

Celebrating the PEDRR Network's 15th anniversary and beyond: Nature as a connector between disaster risk reduction, climate, land and biodiversity 13-15 September, 2023, room 2705, LEU, UN Campus, Bonn, Germany

This concept note outlines the rationale, objectives and expected outcomes of the 5th Partnership for Environment and Disaster Risk Reduction (PEDRR) Network workshop.

Introduction

Ever since the 1972 Rio Convention, there have been multiple calls and commitments of many countries towards the global sustainability agenda on climate, land and biodiversity, notably the three binding Rio Convention agreements, the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR). Progress has been made but not enough to avert the triple planetary crisis – pollution – climate change - biodiversity loss and land degradation which are driving increasing numbers of disaster events and humanitarian crises. The triple crisis is also affecting populations unevenly, especially women in the Global South, persons with disabilities but also youth around the world, who are increasingly vocal in protesting against the status quo, while offering innovative solutions. Progress includes landmark policy agreements adopted in recent years with ambitious global targets that address the triple planetary crisis, notably: the Kunming-Montreal Global Biodiversity Framework (targets 8, 11 and 15), the Glasgow Climate Pact (Para 38, related to Nature-based Solutions), the Doha Agreement (especially, Loss and Damage), the mid-term review of the Sendai Framework and its High Level Political Declaration. Moreover, the linkages between climate, resilience and environment were discussed during the UN 2023 Water Conference, the first dedicated UN hosted conference on water since 1977.

Ecosystem-based approaches¹ are increasingly recognized across these different policy arenas and implemented on the ground. They are now also embedded in humanitarian discourse and action through guidance developed by international agencies ([Sphere 2023](#)) among others. Technical guidance on ecosystem-based approaches for DRR and CCA has evolved to embrace engineering with nature and other solutions as part of comprehensive risk management, together with other measures, such as early warning systems. The term Nature-based Solutions (NbS) is a broader umbrella term which has become increasingly prominent in the past five years and was endorsed by the United Nations Environmental Assembly in 2022, recognizing, among other objectives the role of ecosystems in building resilience to disaster risk reduction (DRR) and climate change adaptation (CCA). Finally there are many recent solid, evidence-based studies and guidance documenting the monetary value of ecosystems in reducing disaster and climate risks (ref WB, 2023 etc). The political commitment towards advancing NbS, including ecosystem-based approaches for DRR and CCA, has been prominent in recent COP decisions, as well as in the context of the G20 working group on DRR, which included the increased application of ecosystem-based disaster risk reduction as a key priority.

Although significant progress has been made, numerous challenges remain to planning, implementing and monitoring ecosystem-based approaches:

- lack of financing, only 3% of global finance is spent on ecosystem-based approaches (UNEP, 2022), a fraction of what is spent on gabion walls, sea walls or river dykes;
- lack of public-private sector partnerships which would accelerate NbS financing at larger scale;
- large-scale implementation of NbS, including sufficient track records of large scale NbS implementation for various hazards and ecosystems
- terminology has become or is being politicized;
- limited evidence on role of ecosystem-based approaches in addressing climate change induced loss and damage, disaster recovery and rehabilitation;

¹ Several terms are used here: "ecosystem approaches for DRR and CCA", includes Ecosystem-based disaster risk reduction (Eco-DRR), Ecosystem-based Adaptation (EbA), which are considered sub components of NbS, a much broader umbrella term (reference IUCN, XX)

- guidance which also acknowledges the limits of ecosystem-based approaches in addressing all types of hazards and climate impacts as well as elements of justice and equity.
- and perhaps above all: NbS implementation across the policy agendas remains disconnected and siloed, hampering accelerated progress on the above points.

Yet, we only have 7 years to achieve our global policy targets under the 2030 agenda. Thus, there is an urgent need for guidance and outreach which support integrated solutions for these different but very much inter- linked policy agendas.

Fifteen years of PEDRR and counting..

The PEDRR Network was founded in the aftermath of the Indian Ocean tsunami when questions were raised about the role of mangroves and other ecosystems in reducing disaster risk. The PEDRR Network was born in 2008 when eight international agencies, academia and non-governmental organizations (NGOs) representatives came together to collect scientific evidence on ecosystem-based approaches to disaster risk reduction (Eco-DRR), which they translated into policy briefs and presented at conferences and policy dialogues worldwide. Fifteen years later, PEDRR is a well-established network which continues to collect and promote cutting edge science on the important role of ecosystems in reducing disaster risk through its weekly newsletter, webinars, on-line courses, in-person workshops, conference sessions, policy briefs, contributions to scientific articles and books promoting “Eco-DRR” – a term coined by PEDRR Network members.

These outreach activities have informed policy decisions but have also contributed to the increased interest in the topic worldwide. Today, the PEDRR Network has grown to include 28 PEDRR Partners, 2 PEDRR Affiliates, and an additional new PEDRR partner (UNCCD- G20 Initiative on Land) who share the common goal of better understanding, documenting and promoting the role of ecosystems in meeting the above mentioned international framework agreements. It continues to collaborate closely with related networks such as the Friends of Ecosystem Based Adaptation (FEBA) and the Environment and Humanitarian Network (EHA). The 5th PEDRR Network Workshop comes at a critical time, when much hope and political capital have been raised on ecosystem-based approaches for reducing disaster and climate risks, but where policy guidance, investments and implementation are still lagging.

Objectives

The main objective of this 5th PEDRR Network (and beyond) Science-Policy Workshop is to celebrate our collective achievements and define a 15-year science-policy agenda that will address how ecosystem-based approaches for disaster risk reduction (DRR) and climate change adaptation (CCA) can deliver across the 2030 Global Agenda and beyond to 2040.

