the Paris Agreement signatory countries include NBS in their plans for achieving their climate change mitigation and/or adaptation goals. There is thus a growing recognition that NBS - here defined as solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience (Nature-based solutions | European Commission europa.eu) - can provide viable solutions to a broad range of societal challenges. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions. NBS must therefore benefit biodiversity and support the delivery of a range of ecosystem services. Among others, NBS can contribute to reducing natural hazards and establishing climate resilient societies.

There is unprecedented political momentum and windows of opportunities for scaling up NBS, with research and practice increasingly providing solid foundations for implementation, and with increasing funding opportunities. For example, the EU Biodiversity Strategy outlines ambition to unlock at least €20 billion a year for spending on nature, the European Investment Bank’s Natural Capital Financing Facility allocated €250 billion to the EU Green Deal. Other European instruments supporting NBS include the European Structural and Investment Funds (ESIF), Programme for the Environment and

Climate Action (LIFE), EU Climate & Environment, the European Agricultural Fund for Rural Development, European Agricultural Guarantee Fund, European Regional Development Fund, Cohesion Fund, as well as Horizon Europe. Moreover, NBS may play a role to make the post-COVID 19 recovery and the implementation of the EU Recovery and Resilience Facility green, healthy, just and equitable.

The new EU strategy on Adaptation to Climate Change ([https://ec.europa.eu/clima/policies/adaptation/what\\_en](https://ec.europa.eu/clima/policies/adaptation/what_en)) also emphasizes the importance of bringing nature into the climate dialogue in the form of NBS for adaptation and mitigation. For example, the Commission will propose NBS for carbon removals, including accounting and certification in upcoming carbon farming initiatives; develop the financial aspects of NBS and foster the development of financial approaches and products that also cover nature-based adaptation; continue to incentivize and assist Member States to rollout NBS through assessments, guidance, capacity building and EU funding.

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. NBS also need scale up and be presented as solutions that can address multiple sustainability challenges going beyond climate change.

The ambition of the second PBF workshop was to better understand the current state of NBS financing and identify the reforms necessary in the public and private sectors to accelerate NBS upscaling and green transformation. During the workshop, participants discussed the policy and finance reforms that are necessary to drive NBS transformative action. Four keynote speakers provided an overview on: i) the potential of public-private cooperation for mainstreaming NBS and/or for NBS implementation at scale (Monica A. Altamirano, Deltares -a H2020 NAIAD project partner- and World Association of Public Private Partnership units and professionals); ii) NBS in the European Bank for Reconstruction and Development (EBRD) Green Economy Transition (GET) strategy (Sarah Duff, EBRD); iii) enabling NBS financing to create climate resilient communities in Cyprus (Juraj Jurik, Global Infrastructure Basel Foundation); and iv) payments for ecosystem services in an Italian case study (Nicola Del Seppia, Northern Apennines Hydrographic District Authority – a PHUSICOS project partner).

Following these keynotes, participants discussed the private sector business case and public sector mainstreaming in two thematic sessions. The thematic sessions were motivated by the following questions:

- How do private sector organisations define priorities for NBS action?
- What barriers do they encounter?
- Which of the many innovative market instruments hold promises for NBS scaling?
- How can public banks provide more funding for NBS?
- How can public authorities foster synergies, not only between policy sectors but also between the public and private sector?
- Are there policies in place that hinder NBS financing?
- How can we significantly increase funding for the public sector NBS agenda (e.g. COVID-19 recovery fund)?

The workshop participants (20) were experts from various organizations, including non governmental organisations, European and national authorities, foundations, international organisations and banks.

Below we present a synthesis of the workshop results. During the presentations and discussions on the role of the private sector and public financial institutions in NBS financing and implementation, three NBS financing models emerged: private, blended and public. We use these models to summarize the key results of the workshop. Cross-cutting themes that are relevant for each financing model also emerged: public-private partnerships (PPP), payment for ecosystem services (PES), assessing NBS value

to investors and society, and multiple barriers including the challenge of changing mindsets. The highlights of each financing model - as viewed by participants - are summarized below, followed by a brief overview of the cross-cutting themes. We conclude with an overview of discussed challenges and opportunities for NBS mainstreaming and scaling.

