UNDP REGIONAL BUREAU FOR ASIA AND THE PACIFIC

NATURE-BASED SOLUTIONS FINANCE FOR NDCs

Acknowledgements

The report was authored in May 2021 by Danae Maniatis with inputs from Celina Yong, Rohini Kohli, Joan Manda, Kimberly Todd, Yu Chongguang, Krib Sitathani and Laura Hammett.

Photo (front and back cover): USGS United States Geological Services/Unsplash.

United Nations Development Programme (2022). *Nature-based Solutions finance for NDCs*. New York, USA: UNDP.

UNDP is the leading United Nations organization fighting to end the injustice of poverty, inequality, and climate change. Working with our broad network of experts and partners in 170 countries, we help nations to build integrated, lasting solutions for people and planet.

Learn more at undp.org or follow at @UNDP.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

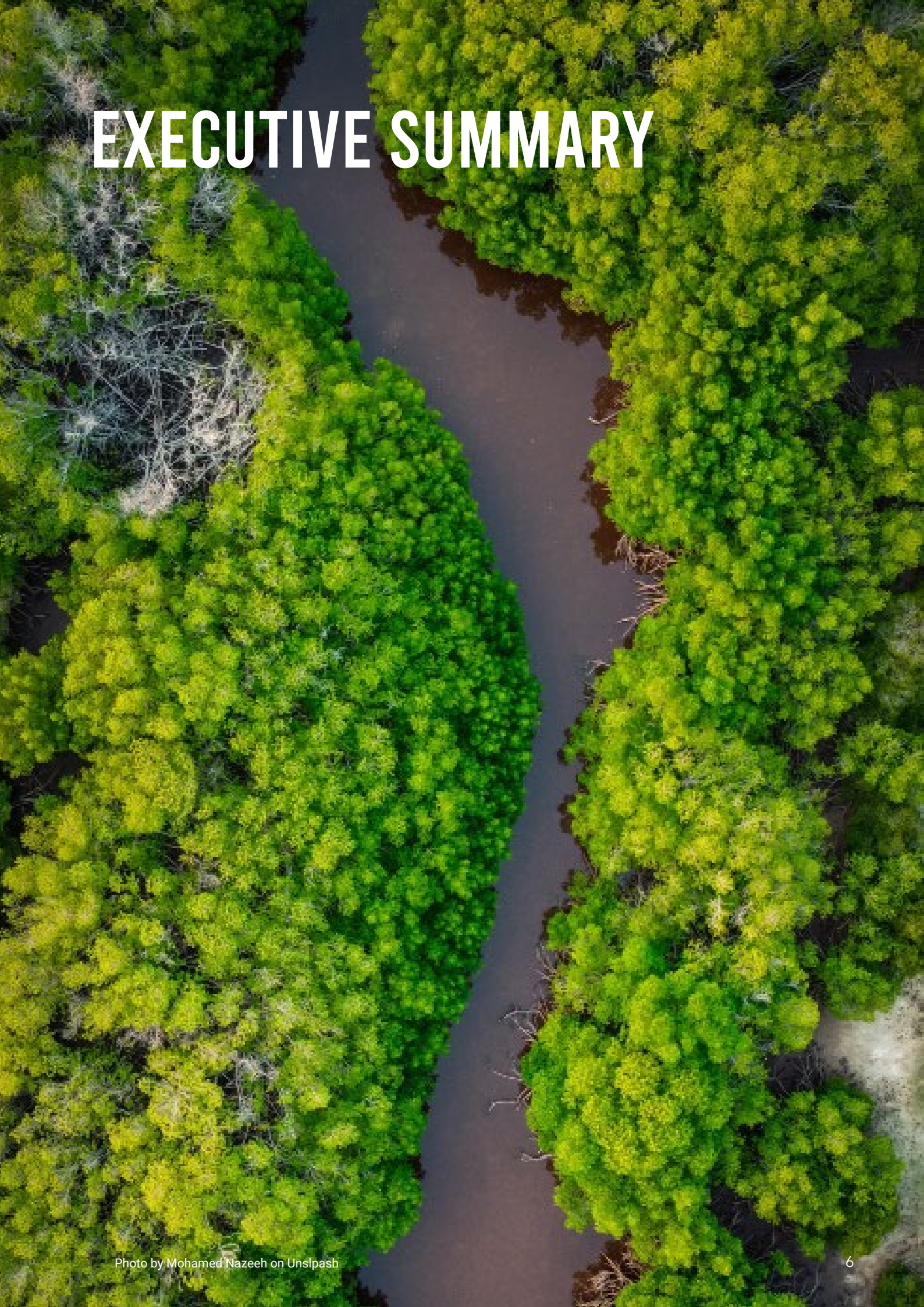


Photo by Mohamed Nazeeh on Unslpash

REGIONAL CONTEXT AND OPPORTUNITY

Climate change and biodiversity loss are two of the biggest global challenges this century and arguably the greatest regional challenge in the Asia-Pacific region. Moreover, the COVID-19 pandemic highlights the critical connection between human health and the health of nature. The pandemic continues to result in significant health, economic and social costs for small island developing states (SIDS), least developed countries (LDCs), and middle-income countries across urban and rural settings from the large megacities of Dhaka and Bangkok to the smallest island atolls in the Pacific.

Nature-based solutions (NbSs) are critical to climate action and one of the most requested areas of support to enhance nationally determined contributions (NDCs). Importantly, NbSs in NDCs can support climate mitigation and adaptation, as well as slow biodiversity loss, in a cost-effective manner. These intertwined crises require an integrated approach and unprecedented cooperation to achieve a nature-positive economic recovery and an equitable carbon-neutral and sustainable future. NbSs can play a critical role is this approach.

At the same time, investment in nature-based solutions in Asia-Pacific presents a hugely significant opportunity and untapped potential for regional and national climate action that straddles forests, ecosystems, multisectoral applications, rural and urban settings and offers immense benefits for community income and livelihoods and for slowing biodiversity loss. Investment in NbSs also presents a key opportunity for greater inclusion and empowerment of indigenous people, women and men engaged in natural resource-based livelihoods, and youth.