More specifically, the Workshop will take stock of specific targets and emerging topics within each of the Rio conventions² and the Sendai Framework for Disaster Risk Reduction to determine PEDRR Network science and policy actions in advancing each target, notably Nature’s role in accelerating:

1. Advance implementation of Sustainable Development Goals
2. Recommendations of the Mid-Term Review of the Sendai Framework and the High Level Political Declaration;
3. Advance Glasgow–Sharm el-Sheikh work programme on the Global Goal on Adaptation and Loss & Damage preparations for UNFCCC CoP 28;
4. Targets 8, 11, 15 of the Kunming-Montreal Global Biodiversity Framework (GBF);
5. Nature’s role in the Land Degradation Neutrality Framework, more specifically related to advancing practices related to DRR-Land and biodiversity.

² United Nations Framework Convention on Climate Change (UNFCCC)
United Nations Convention on Combating Desertification’s (UNCCD) Land Degradation Neutrality (LDN) framework
United Nations Convention on Biodiversity (CBD)

Workshop Themes and Structure

The workshop will achieve the above objectives by exploring three cross-cutting themes in an integrated manner while providing space for innovation and forward thinking: There will be a final half day session on the realities of land restoration which will bring together the themes of DRR/CCA-Land-GBF linkages with the objective to wrap up the workshop main messages from each session.

1. Data, assessment and monitoring;
2. Implementation and planning (embedding in national planning, scalability, future scenarios);
3. Financing (scope, access and scalability);
4. Bringing it all together: land restoration, DRR and biodiversity.

Inclusivity, youth action, innovation and future trends are cross-cutting themes to be included in each session

Target audience (50 participants)

- PEDRR Network members;
- Practitioners, notably youth representatives, civil society and private sector representatives (eco-entrepreneurs, investors, environmental engineers);
- Policy makers and Government representatives;
- Academia and researchers.

Expected outcomes

- PEDRR's Science and Policy Agenda for the next fifteen years on advancing NbS implementation to address key international framework targets including identifying future trends, gaps and innovations in ecosystem-based approaches for DRR and CCA;
- Celebration and stocktaking of PEDRR Network accomplishments and a strategy for future collaboration;
- Launch of the toolkit on NbS for comprehensive disaster and climate risk management;
- Development of a discussion paper, scientific publication, updating the Words into Action guidance...

Session summaries

For each half-day session, session leads have drafted short thematic session papers to guide the scope, objectives, expected outcomes, session format and speakers for each session. We will hear from a panel of global youth leaders about their aspirations, hopes and questions related to the workshop theme: **Nature as a connector**.

Thematic session 1: Data, assessment and monitoring

This session will elaborate on existing gaps, opportunities and needs related to data, assessment and monitoring to better inform nature-based prevention and adaptation monitoring. The outcomes of this session will provide recommendations for relevant science-policy agendas, to ensure that relevant, reliable, risk-informed and comprehensive data and information products are available and assessment methods are tailored to current and future monitoring and reporting demands. To achieve this, the session will be facilitated along the following 3 themes with a focus on assessing the status quo, while providing a forum to envision future needs and opportunities for the post 2030 Agenda:

Guiding questions

a. Prevention:

- What are the gaps in data and assessments to account for the contribution of ecosystem-based approaches for DRR and CCA?

- How do we address these gaps? What are the challenges and opportunities to enhance data availability?

b. Loss and Damage:

- What are the gaps in data and assessments to account for environmental aspects of loss and damage, especially in the context of slow-onset events and NELDs?
- How do we address these gaps? What are the challenges and opportunities to enhance data availability?

c. Data governance and monitoring:

- What is a good data governance approach to enable harmonized monitoring and reporting across the 2030-Agenda?
- How can the gaps and technological challenges be better addressed to monitor and track ecosystem losses and their contribution to DRR and CCA?
- What is needed to ensure that environment-related prevention and loss and damage is considered in the post 2030 Agenda?

Thematic session 2: Implementation and planning

This session explores key pathways and approaches that help translate global ambitions into impact at regional, national and local levels. It provides a forum for discussing barriers and bottlenecks as well as opportunities to coherent and risk-informed planning across interlinked policy domains as a contribution to the policy-science discourse on improving comprehensive risk governance. In this session, we will further reflect on implementation challenges, including how to achieve impact at scale.

Guiding questions

- How can nature-based solutions support common/joint planning and implementation in support of the goals of the Rio Conventions and the Sendai Framework and how can this be implemented at country-level (i.e. mainstreaming of NbS with NBSAPs, NAPs and NDCs) ? Conversely, how can joint planning support the implementation of nature-based solutions?
- What are current challenges to achieving implementation and impact at scale and what steps need to be taken in policy and planning to enable nature-based solutions at scale? What is the role of different sectors in facilitating design at scale?
- What are the risks from loss and damage to ecosystems and how can NbS implementation address climate induced loss and damage?
- What is needed to foster greater collaboration and partnership for common planning and implementation? What approaches, tools and/or mechanisms have proven useful so far and what innovative ideas could be implemented to achieve this at country-level?

Thematic session 3: Financing NbS for disaster risk reduction: Mind the gap!

New public and private financing schemes for Nature based Solutions (NbS) are emerging rapidly. These are driven by both regulatory compliance, global pledges for restoration and market forces, which put forward nature as a potentially profitable and tradeable market asset. The aim of this session is to define main research gaps and action points for the PEDRR Network action plan 2040; and to develop recommendations to UNDRR and Rio Conventions on alignment of NbS for DRR finance mechanisms, priority research topics and future scenarios of NbS for DRR investment priorities.

Guiding questions

1. How can public policies facilitate the de-risking of private investments and promote investment in Nature-based Solutions (NbS), particularly for disaster risk reduction?
2. How to encourage and access more innovative financing mechanisms?
3. How to support standardization of NbS valuation and carbon off-set methodologies related to NbS?
4. How to bring social protection and NBS investment together?
5. How to support greater alignment among international frameworks and financing initiatives related to NbS financing?
6. What do future climate scenarios mean for NbS financing (in particular for DRR & CCA) and future investment risks?