### Private financing: NBS fully financed by private sector

Participants agreed that private firms are most likely to prioritize NBS investment if the direct benefits to the enterprise, itself, outweigh the investment costs. Several examples of private financing were discussed, including:

- A privately-owned hydropower plant faces large costs in removing sediment from its water reservoir. Planting trees on the adjacent slopes to reduce sediment flow into the reservoir can have large benefits for the enterprise (Sarah Duff);
- A private electric company can greatly reduce the maintenance costs on its transmission lines (mainly mowing vegetation under the lines) by planting low-maintenance vegetation that also creates diverse habitats (Juraj Jurik);
- A private company can invest in the renewal of wetlands next to its facilities by planting native shrubs and trees, restoring native habitats for local fauna and reducing flood risk to its facilities (Nathalie Nyssen).

The above examples illustrate the potential for a business case if the savings/benefits from the NBS outweigh the investment cost. Private individuals or entrepreneurs might then fully finance NBS, most commonly with their own capital or with credit from a private or public bank such as the EBRD or European Investment Bank (EIB). As noted by participants, the key barriers to private financing include a lack of information on the NBS effectiveness, unfavorable regulations, lack of awareness on behalf of the enterprise, and path dependency or difficulties in shifting norms and culture from traditional grey solutions to nature-based solutions (Bjørn Kalsnes, Carla Lostrangio, Karen Sudmeier-Rieux).

The private sector might also prioritize and fully finance an NBS if the benefits accrue, not to the business itself as in the above examples, but to beneficiaries who are willing to pay for the generated amenities or services, that is, if the firm can capture a revenue stream to cover its costs and provide a return on its investment. An example is a wildlife park that charges for admission. The benefits of the park may go beyond user enjoyment to providing supporting services (e.g., pollinators), provisioning services (e.g., drinking water), regulating (e.g., climate regulation) and cultural services (e.g., cultural heritage). In the above example of the hydropower plant, the owner of the adjacent slopes might charge the plant for forestation as payment for an ecosystem service (PES).

Uncertainty in the effectiveness of the NBS is a formidable barrier for private investment in NBS infrastructure, which might be overcome by deploying innovative financial instruments to de-risk projects (e.g., risk underwriting, provision of guarantees, and technical assistance). One participant pointed to the potential of downstream residents paying for an upstream NBS to reduce their flood risk and combining this with a reduction in insurance premiums. Another innovation are the so-called resilience bonds i.e. a sub-set of green bonds, that seek to raise capital specifically for climate resilient investment. More precisely these are a form of catastrophe bond that link insurance premiums to resilience projects in order to monetize avoided losses through a rebate structure, which could be coupled with reductions in insurance premiums that would finance the bond repayment.

The EBRD has a particular interest in profitable or 'bankable' NBS investments. As a public bank, its challenge is to orient its private sector business model (the Bank's mandate dictates that it provides credit for projects that anticipate a positive economic return) with its ambitious new Green Economy Transition (GET) approach (2021 to 2025). The GET sets a target green finance ratio of more than 50% by 2025. As pointed out by Sarah Duff, the Bank will try to overcome practical barriers to private

investment by providing support in project preparation and implementation as well as policy work in countries of operation. Indeed, the EBRD was the first financial institution to issue a resilience bond (<https://www.ebrd.com/news/2019/worlds-first-dedicated-climate-resilience-bond-for-us-700m-is-issued-by-ebrd-.html>). Enabling private NBS investment will have an important role alongside the Bank's financing activities.

Beyond public banks, the idea of an NBS project preparation facility – perhaps at the local or national scale – that would assist private and public investors was brought up by the PBF discussants, who emphasized the need for more available information on the benefits and co-benefits of NBS to support private and public sector investors. Another suggested tool to facilitate private sector engagement is a user-friendly benefit and co-benefit catalogue for the private sector (Karen Sudmeier-Rieux).