In 2020, the World Economic Forum (WEF) estimated that half of global gross domestic product (GDP) is at risk from the loss of nature. Defined as "actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (IUCN, 2016), NbSs implemented in forests, grasslands and wetlands are a prominent feature in the nationally determined contribution of every country in the Asia-Pacific region (UNDP, 2021).

GAPS AND BARRIERS TO FINANCE AT SCALE

There is a significant funding gap in investments for nature. To preserves and restore ecosystems alone, the required investment globally is estimated at US$300–400 billion per year, whereas only $52 billion is invested annually in such projects (WWF, 2020). How we support the transition and investment into much needed NBSs will play a critical role in the livelihoods of people in the Asia- Pacific region for decades to come, as well as determine how countries will meet the commitments outlined in their nationally determined contributions.

Moreover, there are the following four barriers to scaling up finance for nature-based solutions in the domain of information, institutions, knowledge and purely financial systems.

1 *Information:* There is scant publicly available information on monitoring (including financial monitoring) and impact to transparently determine the extent to which these pledges have been successfully implemented or on key details such as type of NBSs, species selected (e.g., native or non-native), the previous use of the land, or the involvement of local communities.

2 *Political and institutional:* Broader barriers to climate action also plague the adoption of NBSs, including lack of supportive policy and legal frameworks; limited political will and long-term commitment; a lack of urgency among policy makers; lack of public awareness and support; risk aversion and resistance to change; organizational siloes (and silo mentalities); misalignment between short-term plans and long-term goals; and property ownership complexities.

3 *Technical:* These include lack of design standards and guidelines for maintenance and monitoring; lack of skilled knowledge brokers and training programmes; performance uncertainties (e.g., lack of information regarding the benefits of NBSs); and space constraints.

4 *Purely financial:* These include lack of available financial resources and financial incentives as well as poorly understood financial instruments that could be adapted and deployed.