Thematic session 4: Bringing it all together: land restoration, disaster risk reduction and biodiversity

The newly adopted Kunming-Montreal Global Biodiversity Framework (GBF) made a firm commitment to restore degraded ecosystems, under Target 2: *Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.*

Thematic Session 4 will explore how can we leverage the global commitments for land restoration under various processes, including the GBF, to achieve disaster risk reduction and climate resilience.

Guiding questions

- **Land based interventions for Nature Based Solutions:** How can disaster risk reduction be better mainstreamed and promoted within the three Rio conventions as well as other large scale land restoration initiatives?
- **Leveraging on existing land restoration initiatives for DRR:** What are the possibilities of linking Land Degradation Neutrality Targets, Bonn Challenge, Africa Great Green Wall and Middle East Green Initiatives for DRR
- **The Land Gap:** What are the current processes by which land based solutions are included in the UNCCD, UNCBD and UNFCCC processes?
What are the challenges and trade-offs to promoting land restoration, for instance creating a “land gap” whereby there are competing pressures on available land, including for agriculture and food security? How can land restoration activities result in “win-win” outcomes for people and nature?

Draft agenda		Speakers
For virtual participation please Join Zoom Meeting https://ehs-unu-edu.zoom.us/j/94938366474?pwd=cVU3NUdOODVNYIU1NzNlSTArUTlzMz09 Meeting ID: 949 3836 6474 Passcode: 622915		
13 September - Celebrating PEDRR Network achievements and beyond		
8.30 am	Registration	UNU-EHS/ PEDRR secretariat
9.00	Opening session, workshop objectives & thematic sessions	Day 1 Moderator: Marisol Estrella, Disaster Risk Reduction Manager, United Nations Environment Programme (UNEP) and Karen Sudmeier, Eco-DRR independent consultant Opening remarks: Zita Sebesvari, Deputy Director of the United Nations University, Institute for Environmental Security (UNU-EHS) and Nathalie Doswald, (Nature-based Solutions Technical Advisor, International Federation of Red Cross and Red crescent - IFRC) and PEDRR Chair
9.30	Participant introduction ice breaker	UNU-EHS
10.00	PEDRR stocktaking and celebration	PEDRR secretariat
10.30	Coffee/ tea break	
11.00	Setting the scene 1. Nature as a connector between CCA & DRR: launching the Toolkit on Nature-based Solutions for Comprehensive Risk Management 2. A reality check from the field: Ecosystem-based approaches for DRR - Perspectives from Pacific Island communities in Vanuatu 3. How to fund? Global insights: Mainstreaming NBS in World Bank investment projects 4. What next? Scanning the horizon - ecosystem-based approaches	Session moderator: Karen Sudmeier and Stanley Junior Bernard (YOUNGO - Youth Climate Movement, Haiti) Speakers: (10 mins each) 1. Animesh Kumar, (Head of Office, United Nations Office for Disaster Risk Reduction - UNDRR) 2. Christopher Bartlett (National Advisory Board on Climate Change and DRR, Vanuatu) (online)

	<p>Youth leaders panel discussion:</p> <p>Ecosystem-based approaches for DRR & CCA by 2040</p> <ul style="list-style-type: none"> - Reflections/perspectives, hopes and a vision! - Q&A 	<p>3. Defne Osmanoglou (World Bank Global Program on Nature-based Solutions for Climate Resilience)</p> <p>4. Ronan Uhel, (Scientific Advisor to the European Environment Agency - Executive Director) (online)</p> <p>Youth panelists (3 minutes each)</p> <p>1. Roaa Ahmed Alobeid (YOUNGO and Connect for Climate, Sudan) (video recording- TBC)</p> <p>2. Selma Bichbich (MGCY & MENA Coalition for Peace and Security, Algeria) (video recording- TBC)</p> <p>3. Abraham Bugre (United Nations Major Group for Children and Youth; Youth Resilience Lab, Canada)</p> <p>4. Antonio Jr Fabela Regis (Department of Climate Change, Indian Institute of Technology Hyderabad, India)</p> <p>5. Chirag Gupta (YOUNGO, India)</p>
12.30- 13.30 Lunch		
13.30	Thematic session 1: Data, assessment and monitoring	Yvonne Walz, Academic Officer, Head of Environmental Vulnerability and Ecosystem Services (EVES) Division, UNU-EHS and Animesh Kumar
	<p>Introduction to the session (ca. 5 min)</p> <p>Setting the scene with impulse presentations (ca. 30 min):</p> <p>1.) Environmental and ecosystem-related disaster losses – gaps in monitoring at the global level?</p> <p>2.) Connecting global north and south in meeting data needs in a changing climate</p> <p>3.) Existing situation and way forward on data collection, assessment and monitoring of disaster and climate change related losses of ecosystems and ecosystem services in Sri Lanka</p>	<p>Animesh Kumar</p> <p>Ananda Mallawatantri (Advisor to Government at Presidential Secretariat, Sri Lanka) (online)</p> <p>Anoja Seneviratne (Director, Mitigation Research & Development, Disaster Management Centre, Sri Lanka)</p>