### **Blended financing: NBS partly financed by private sector**

For many NBS investments it is difficult for private investors to capture revenues that generate a sufficient return on their investment, which is limiting interest from traditional financial institutions. At the same time, as shown in the above examples, many NBS generate benefits beyond those to a private investor. Returning to the above examples - the forested slope for erosion control, the transmission line vegetation, and the green flood protection measure - each potentially provide co-benefits to the public, such as biodiversity conservation, carbon sequestration, esthetic value, health impacts, and more. Because of these co-benefits or knock-on effects (in economic jargon, externalities resulting in market failure), the public has a legitimate role in co-financing NBS. This is often referred to as 'blended' finance. The participants noted a number of promising co-financing options that provide incentives to private investors, including subsidies and tax rebates for NBS investments.

Alternatively, participants pointed out that NBS projects can be co-developed and co-financed as public-private partnerships (PPPs), which can include the public sector, financial institutions, and private enterprises. PPP projects harness both the public and the private sector to provide goods and services which are conventionally supplied by the public sector, while easing the stringent budgetary constraints placed on public expenditure. The most common form of PPP is the "Design-Build-Finance-Maintain-Operate" (DBFMO) contract, for which the private partner is entrusted with design to construction, operation and maintenance of the infrastructure, including fundraising. Since most PPPs have been implemented in the field of transport, healthcare, education and renewable energy, their potential for NBS is generally underexplored. For the most part, PPPs are financed by the private sector with the guarantee of an investment return (the risks are shared with the public sector); however, the PPP model can also make use of blended finance, which may be an underexplored opportunity.

In her presentation, Monica Altamirano provided an overview of the different Public-Private implementation and financing arrangements that have been successful in enabling implementation of NBS at scale. Several examples were presented including the coral reef insurance in Mexico, aimed to finance maintenance of coral reefs and to provide assured financing to restore reefs after storm damage and the water stewardship project "Eau de Paris", France aimed at improving water quality by reducing diffuse pollution from agriculture. Public project procurement, water stewardship (i.e. private companies investing and commissioning third parties to implement measures and reduce risk), collective investment schemes (i.e. entity that pools resources from different beneficiaries) and environmental markets (i.e. dedicated markets, usually subject to oversight by a regulatory body) were discussed. It was also highlighted that water security strategies translate into a pipeline of projects that are investable from a public and/or private perspective. In this context, a complete business case per deal that is part of the strategy is essential. The presentation also focused on the building blocks of NBS financing frameworks including: mode of governance; funding strategy; financing and procurement strategy.

### Public financing: NBS fully financed by the public sector (yet involving the private sector)

According to the H2020 Naturvation project findings, almost 75% of nature-based solutions are funded from public sources (public budget/direct funding or subsidies). Indeed, most NBS investments are public goods in the sense that i) it is costly or impossible to exclude anyone from their use (non-excludability) and ii) the benefits of the NBS do not decrease if one person makes use of it (non-rivalrous). For pure public goods, the private sector cannot capture revenues, which means that the only alternative is for the public sector to provide the financing. Considering the scale of NBS required to counter biodiversity loss, climate change and other pressing global issues, the pressure on public finances is intense.

The financing of NBS by the public sector does not however exclude that the NBS does not yield benefits to private businesses. Nor does it necessarily imply that the NBS is designed and implemented only by public authorities. Indeed, strong leadership from the public side does not mean that there is no investment from the private sector. Rather, it is just a condition for it.

There is a long history of procurement of private contractors to design and construct public infrastructure, which continues for NBS. Examples from the PHUSICOS project include public procurement for the construction of wooded barriers for landslide prevention in the Pyrenees and the natural and receded barriers for flood mitigation in Gudbrandsdalen, Norway.