Photo by Ives Ives on Unslpash

FINANCIAL OPTIONS AVAILABLE

This report offers reference material and inspiration for UNDP and interested stakeholders to further support the design and implementation of NBSs in NDCs by enabling countries and local stakeholders to access various financing streams. It presents the importance of financing NBSs for NDCs through public, private and philanthropic foundations. The report also provides a non-exhaustive regional mapping of existing examples of financing NBSs at scale across climate change mitigation (e.g., REDD+), climate change adaptation (CCA), biodiversity, and disaster risk reduction (DRR) in Asia-Pacific. UNDP's work in the nature, climate and energy portfolio has employed several of these options. Five case studies illustrate lessons for Asia-Pacific in financing NbSs for NDCs:

1 *Public-Private Partnership Approach:* the example of palm oil in Indonesia and the Terpercaya Initiative spearheaded by the European Forest Institute's EU REDD Facility and Inovasi Buni (Inobu) to measure sustainability in the sector. The initiative aims to generate credible information and analysis, build understanding and trust needed to promote sustainability, trade and cooperation, and support and inform national policies such as the NDC.

2 *Debt-for-Nature Swap:* the example of the Seychelles, which leverages the country's assets as part of the Blue Economy sector to provide additional sources of conservation funding to protect its oceans.

3 *Sustainable Tourism in Protected Natural Areas:* the example of Lao PDR through its Public-Private Partnership Green Discovery project involving over 80 members of a village in the Dong Hua Sao National Protected Area in Champasak Province.

4 *Sustainable Cities:* the example of Pacific Ocean Cities, Samoa, which is designing and conserving blue and green urban spaces, weaving them into the fabric of urban settings where seascapes and urban landscapes converge. This project utilizes multi-stakeholder partnerships aligned with customary practice.

5 *Agriculture, Forestry and Other Land Use sector:* the example of REDD+ Results-Based Payments in Indonesia in recognition of the country's commitment to introducing and implementing key policies and programmes in the sector leading to REDD+ emissions reductions.

RECOMMENDATIONS AND THE WAY FORWARD

Recommendations for UNDP, individual UNDP country offices, and other partners, include eight action tracks and a stepwise process to capitalize on opportunities to finance nature-based solutions in nationally determined contributions in the Asia-Pacific region.

The **eight recommended action tracks** include:

TRACK 1 Integrate NBSs into climate and development policy and budgeting frameworks.

TRACK 2 Foster the development of intersectoral collaboration for scaling up NBSs.

TRACK 3 Strengthen and share the evidence base for NBSs in Asia-Pacific.

TRACK 4 Convene and mobilize inclusive multi-stakeholder coalitions and platforms to bring investors and NBS practitioners together.

TRACK 5 Mobilize domestic public finance.

TRACK 6 Catalyse international public finance.

TRACK 7 Encourage domestic and international private sector to invest.

TRACK 8 Promote transparency and information sharing.

In operationalizing these action tracks, it is critical to make NBSs sustainable by approaching them in an interdisciplinary manner and across stakeholders. It is imperative to recall that as nature-based solution, an action must sustainably provide one or more benefits to people while causing no loss of (and preferably, a gain in) biodiversity or ecological integrity compared to the pre-intervention state.

The following six steps address the recommended process for advancement on each of the action tracks.

STEP 1	Undertake mapping of current projects on NbSs in NDCs in Asia-Pacific countries by UNDP and others.
STEP 2	Undertake mapping of available country-specific financial resources for NbSs in each country at various levels (e.g., from the municipal level to the national level).
STEP 3	Combine the above with information on country targets in NDCs (first NDC and updated NDC).
STEP 4	Use this information as to identify major gaps for NbS impact substantively and leverage different finance types (e.g., public, private, mixed, private foundations).
STEP 5	Develop a project pipeline and complementary strategy to plug the gaps identified in step 4, including the design of transparent financial and impact measurement and monitoring of NbS implementation.
STEP 6	Set up networks and/or platforms in the Asia-Pacific region for South-South exchanges to facilitate learning between countries on NbS implementation and finance opportunities, including private sector, public sector, civil society organizations, and foundations.