	<p>Brainstorming exercise (ca. 30 min) <i>Individual brainstorming on the guiding questions of all three themes</i></p> <p>Breakout groups (ca. 45 mins):</p> <p>Theme 1: Prevention (Room 2725) - Marisol</p> <p>Theme 2: Loss and Damage (Room of 2823) - Le-Anne</p> <p>Theme 3: Data governance and monitoring (Room 2705) - Kristin</p> <p>Coffee break (ca. 30 min)</p> <p>Plenary: Reporting back from breakout groups and consolidating answers (ca. 45 min)</p> <p>Perspectives on vision from the youth (ca. 30 min) <i>Contribution of data, assessment and monitoring</i></p> <p>Wrap-up and conclusions (ca. 10 min)</p>	<p>Facilitators:</p> <p>Marisol Estrella</p> <p>Le-Anne Roper (Programme Management Officer, UNDRR)</p> <p>Kristin Meyer (Programme Management Officer, UNDRR)</p>
17.30	Wrap up Day 1	Marisol Estrella Karen Sudmeier
18.00 Reception	UN Building 29th Floor, LEU	Hosted by the United Nations Office for Disaster Risk Reduction (UNDRR), Bonn office
14 September		
9.00 am	Day 1 Recap quiz and Day 2 objectives	Moderator Day 2: Zita Sebesvari and Yvonne Walz
9.15 am	Thematic session 2. Ecosystem-based approaches for DRR & CCA: Implementing and planning Introduction moderator	Kristin Meyer and Nathalie Doswald

9:20	Keynote presentation: Implementation challenges and limits for nature-based solutions (online)	Hans-Otto Pörtner Prof. Dr. Hans-Otto Pörtner is a marine biologist at the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research in Bremerhaven, Germany and Co-Chair of IPCC Working Group II (Impacts, Adaptation, Vulnerability) in the 6th Assessment Cycle (2015-2023)
9:40	Fireside Chat <ul style="list-style-type: none"> • Marion Iceduna, Advisor Protection and Conservation of Water Resources, Join For Water, Uganda • Sandeep Chamling Rai, Senior advisor for Global Climate Adaptation Policy, WWF (online speaker) • Dr. Sekhar Lukose Kuriakose, Kerala State Disaster Management Authority 	Moderator: Nicole Rokicki, Mobility, climate and environmental protection, Municipality Stadt Rheinbach, Germany
10:15	Coffee break	
10:30	Breakout-groups <ol style="list-style-type: none"> 1. How can nature-based solutions support common/joint planning and implementation in support of the goals of the Rio Conventions and the Sendai Framework and how can this be implemented at country-level (i.e. mainstreaming of NbS with NBSAPs, NAPs and NDCs) ? Conversely, how can joint planning support the implementation of nature-based solutions? (Nathalie) 2. What are current challenges to achieving implementation and impact at scale and what steps need to be taken in policy and planning to enable nature-based solutions at scale? What is the role of different sectors in facilitating design at scale? (Carlos) 3. What are the risks from loss and damage to ecosystems and how can NbS implementation address climate induced loss and damage? (Yvonne) 4. What is needed to foster greater collaboration and partnership for common planning and implementation? What approaches, tools and/or mechanisms have proven useful so far and what innovative ideas could be implemented to achieve this at country-level? (Kristin) 	Yvonne Walz Nathalie Doswald Kristin Meyer Carlos Uribe (Programme Management Officer, UNDRR)
11:35	Plenary Discussion	
12:15	Wrap up	

12.30 Lunch		
13.30	Thematic session 3: - Financing NbS for disaster risk reduction and climate change adaptation: Mind the gap!	Moderator: Jaroslav Mysiak, (Research director/ principal scientist, Centro

		Euro-Mediterraneo sui Cambiamenti Climatici, Italy) Karen Sudmeier
	<p>Format:</p> <ol style="list-style-type: none"> 1. Session introduction, objectives and expected outcomes (5 min) 2. Sessions 1 & 2 quick inputs related to financing (3-5 min each session rapporteur) 3. Keynote: How to guide to innovative finance for NBS (15 min) 4. Presentation: Finance for NBS - challenges in data provision to inform investment decisions (10 min) 5. Presentation: Joint investment in social protection and ecological restoration to build disaster risk resilience, case study (10 min) <p>Q & A (30 min)</p> <p>Instructions for breakout group discussions (5 min)</p>	<ol style="list-style-type: none"> 1. Jaroslav Mysiak 2. Yvonne Walz & Nathalie Doswald 3. Louise Charlotte Baker (Managing Director of the Global Mechanism of United Nations Convention on Combating Desertification) 4. Nina Bisom (Coordinator, Economics of Land Degradation- Economics of Land Degradation Initiative/ GIZ, Germany) 5. Sophie van der Heijden (Project associate, UNU-EHS, Urban Futures and Sustainability Transformation - FAST)
15.00	<p>Breakout group discussions One group / question (6 groups) (45 min)</p> <ol style="list-style-type: none"> 1. How can public policies facilitate the de-risking of private investments and promote investment in Nature-based Solutions (NbS), particularly for DRR and CCA? 2. How to encourage and access more innovative financing mechanisms? 3. How to support standardization of NbS valuation and carbon off-set methodologies related to NbS ? 4. How to bring social protection and NbS investment together? 5. How to support greater alignment among international frameworks and financing initiatives related to NbS financing? 6. What do future climate scenarios mean for NbS financing (in particular for DRR & CCA) and future investment risks? <p>Coffee & tea Market place – group discussions, contd (30 min)</p> <p>Group rapporteur and plenary discussion – focus on recommendations and next steps (45 min)</p>	<p>Facilitators:</p> <ol style="list-style-type: none"> 1. Kristin Meyer 2. Shiro Ndirangu (Afrex Gold Limited, Kenya) 3. Fabian Rackelmann (UNU-EHS, Environmental Vulnerability & Ecosystem Services Section) 4. Sophie van der Heijden (UNU-EHS, FAST) 5. Carlos Uribe (Programme Management Officer, UNDRR) 6. Nina Bisom (ELD/ GIZ) and Marie-Andrée Liere (Landscape Resilience Fund, Germany)
17.00-17.15	Day 2 wrap up and next steps	Moderator
17.30	Nature scavenger hunt in the Rheinaue (Floodplain of the Rhine).	Yvonne Walz and UNU-EHS team
15 September		
9.00 am	Recap day 2 – quiz and day 3 objectives	Moderator Day 3: Nathalie Doswald