Typically, public investment in NBS yields benefits to multiple sectors and beneficiaries. Juraj Jurik in his presentation describes a public investment in a nature-based infrastructure facility in Cyprus that was justified by the avoided damage costs from its flood reduction services, as well as other co-benefits, including enhancement of biodiversity, provision of habitat, soil erosion control and carbon sequestration.

Equally, payment for ecosystem services are not confined to private markets as described in earlier examples. Taxpayers can also pay for the private provision of these services, which was illustrated in the presentation by Nicola Del Seppia. In Italy's Serchio River Basin, the pesticide and manure runoff from agricultural land is leading to substantial soil erosion and pollution of the Massaciuccoli Lake. Building on a successful stakeholder process, farmers in the basin have agreed to give up cropping on parts of their fields and to construct buffer strips along the small waterways. This will reduce erosion to their own fields and reduce contaminated runoff into the lake. Since the buffer strips will be populated with selected native plant species, it will also improve biodiversity in the basin. The farmers are paid for providing these ecosystem services – namely NBS creation and maintenance- by the public authorities (Consorzio di Bonifica) that also acted as facilitators in the relationship between farmers and farmer associations. One commentator at the PBF suggested that PES of this sort be mainstreamed with tariff tables and forms of compensation for farmers, foresters and others who create and maintain NBS. Moreover, it was highlighted that an efficient environmental monitoring system (soil, water, ecosystems, etc.) is necessary to recognize the NBS eco-systemic value. To scale up this NBS, it is also critical to promote new legislation that require NBS to be mentioned as the preferred adaptation solutions: thus, if NBS are not selected, the decision should be justified. An example is the Norwegian “National guidelines for climate and energy planning, and climate adaptation”.

Figure 1 provides a graphic summary of the key discussion points for each financing model.

Figure 1: Graphic summary of key discussion points



### Cross-cutting themes

A number of themes emerging from the PBF discussions span across the three financing models. These include the potential for public-private partnerships (PPP), payment for ecosystem services (PES), the importance and challenge of assessing NBS value to investors and society, and the potential for innovative financing instruments. A summary and examples of cross-cutting themes across private and public financing models (and their blend) is shown in Table 1.

Table 1: Cross-cutting themes for each of three financing models discussed with the PBF participants

	Private financing model	Blended financing model	Public financing model
<i>Public Private Partnerships</i>	PPPs can be co-designed, constructed, operated and/or maintained, as well as financed by private sector agents. This can be enabled by the public sector by sharing the risks, e.g., a wildlife park built and operated by a private company, and the public authorities guarantee the private loans.	The NBS is co-designed and constructed by a public-private consortium as well as co-financed, e.g., construction of green roofs on public housing with public subsidies.	The public agency finances the NBS, which is designed, constructed, operated and/or maintained by the private sector, e.g., farmers in the Serchio River Basin are paid to establish and maintain buffer strips.
<i>Payments for Ecosystem Services</i>	The private investor prices NBS ecosystem services and collects revenues from the beneficiaries or users, e.g., a developer provides a green space and collects user fees.	The costs of an ecosystem service are shared by the private and public sectors, e.g. residents install green roofs subsidized by the municipality.	The NBS providing ecosystem services is fully funded by taxpayers, e.g., re-forestation of private and public land.
<i>Value assessment and dealing with uncertainty</i>	A firm's return on an NBS investment can be assessed through traditional methods, e.g., risk assessment and market surveys. Uncertainties, however, may be great, requiring hedging instruments, such as insurance.	A blended finance arrangement can reduce business uncertainty by transferring some of the risks to the public sector, e.g., the uncertainty of the efficacy of an urban flood protection measure can be hedged with government guarantees.	The public agencies assess the economic, social and ecological returns on NBS investment. Traditional measures, like cost-benefit analysis, can capture wider benefits although quantification is complicated (e.g., which discount rate? how are benefits to future generations estimated?).
<i>Innovative financing instruments: opportunity for the private and public sectors</i>	Beyond the firm's own capital, equity, credit and user fees, green bonds are becoming more prevalent even for the private sector. A major innovation may be tying the resilience investment with reduced insurance premiums. e.g. potential of downstream residents paying for an upstream NBS to reduce their flood risk and combining this with a reduction in insurance premiums.	Innovative financial instruments to de-risk projects include risk underwriting, provision of guarantees, and technical assistance	Typical financing includes tax revenues, bonds and user fees with innovative resilience and catastrophe bonds with reductions in insurance premiums that would finance the bond repayment.



