Event details

Title	**Nature Based Solutions for Resilient Infrastructure**
Date	15 July 2021
Speakers	▪ **Stefan Rau**, *Senior Urban Development Specialist, Asian Development Bank*
	▪ **Annadel Cabanban**, *Head of Office, Wetlands International Philippines*
	▪ **Saroj Yakami**, *Country Manager, MetaMeta Nepal*
Moderator	▪ **Hanna Uusimaa**, *Senior Climate Change Specialist, Asian Development Bank*

Image source: ADB

Overview

Scaling up delivery of nature based solutions

Nature based solutions are driving a global transformation from traditional grey infrastructure to functional and more cost effective green and blue systems that can better cope and adapt when faced with climate and disaster risks. The first session of the Virtual Dialogues on Resilient Infrastructure Season 3 brought together experts and practitioners to discuss case studies and opportunities to scale up nature-based solutions for resilient infrastructure.

During the scene-setting presentation for the session, **Stefan Rau** shared perspectives from ADB's East Asia Department, highlighting the 'sponge city' approach that responds to climate risks including flood and drought by adopting a range of nature based and hybrid approaches to make cities more pervious, improve water resource management, and generate health benefits. Stefan shared examples of the Jiangxi Pingxiang Integrated Rural-Urban Infrastructure Development Project, Hubei Huanggang Urban Environmental Improvement Project, and Jilin Yanji Low-Carbon Climate-Resilient Healthy City Project which demonstrate how the sponge city approach has evolved over time, emphasizing the importance of systemically integrating sponge city elements, infrastructure, and public space. Comprehensive climate risk assessment is key to inform identification and design of sponge city investments.

The first 'burst' speaker **Annadel Cabanban** shared case studies and lessons learned from Wetlands International Philippines' work to implement nature based solutions in Tacloban-Palo, Philippines to enhance resilience to disaster risks, including storm surge through coastal-zone protection, mangrove restoration in underutilized fishponds, and integrated risk management. Annadel highlighted the importance of ensuring a coordinating body for implementing coastline strategy to ensure an integrated approach to delivering multiple interventions – similar to having an orchestra that requires a conductor to set the pace and tone. Also, the importance of understanding ecosystem issues and challenges to inform effective design of nature based solutions. Key lessons learned include addressing challenges around overlapping mandates of authorities in coastal zones; the building local capacity for nature based solutions through training, study tours and pilot sites; and taking an eco-system based landscape approach to implementing urban planning.

Next, **Saroj Yakami** shared MetaMeta Nepal's innovative approach to 'Green Roads for Water'. The approach aims to address road-related challenges such as flooding, water loading, erosion, dust and damage by integrating water resource management and greening road design. Pilot projects in Bangladesh demonstrate how effective road alignment and use of gated culverts can allow catchment water levels to be managed flexibly to reduce flood risk, enhance agricultural production, and result in significant economic benefits. Another case study in hill and mountain areas of Nepal demonstrated a road design approach that protects springs and allows collection of water for agricultural use, along with integration of stone causeways to reduce flood risk.

Key Takeaways

1. **Designing infrastructure with nature can generate significant benefits** which go beyond the footprint of an infrastructure project such as flood protection, ecological restoration, enhanced air quality, heat island mitigation, and water resource management.

2. **Nature based solutions require integrated systems approaches** encompassing ecology, infrastructure, and land use. This involves looking beyond a single asset or project to consider and plan the function and integration of nature based solutions within the broader landscape, catchment, or urban area.

3. **Coordination of stakeholders and programs is key** for successful scale up of nature-based approaches. The role and mandate of authorities, public and private sector stakeholders, and communities should be clearly defined and understood.

4. **Inclusive design of nature based solutions** can help to increase potential benefits for communities in terms of health, wellbeing, livelihoods, environmental quality and land value. Active engagement and participation of different stakeholders is key to inform such approaches.

5. **Sustainable long-term implementation of nature based solutions** requires evaluating and accounting for long-term maintenance requirements and building strong ownership. The potential role of local leadership, communities, users should be considered. Capacity building and public engagement such as training and pilot projects are important.

6. **There is a perception barrier around whether nature based solutions are truly 'infrastructure' and whether they are cost effective.** Public sector can play a role in delivering pilot projects and evaluating these to quantify economic, environmental, and social benefits. A standardized methodology for cost-benefit analysis across the entire lifecycle of nature based solutions would be useful to inform their broader scale-up.

7. **Undertake climate and disaster risk assessments** to identify high risk areas (such as those prone to flooding or landslides) in advance of project preparation and ensure land use is planned appropriately to avoid damages and losses in the long-term. For example, by reserving such areas for nature-based public infrastructure (e.g., recreation areas, ecological reserves) where appropriate.