

PIONEERING NATURE-BASED SOLUTIONS FOR RESILIENT INFRASTRUCTURE

COP26, 5 November 2021

OUTCOME DOCUMENT

The hybrid session “Pioneering Nature-based Solutions for Resilient Infrastructure” held at Resilience Hub at the 26th UN Climate Change Conference of Parties (COP26) on 5 November 2021 focused on the challenges and key actions at different stages of a project life cycle for nature-based solutions (NbS) in the context of resilient infrastructure. The session discussed key learnings from case studies around the world and how recommended actions have been incorporated into NbS projects in complementarity with other grey infrastructure initiatives. It also marked the release of the white paper on ‘Governance of Infrastructure for Resilience’, developed by Coalition for Disaster Resilient Infrastructure (CDRI) and Resilience Shift, in partnership with Arup.

The session panelists were Mr. Seth Schultz, CEO Resilience Shift, Ms. Riya Rahiman, Senior Specialist, Infrastructure Resilience, CDRI, Ms. Emily Pidgeon, Vice President of Ocean Science and Innovation, Conservation International, Mr. Sven Kramer, Director Sustainability, Van Oord, Mr. Unnikrishnan Nair, Head of Climate Change, Commonwealth Secretariat; and the moderator was Mr. Tanaji Sen, Director- Advocacy and Partnerships, CDRI.

The session began with opening remarks by Ms. Riya Rahiman followed by the release of white paper. After a brief round of opening remarks by all the four panellists, and a set of discussions over the questions put forward by the moderator, the floor was opened for questions from audience. The session ended with a key message from the moderator.

Key Discussion Points

- 🔗 **Governance for integrating NbS into decision-making** - NbS are gaining traction as a comprehensive strategy for promoting adaptation and resilience of infrastructure of today and for future. There exist several governance challenges as well as opportunities for integrating these solutions into traditional decision-making for infrastructure investments.
- 🔗 **Learning from practice** – Innovative solutions for coastal protection from Colombia and

the Netherlands are successful examples of building with nature for infrastructure resilience. Combining green infrastructure solutions with more conventional grey approaches can revive lost natural ecosystems and enhance coastal protection.

- 🔗 **Financing for NbS** - Supporting countries to access climate finance for provision and implementation of NbS at scale requires innovative financing instruments and evidence of lower cost and higher adaptive capacity of NbS.

NbS – The Challenges

- “ Existing regulatory frameworks can conflict with environmental management demands and act as a barrier to implementation of NbS.
- “ Many of the benefits associated with NbS cannot be capitalized by any one party or organization. They create externalities that impact different groups, resulting in a problem of ownership.
- “ The short-term nature of public and private sector decision-making hinders the longer-term planning and maintenance required for the emergence and sustained provisioning of NbS benefits.
- “ The ability of NbS to deliver the desired advantages has not been thoroughly evaluated.
- “ Lack of capacity development, knowledge management, academic learning and training is a major challenge to more widespread adoption of NbS.
- “ Whereas novel approaches and studies have developed ways to quantify and assess risk reduction benefits in NbS, finding the right data at the right time to assess such services in data-poor environments, both at regional and local levels, remains challenging.



NbS in Practice – Global Examples

Hondsbosche and Pettemer Sea Defence project, Netherlands: The innovative project not only protects the coast but also creates natural conservation and leisure activities. An inclusive and proactive public-private partnership engaging local communities resulted in NbS like dunes, beaches, foreshore, and recreation areas, designed to withstand a 1 in 10,000-year storm surge. It is a successful example of building with nature principle, combining the development of new nature ecosystems with coastal protection providing safety for locals. Involving local communities as active contributors can provide insightful methods for implementation on the ground.

Link to Project Video: https://youtu.be/cQ4nWzq_ZII

Cienaga Grande, North Coast of Colombia: Construction of an elevated highway in 1950s and dykes ceased the natural exchange between the ocean and coast, resulting in depletion of more than 50 percent of the mangrove on the coast.

The project combined green infrastructure solutions with more conventional grey approaches to build an elevated roadway while also restoring the lost natural exchange. The project’s cost benefit analysis reveals that combining green and grey solutions result in lower costs and higher resilience in addition to other benefits like increased biodiversity, productive fisheries, reduced interference to wildlife, among others.

Recommendations

Governance for NbS

- 🔑 It is vital that NbS are approached in a more holistic manner. Governance of NbS for infrastructure resilience requires active cooperation, collaboration and coordinated action between stakeholders whose goals, ways of working and targets may not coincide. Greater linkages between the layers of the governments – national, regional to local – can enable the vertical and horizontal integration of policies that do not exist in different countries.
- 🔑 Authorizing and enabling regulatory flexibility can create an enabling environment to integrate NbS into development pathways that can reduce disaster risks and facilitate climate adaptation.
- 🔑 Involving local communities and indigenous people aids implementation of NbS in practice and science for NbS

Data and Science for NbS

- 🔑 Scientific evidence and past experiences can help governments upskill and mainstream NbS in their policies. There is a need to understand climate vulnerabilities and the interdependencies of the natural environment and existing infrastructure assets while moving forward in a transformative way.
- 🔑 A lot of available vulnerability and risk assessment data for regional models must be downscaled to a level of resolution that can be understood, implemented, funded and then maintained. Complementing this with usable decision-making tools can support mainstreaming of NbS. Developing a multi-hazard criterion to

measure progress and performance in real time would inform practice and science.

Financing for NbS

- 🔑 It is important to include all benefits in the valuation of a project to increase the appeal of NbS compared to grey infrastructure. Cost-benefit analysis of a project based in Ciénaga Grande in North Coast of Colombia showed that a combination of green-grey solutions come at a lower cost and offer higher resilience and adaptive capacity than grey infrastructure solutions alone.
- 🔑 Financing for NbS requires complementary provisions such as country ownerships and commitments through charters, appropriate risk sharing arrangements for decision-making, and innovative financing instruments like blended financing¹.

Collaborating for NbS

- 🔑 The creation of multilateral consortia of close partnerships between companies, communities, governments, national and international financial institutions is critical to the provision of large-scale, long-term investments in ecosystems.
- 🔑 The value proposition for integration of NbS needs to include environmental, social and economic benefits as well as alternative value addition methods. Combined with greater support from Project Preparation Facilities², new sources of funding may be discovered.

¹ Blended finance is the strategic use of development finance and philanthropic funds for the mobilization of additional finance towards sustainable development in developing countries. This helps enlarge the total amount of resources available to developing countries.

² Project Preparation Facilities (PPFs) are used as means of developing bankable, investment-ready projects. A PPF may provide both technical and/or financial support to project owners/concessionaires or developing countries that face capacity constraints.



PANELISTS



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