## Barriers and opportunities for NBS mainstreaming and scaling

Barriers and opportunities for NBS mainstreaming and scaling were also discussed by PBF participants, adding to the results of the first PBF (available at [https://phusicos.eu/wp-content/uploads/2020/06/PBF1\\_Synthesis.pdf](https://phusicos.eu/wp-content/uploads/2020/06/PBF1_Synthesis.pdf)). Specifically, the following insights on barriers, opportunities and overcoming challenges were discussed.

First, countries have diverse governance systems for DRR; yet we can learn from good practices, especially concerning sometimes novel horizontal and vertical governance structures (e.g. making room for rivers in the Netherlands, in which case new forms of collaboration were institutionalized). By harmonizing governance procedures and funding opportunities, new markets can emerge for the private and financial sectors. Note that it is important to take a long-term perspective on NBS, many of which are not cost-effective in the short-term. For this, we need more long-term financing arrangements, which can be catalyzed by involving both financial institutions and public authorities.

Second, collective efforts are needed for NBS to become the first and easiest-to-implement choice in risk management plans (e.g. those derived by European Directives such as 2000/60/EC and 2007/60/EC). For example, in Norway the 2018 regulation "National guidelines for climate and energy planning and climate adaptation" ([https://lovdata.no/dokument/SF/forskrift/2018-09-28-1469/KAPITTEL\\_4-1#KAPITTEL\\_4-1](https://lovdata.no/dokument/SF/forskrift/2018-09-28-1469/KAPITTEL_4-1#KAPITTEL_4-1)) explicitly mentions nature-based solutions as an adaptation solution that should be assessed. Additionally, if NBS are not selected, the regulation states that this decision shall be justified (Amy Oen).

Third, fostering open discussions at local level about the NBS long-term and systemic benefits can facilitate their adoption and mainstreaming. Even when NBS financing is available, there can be regulations that block their implementation. Possible reasons can be limited space availability or competing regulations regarding the preservation of cultural heritage, which may pose serious challenges for NBS scaling. Thus, there is a need for open discussion with decision-makers on urban planning priorities (Sergio Castellari).

Fourth, participants highlighted other opportunities to enable NBS, for example by working on multiple governance levels linked to NBS politics and policy. In particular, political will was considered critical, especially because trust in NBS and their performance is still lacking. Additionally, NBS experts working with and for public authorities are scarce. Engaging a diverse range of stakeholders, including e.g. natural scientists, bankers and insurers, was regarded as a recipe for successful NBS implementation. This once again emphasizes the importance of cross-sectoral partnerships and multidisciplinary (Juraj Jurik).

Fifth, participants argued that radical shifts might be needed to reform and green the European Common Agricultural Policy (CAP). Likewise, stable policies were considered prerequisites for mainstreaming NBS, since they require long-term maintenance and continuity (Gerd Lupp).

Sixth and lastly, it was recognized that NBS can play a critical role in ensuring that the post-COVID 19 recovery fund (estimated € 1.8 trillion), as well as the implementation of the EU Recovery and Resilience Facility, are green, healthy, just and equitable. Clear quantitative targets for NBS investments and evaluation tools to track performance of recovery packages are hence needed to genuinely foster a green transition.

## PBF next steps

**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 proposing new ideas for governance and policy structures that can lead to greater success on the acceptance and implementation of NBS.

**2. Commitment to become a ‘champion’ for NBS in the DRR sector in 2021 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 and NetworkNature.

**3. Meet again with PBF members in 2022 with commitment to ‘recruit’ other interested participants.**

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