The stepwise process represents a service line that can be integrated into the context of UNDP's four offers (and *vice versa*) within the domains of (i) climate strategy planning, (ii) institutional strengthening, (iii) positioning of different financing instruments (including the work on integrated national financing frameworks (INFF) and (iv) cross-cutting issues.

In sum, all stakeholders are encouraged to do the following.

1	Continue to advocate for ambitious climate action and integrate NbSs into COVID-19 green recovery processes.
2	Focus on support to better understand the priorities in NDCs and developing implementation strategies by making links to the ongoing UNDP portfolio across all areas, from nature and energy to inclusive growth and disaster risk reduction.
3	Identify opportunities for more scaled-up support for the implementation of NDCs.

ACRONYMS

A&R	Adaptation & Resilience
AC	Ayala Corporation
AFOLU	Agriculture, Forestry and Other Land Use sector of the Intergovernmental Panel on Climate Change
ART 'TREES'	Architecture for REDD+ Transactions, The REDD+ Environmental Excellence Standard
ASEAN	Association of Southeast Asian Nations
AUA	Apia Urban Area
BAPPENAS	*Kementerian Perencanaan Pembangunan Nasional Republik Indonesia* [Ministry of National Development Planning – Indonesia]
BIOFIN	Biodiversity Finance Initiative
CBI	Climate Bonds Initiative
CBD	Convention on Biological Diversity
CCA	Climate Change Adaptation
CIF	Climate Investment Fund
CO_2e / CO_2eq	Carbon dioxide equivalent
COP	Conference of the Parties to the United Nations Framework Convention on Climate Change
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
COVID-19	Coronavirus Disease 2019
DRR	Disaster Risk Reduction
EbA	Ecosystem-based Adaptation
EEZ	Exclusive Economic Zone

EFI	European Forest Institute
EFT	Ecological Fiscal Transfers
EU	European Union
FAO	Food and Agriculture Organization
FMU	Forest Management Unit
FOLU	Forestry and Other Land Use
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
Gg	Gigagram
KHR	Cambodian Riel
ICBC	Industrial and Commercial Bank of China
ICT	Information and Communications Technology
IIED	International Institute for Environment and Development
IKI	*Internationale Klimaschutzinitiative* [International Climate Initiative]
INDCs	Intended Nationally Determined Contributions
INFF	Integrated National Financing Frameworks
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ISPO	Indonesian Sustainable Palm Oil
IUCN	International Union for Conservation of Nature
KLM	*Koninklijke Luchtvaartmaatschappij* [Royal Air Transportation]
LDCs	Least Developed Countries
LEAF	Lowering Emissions by Accelerating Forest finance Coalition

LUF	Land Use and Forestry
LULUCF	Land Use, Land Use Change and Forestry
Mg	Megagram
MPA	Marine Protected Area
Mt	Megaton
MRV	Measurement, Reporting and Verification
NbS	Nature-based Solutions
NcS	Natural-climate Solutions
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organization
NRS	National REDD+ Strategy
ODI	Overseas Development Institute
Pg	Petagram
PDR	People's Democratic Republic
PNG	Papua New Guinea
PPPs	Public-Private Partnerships
PT	*Perseroan Terbatas* [Limited Liability Company]
RbP	Results-based Payment
REDD+	Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
RFP	Request For Proposals
RSPO	Roundtable on Sustainable Palm Oil
SDG	Sustainable Development Goal
SeyCCAT	Seychelles Conservation and Climate Adaptation Trust
SFM	Sustainable Forest Management

SIDS	Small Island Developing States
SMA	Special Management Area
tCO_2e	Tonnes of carbon dioxide equivalent
TNC	The Nature Conservancy
UK	United Kingdom
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VNR	Voluntary National Review
WAVES	Wealth Accounting and the Valuation of Ecosystem Services
WEF	World Economic Forum
WWF	World Wide Fund for Nature

1 SETTING THE SCENE

Photo by Muhammad Hafizh on Unslpash

1.1 WHAT ARE NATURE-BASED SOLUTIONS AND WHY INVEST IN THEM?

Nature-based solutions (NbSs) are critical to climate action and one of the most requested areas of support to enhance nationally determined contributions (NDCs). As defined by the International Union for Conservation of Nature (IUCN), NbSs are "actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges (e.g., climate change, food and water security or natural disasters) effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (IUCN, 2016). NbSs are actions that work with, and enhance, nature to help address societal challenges. The concept is grounded in the knowledge that healthy, natural and managed ecosystems produce a diverse range of services on which human well-being depends (NbS Initiative) (Figure 1).