		and Kristin Meyer
9.30 am	<p>Session 4: Disaster Risk Reduction-Land-Global Biodiversity Framework linkages</p> <p>Format</p> <ol style="list-style-type: none"> 1. Introduction to the session 2. Three group work looking at 3 Rio conventions and their land based interventions and how DRR can be mainstreamed into them 3. One group working on a large-scale land restoration initiative (e.g. Great Green Wall, Middle East Green Initiative and the Bonn Challenge). 4. Plenary – feedback from breakout groups and discussion on way forward 5. Session summary and conclusions 	<p>Session 4 moderator:</p> <p>Muralee Thummarukudy, Director of the Coordination Office of the G20 Global Initiative on Reducing Land Degradation and Enhancing Conservation of Terrestrial Habitats based at UNCCD</p>
11.15-12.00 noon	<p>Workshop wrap up: key points and next steps</p> <p>Group Photo</p>	<p>Session rapporteurs Moderators</p>
12:30-13:30	<p>Brown bag lunch:</p> <p>"Building Bridges for Land ! Response to Resilience- 15 Years of Partnership in Disaster Management"</p>	<p>In-person at AAH Lower Conference Hall, UN Bonn Campus or virtually Zoom webinar platform</p> <p>Register here</p>
13.30 Lunch		AAH Lower Conference Hall
14.00 - 16.00	PEDRR Network member meeting (by invitation) - room 2309	PEDRR chair Nathalie Doswald

Core organizing partners:



with support from:



Annex:

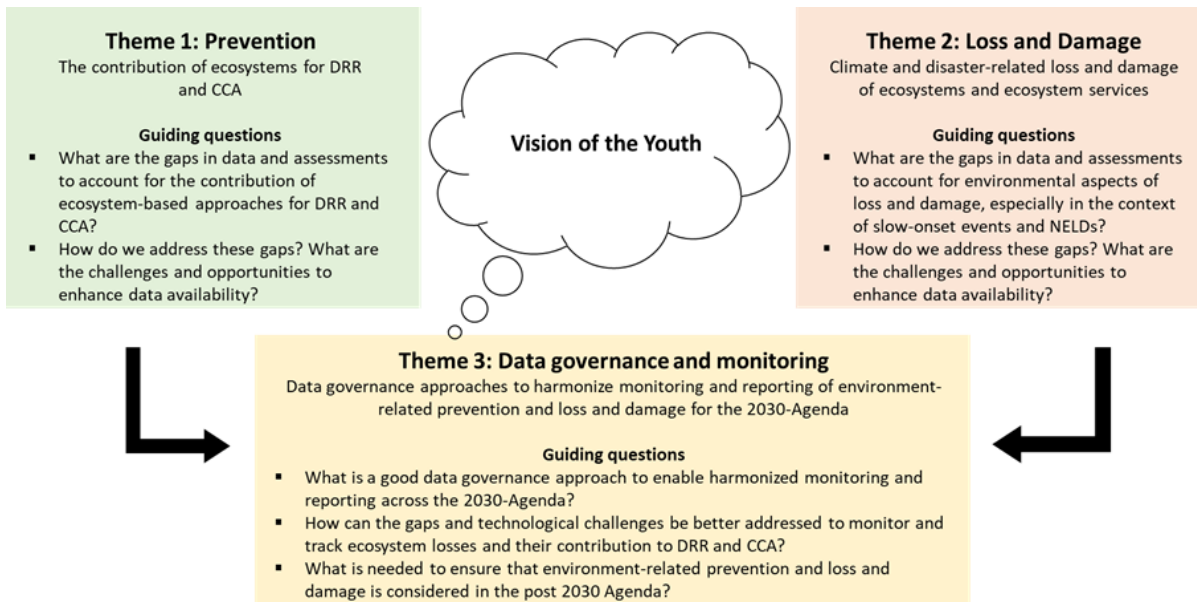
Thematic session 1: Data, assessment and monitoring

Prepared by: Yvonne Walz, Animesh Kumar, Kristin Meyer, Le-Anne Roper, Marisol Estrella

Scope of discussion as related to the workshop objectives

The PEDRR science policy-workshop has the main objective to define a 15-year science-policy agenda, which should ensure that ecosystem-based approaches can deliver across the 2030 Global Agenda and beyond. The scientific basis and evidence that ecosystems and their targeted management provide an essential contribution to building climate and disaster resilience is well established (Renaud et al., 2016, Sudmeier-Rieux et al., 2021). The Rio Conventions and the Sendai Framework for Disaster Risk Reduction 2015-2030 have established international policy frameworks that guide sustainable and climate resilient development globally and provide monitoring frameworks to track progress of respective targets. Nature-based solutions (NbS) are cross-cutting to these policy frameworks and are implemented to address the challenges of the triple planetary crisis. However, at the same time, these crises are severely impacting ecosystems and their capacity to provide services to address these challenges. The understanding, assessment and monitoring of ecosystem loss and damage is therefore central to considering and addressing the limits of NbS in the context of climate change (Sebesvari et al., 2019; Janzen et al., 2021; Walz et al., 2021; UNDRR, 2023).

Against this background, in this session we aim to elaborate on existing gaps, opportunities and needs related to data, assessment and monitoring to better inform nature-based prevention and adaptation monitoring. The outcomes of this session will provide recommendations for relevant science-policy agendas, to ensure that relevant, reliable, risk-informed and comprehensive data and information products are available and assessment methods are tailored to current and future monitoring and reporting demands. To achieve this, the session will be facilitated along the following three themes with a focus on assessing the status quo to envision future needs and opportunities for the post 2030 Agenda.



Theme 1: Prevention will focus on elaborating the gaps and needs of data and assessment methods to account for the contribution of ecosystem-based approaches for DRR and CCA. We want to discuss ways forward to address challenges and use opportunities to enhance data availability and tailor targeted information products, especially for prevention and adaptation planning in the context of key global frameworks (e.g. DRR strategies, NAPs, NBSAPs, etc) as well as informing ongoing policy discussions, e.g. under the UNFCCC Global Goal on Adaptation.

Guiding questions

- What are the gaps in data and assessments to account for the contribution of ecosystem-based approaches for DRR and CCA?
- How do we address these gaps? What are the challenges and opportunities to enhance data availability?

Theme 2: Loss and damage will focus on elaborating the gaps and needs of data and assessment methods to account for climate and disaster-related loss and damage of ecosystems and ecosystem services especially in the context of slow onset events and non-economic loss and damage (NELD). Further, we want to elaborate on ways forward to address challenges and use opportunities to enhance data availability and tailor targeted information products, specifically for informing early warning, recovery and build back better strategies, etc., besides ongoing policy discussions under the UNFCCC Loss and Damage agenda.

Guiding questions

- What are the gaps in data and assessments to account for environmental aspects of loss and damage, especially in the context of slow-onset events and NELDs?
- How do we address these gaps? What are the challenges and opportunities to enhance data availability?

Theme 3: Data governance and monitoring will focus on harmonizing monitoring and reporting of environment-related prevention and loss and damage across the 2030 Agendas and beyond.

Guiding questions

- What is a good data governance approach to enable harmonized monitoring and reporting across the 2030-Agenda?
- How can the gaps and technological challenges be better addressed to monitor and track ecosystem losses and their contribution to DRR and CCA?
- What is needed to ensure that environment-related prevention and loss and damage is considered in the post 2030 Agenda?

Expected outputs and outcomes of this session:

In response to the guiding questions of the 3 themes of this session, the expected outputs are:

- Mapping of current efforts, gaps, needs, and opportunities regarding data and information sources, available assessment tools and current monitoring and reporting frameworks with a focus on prevention, environmental and non-economic loss and damage and monitoring and reporting for the 2030 Agenda and beyond
- Consolidated inputs with regard to data, assessment and monitoring for the PEDRR science-policy agenda

Further outcomes planned based on the results of this session are:

- Draft roadmap on opportunities for linking ecosystem-related NELDs with the loss and damage discussion under the UNFCCC, supporting the reporting under the Sendai Framework and addressing targets of the Global Biodiversity Framework.
- Action plan to work on identified priority knowledge gaps and challenges.

References

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Thematic session 2: planning and implementation

Prepared by: Kristin Meyer, Animesh Kumar, Nathalie Doswald

Scope of discussion as related to the workshop objectives

In recent years, the role of nature-based solutions (NbS) has received increasing recognition across international policy agendas as one pathway to tackling the triple planetary crisis and building resilience. The Sharm-el-Sheik Implementation Plan adopted at UNFCCC COP27, targets 8 and 11 of the Kunming Montreal Global Biodiversity Framework, as well as the Political Declaration of the High-level Meeting on the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 all mention NBS demonstrating their cross-cutting nature in providing climate change, biodiversity and disaster risk reduction (DRR) benefits.

While the UN Environment Assembly Resolution on “Nature-based solutions for supporting sustainable development” provides an agreed definition, it also points to some of the remaining uncertainties and challenges. These challenges relate in particular to translating the concept into regional, national and local planning processes and implementation of interventions.

Against these developments at the international level, in this session, we will explore key pathways and approaches that help translate global ambitions into impact at regional, national and local levels. It will explore the barriers and bottlenecks

as well as opportunities to coherent and risk-informed planning across interlinked policy domains as a contribution to the policy-science discourse on improving comprehensive risk governance. In this session, we will further reflect on implementation challenges, including how to achieve impact at scale.

In particular the session will focus on:

- Better understanding key synergies that implementation of NbS could have for the Rio Conventions and other international agreements. And how NbS could be mainstreamed within NBSAPs, NAPs and NDCs
- Better understanding what prevents key state and non-state actors from implementing nature-based solutions and what policy, planning and governance approaches, tools and/or mechanisms already exist to overcome identified barriers and bottlenecks;
- Examining pathways on how to design interventions at scale supported by appropriate planning and comprehensive risk governance approaches; and learning from current experiences in scaling up NbS implementation;
- Forecasting on climate change impacts on ecosystems and biodiversity, and future role of NbS approaches for enabling climate adaptation, disaster risk reduction and resilience.
- Understanding how NbS implementation can address climate induced loss and damage.

Expected outcomes

- Expand existing understanding of NbSs for effective implementation, and identify and addressing challenges and barriers to implementation;
- Share experiences and develop pathways or 'models' towards planning and implementation at scale and with ecosystem-based approaches as a key component to be considered;
- Define new developments, future trends and key opportunities in the coming years;
- Identify entry points for improved comprehensive risk governance, including through the implementation of national adaptation plans, DRR strategies, planning for resilient infrastructure, the updating of national biodiversity strategies and action plans, etc.;
- Develop a set of key messages for Rio COPs in 2024 on nature-based solutions for coherence and design at scale.
- Provide inputs to the PEDRR Network action plan 2040;

Thematic Session 3: Financing NbS for disaster risk reduction and climate change adaptation: Mind the gap!

Prepared by Karen Sudmeier, Marisol Estrella, and Jaroslav Mysiak

Background

New public and private financing schemes for Nature based Solutions (NbS) are emerging rapidly. These are driven by both regulatory compliance, global pledges for restoration and market forces, which put forward nature as a potentially profitable and tradeable market asset. The aim of this session is to define main research gaps and action points for the PEDRR Network action plan 2040; and to develop recommendations to UNDRR and Rio Conventions on alignment of NbS for DRR finance mechanisms, priority research topics and future scenarios of NbS for DRR investment priorities.