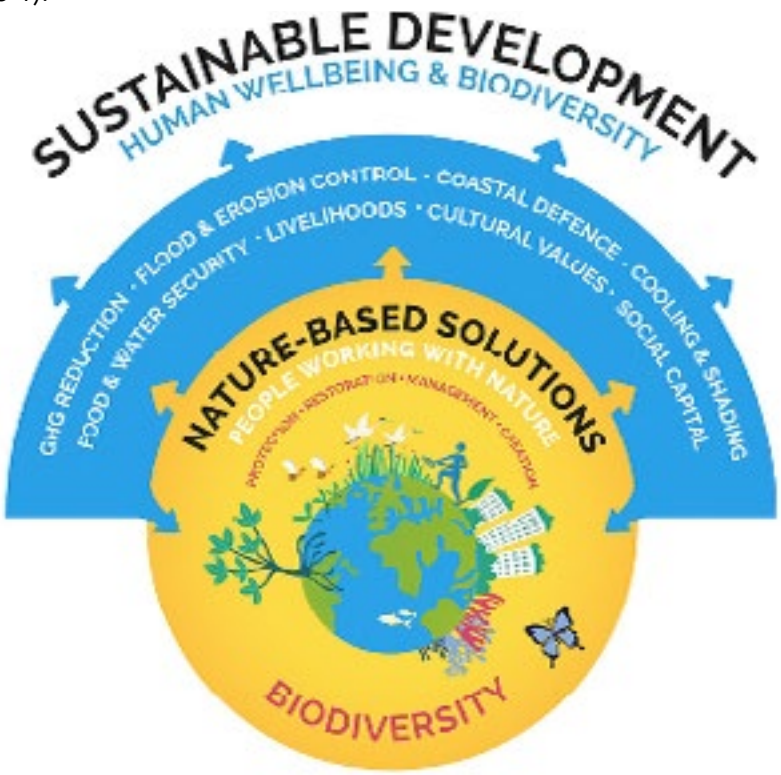


Figure 1: Conceptual diagram of nature-based solutions. NbSs involve the protection, restoration or management of natural and semi-natural ecosystems; the sustainable management of aquatic systems and working lands such as croplands or timberlands; or the creation of novel ecosystems in and around cities or across the wider landscape. People and nature (yellow circle) co-produce a variety of outcomes (ecosystem services or nature's contributions to people, blue band) that benefit society. These benefits can, in turn, support ecosystem health (blue arrows). While the goal of NbSs is to support sustainable development, including human health and well-being, the ecosystems that provide NbSs must be healthy, functional and biodiverse if such benefits are to be provided in the long term. Hence, to qualify as a nature-based solution, an action must sustainably provide one or more benefits for people (such as reducing flood risk or storing carbon) while causing no loss of (and preferably, a gain in) biodiversity or ecological integrity compared to the pre-intervention state. Although actions with only one societal benefit could be classified as an NbS, an intervention in nature usually has multiple interlinked effects on the climate and social-ecological systems. By identifying all these effects, interventions can be designed to build synergies and be resilient to future socioeconomic and climate change (Source for figure and figure description: Seddon and others, 2021).

Importantly, nature-based solutions in nationally determined contributions could provide a cost-effective and effective strategy to address climate change and slow biodiversity loss, two of the biggest global challenges of this century (Seddon and others, 2019; Griscom and others, 2017). Nature provides the foundation for governments to achieve their development goals. Indeed, half of the 169 indicators of the Sustainable Development Goals (SDGs) are dependent upon – or indivisible from – health, biodiversity and ecosystems. The World Economic Forum (WEF) estimates that the loss of biodiversity poses critical economic risks to both national and global economies with at least half of the global gross domestic product (GDP) at risk from the loss of nature (WEF, 2020). Human-caused declines in ocean health are projected to cost the global economy $428 billion per year by 2050 (Abram and others, 2019) and the estimated economic cost of land degradation is more than 10 per cent of annual global gross product (IPBES, 2018).