We may consider three major types of nature finance sources:

- a. Public domestic financing (e.g. national and local budgets, government bonds, debt-for-nature schemes)
- b. Public international financing (e.g. overseas development assistance)
- c. Private financing (e.g. innovative financing such as voluntary or mandatory carbon markets, philanthropic funding, nature-based insurance schemes, impact investments)

Public and private finance in terrestrial and marine NbS: US\$154 billion (2022 US\$)

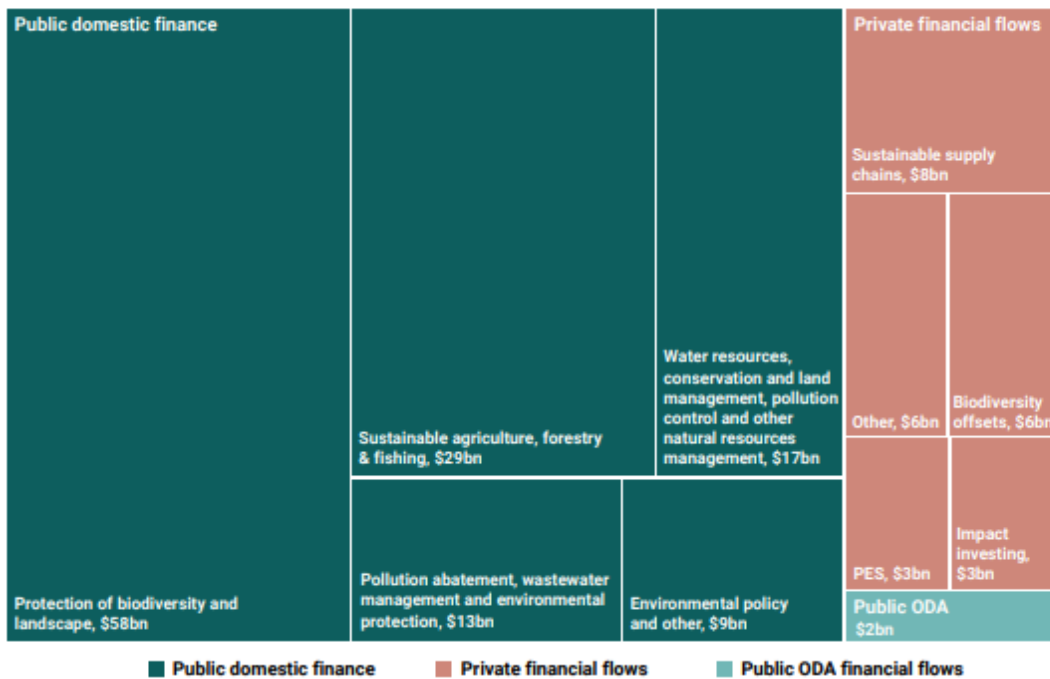


Figure 1. UNEP, 2022 - NB: how much is earmarked for disaster risk reduction ?

Figure 1 illustrates that approximately USD 154 billion/year currently flows into NbS (using 2020 as base year), with public funds making up 85-86 per cent, private finance 13-14 per cent and ODA around 1 per cent. According to UNEP (2022), **this amount will need to triple by 2030 if the world is to meet its climate change, biodiversity and land degradation targets.**

There have been great hopes placed on the voluntary carbon market as a viable source of funding for NbS. However, the voluntary carbon market is still nascent and volatile, most likely due to a lack of confidence in providers of carbon off-sets, rooted in a lack of standardization of carbon credits and monitoring (The Guardian, 24 Aug, 2023). Financing NbS for disaster risk reduction (DRR) represents an even smaller subset of funding, with no current estimates on the funding gap.

Nevertheless, sectors reliant on natural assets such as agriculture, tourism, and infrastructure operators are particularly vulnerable to disaster risks, which can damage physical assets, disrupt supply chains and essential service provision, and affect employees, leading to a disruption of core business activities. Indirect risks for companies include new regulations, technology, market dynamics, as well as reputational risks if they fail to adequately address climate threats (UNEP, 2023). Hence, the private sector plays a pivotal role in advancing DRR through investments in ecosystems and biodiversity, driven by two primary reasons: (1) aiding businesses in risk mitigation and (2) enabling businesses to seize emerging opportunities (UNDRR, 2021).

Nature finance has been mentioned in all of the recent COP decisions of the major Rio conventions and the political declaration of the mid-term review of the Sendai Framework for Disaster Risk Reduction 2015-2030, each highlight more specific recommendations related to nature finance:

1. Global Biodiversity Framework, Convention on Biological Diversity, COP 15, target 15: Businesses assess and disclose biodiversity dependencies, impacts and risks, and reduce negative impacts on biodiversity.

2. Paris Agreement, United Nations Framework Convention for Climate Change: Article 2.1c) relates to all financial flows; public and private, domestic and international, green and brown, and all Parties are obliged to promote finance flows to be consistent with decarbonization and resilience.

3. United Nations Convention on Combating Desertification (UNCCD) CoP 15, Decision 20, paragraph 5: relates to financial inclusion and social protection of ecological restoration to support land users, especially women, youth, indigenous people, and other vulnerable groups, to reduce the additional burden caused by the added cost of land degradation driven by climate change and human induced activities and processes;

4. Political declaration of the high-level meeting on the midterm review of the Sendai Framework for Disaster Risk Reduction 2015–2030 Sendai Framework for Disaster Risk Reduction, paragraph 33:

(e) Engaging with the private sector to scale up investment in disaster risk reduction and collaborating with financial institutions, credit rating agencies;

(i) Promoting the development of innovative instruments and tools to finance disaster risk reduction, such as resilience bonds, particularly in developing countries, to build resilience against current and future shocks and hazards;

(j) Pursuing the reform of international financial institutions to further consider integrating disaster risk reduction into their work, including through lending, debt support and sustainable development and adaptation financing streams and grants;

A summary of main gaps and challenges in upscaling investments in NbS include:

1. **Insufficient volume of capital and a limited share of private finance** allocated to NbS-related assets and activities, particularly those focused on DRR.
2. **Underdeveloped case for investing in NbS** means that the potential return for investors is not compelling enough. NbS investments often lack sufficient predictable, long-term revenue streams, deterring banks and investors as compared to low-carbon transport, renewable energy investment and energy efficiency.
3. **Technical support, economic and regulatory incentives do not effectively** support viable projects and businesses that incorporate NbS into their business models. This also includes an insufficient understanding of valuation practices for marketing NbS to attract investments.
4. **Policies that support de-risking are lacking.** Scaling up public funding in the form of concessional finance to partially de-risk novel forms of NbS that lead to a net-zero, nature-positive impact is needed as an initial 'stepping stone' to build a track record of transactions;
5. **Lack of attention to ensuring social benefits of NbS investments.** This includes providing social protection, land rights and decent working conditions and the participation of local and indigenous communities, including women and other marginalised and vulnerable groups.
6. **The absence of robust methodologies and agreed-upon standards to build confidence in NbS investments and to protect biodiversity.** To ensure the robustness of biodiversity assessment and carbon-offset methodologies, they should be mandated by legislation and incorporated as key performance indicators. The enforcement of sanctions, fines, and penalties against environmental harm is essential.
7. **Lack of alignment among international frameworks and financing initiatives related to NbS financing** (e.g. the Bonn Initiative), so that NbS investments, monitoring, reporting and protection efforts reach commonly shared goals.
(Sources: Swain et al., 2023 and UNEP, 2022)
8. **Lack of understanding of future scenarios on the effectiveness of NbS for mitigation and protection:** what are the future NbS investment risks and benefits ?

Key session outcomes:

1. Define main research gaps and action points for the PEDRR Network action plan 2040;
2. Develop recommendations for UNDRR and Rio Conventions on alignment of NbS for DRR finance mechanisms, priority research topics and future scenarios of NbS for DRR investment priorities.
3. Forward proposals for innovative financing to the [Naturance project](#) for consideration.

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Thematic session 4: Bringing it all together: land restoration, disaster risk reduction, climate change and biodiversity

Scope of discussion

Land is the base where humanity has found their home, find most of their food and undertake most of their activities. Within an anthropocentric worldview, land is where disasters unfold for humanity even if it has origins in the sea or atmosphere.

Land is also a major operational link between biodiversity and climate change as it is home to the majority of the biodiversity and holds significant carbon storage. Land degradation will undermine ecosystems which in turn impacts biodiversity. Climate change can exacerbate land degradation, and land degradation, such as deforestation, and contribute to global warming. Land degradation may trigger disasters, such as landslides while at the same time disasters could also adversely impact on ecosystems and biodiversity.

Within the disaster risk reduction and climate crisis management domains, there is a clear acceptance of Nature Based Solutions as a viable and even preferred approach to dealing with disasters and the climate crisis. Independent of this, there is increased emphasis on land and ecosystem restoration coming from constituencies of the UN Convention to Combat Desertification (UNCCD) and the UN Convention on Biological Diversity (CBD).

Many countries have ongoing land restoration programs. In addition, many countries have also committed to land restoration under different international processes, including: the Bonn Challenge; AFR100; Great Green Wall initiative; Middle East Green Initiative; UNCCD's Land Degradation Neutrality; UN Convention on Biological Diversity's National Biodiversity Strategy and Action Plan and the Kunming-Montréal Global Biodiversity Framework; UN Decade of Ecosystem Restoration; as well as the Nationally Determined Contributions of the UN Framework Convention on Climate Change (UNFCCC). It is not always clear if the commitments are independent of each other or inclusive; therefore, the total global restoration commitments are currently estimated as a range. The situation as of 2021 is presented in Table 1, also (reproduced from Table 22 from the PBL Policy Brief "Goals and Commitments for the Restoration Decade".)

Table 2.2

Total range of estimates

Name	Description	Assumption	Total (ha)
High estimate	All targets added up and combined per country	Assumes no overlap: each target is additional to the others	1,002,118,074
Middle estimate	Only the highest target (between sources) per restoration measure category, per country	Assumes some overlap: that other sources with a smaller target for the same restoration measure are included in the highest estimate of another source	946,844,114
Low estimate	Only the single highest commitment between all sources, per country, regardless of measure	Assumes high overlap: all other smaller commitments from other sources are included	765,472,331

The newly adopted Kunming-Montreal Global Biodiversity Framework (GBF) made a firm commitment to restore degraded ecosystems, under Target 2: Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.

Thematic Session 4 will explore how we can leverage the global commitments for land restoration under various processes, including the GBF, to achieve disaster risk reduction and climate resilience.

Key Challenges

1. Ecosystem restoration initiatives are being undertaken around the world with a view to improve forest cover, increase biodiversity, achieve food security and enhance livelihood options. However, disaster risk reduction is not yet a part of the stated objectives of any large scale land restoration initiative
2. While land restoration is being promoted from multiple angles, they are not coordinated. In fact, information is not even available on whether there is sufficient land identified to meet the restoration plans/commitments under various initiatives
3. Well intentioned, but sectoral, approaches to land restoration are beginning to put pressure on land availability, creating potential conflicts between ecologists and farmers and putting unnecessary pressure on land resources.

Key Session Objectives

1. To provide clear understanding of the state of play on land restoration, including UNCCD's Land Degradation Neutrality, the Bonn Challenge, Great Green Wall, AFR100 and Middle East Green Initiative, among others cited above
2. To discuss how to leverage on the commitments, initiatives and resources for land restoration to achieve disaster risk reduction?

Expected outcomes

- A clear understanding of entry points and opportunities for linking land restoration and disaster risk reduction efforts
- An action plan to engage various global initiatives and processes for land restoration to mainstream DRR and maximise returns on investment