Furthermore, the COVID-19 pandemic highlights the crucial connection between human health and the health of nature. Thus, the root causes of the pandemic resemble the root causes of the biodiversity and climate change crises. These intertwined crises require an integrated approach and unprecedented cooperation to achieve a nature-positive economic recovery and an equitable carbon-neutral and sustainable future. It is vital that nature-based solutions play an integral part in our response to these significant challenges.

NbSs are implemented in forests, grasslands and wetlands, and therefore captured within the Agriculture, Forestry and Other Land Use (AFOLU) sector of the Intergovernmental Panel on Climate Change (IPCC). Approximately 83 per cent of the first NDCs reference land use, land use change and forestry (LULUCF) – second only to the energy sector – but only about 20 per cent of NDCs include quantitative mitigation or adaptation targets (such as hectares reforested) and an even smaller proportion put forward greenhouse gas-based targets for the sector (FAO, 2020). NbSs go beyond climate change mitigation and deliver strong results for adaptation and resilience.

Natural climate solutions (NCSs) are essentially interchangeable with terms like 'NbSs' in the context of the Agriculture, Forestry and Other Land Use sector (AFOLU), to the extent that they refer to the mitigation efforts associated with these sectors. Natural climate solutions are activities that increase climate change mitigation based in nature and may include the adaptation benefits of these activities. More specifically, NCSs can be considered as an ensemble of improved land management, protection, and restoration pathways that generate climate mitigation outcomes. NCSs reduce atmospheric greenhouse gas concentrations through avoiding emissions and enhancing carbon sinks.

A recent study (Griscom and others, 2020) found that cost effective[1] tropical NCSs can offer significant global climate mitigation in the decades 2030–2050: 6.56 Pg CO_2e yr^{-1} (equal to approximately 1.4 million wind turbines running for a year) at less than $100 per Mg CO_2e. The authors find that in half of the tropical countries assessed, cost-effective NCSs could

[1] 'Cost-effective potential' is the amount of a country's available climate mitigation pathways that are considered cost-effective ($100/tonne CO_2e in 2030) based on globally-derived marginal abatement costs.

mitigate over half of national emissions, and that in more than a quarter of those countries, cost-effective NCS potential is greater than national emissions.

Although NCSs and NbSs have much to offer, the NbS concept often remains a general metaphor lacking clear guidelines to enable either effective implementation or assessment of the efficiency, effectiveness and sustainability of interventions. Furthermore, the NbS concept fails to offer guidance on either how to reflect the interventions in NDCs or how to finance them.

The objective of this report is to provide a regional mapping of existing examples of financing NbSs at scale, identify gaps and opportunities, and present recommendations on scaling up the financing of NbSs under NDCs. The report spans the areas of climate change mitigation (e.g., REDD+), climate change adaptation (CCA), biodiversity and disaster risk reduction (DRR). It complements existing documents and reports on NDCs and NbSs (for example Beasly and others, 2019; Seddon and others, 2019; Seddon and others, 2021; UNDP & WRI, 2019; UNDP, 2019; and UNDP, 2021) through a finance lens and presents practical examples from the Asia-Pacific region.

1.2 HOW CAN NATURE-BASED SOLUTIONS BE INTEGRATED INTO NDCs?

In developing the Intended NDCs (INDCs) and the first NDCs, all parties of the United Nations Framework Convention on Climate Change (UNFCCC) faced challenges related to decisions on how to include the land-use sector in their mitigation targets. Before the guidance that emerged during the 24th Conference of the Parties (COP) of the UNFCCC in Katowice in 2018, Parties had to make assumptions related to accounting elements such as reference levels, the types of activities included, definitions used, and which monitoring methodologies they applied when determining their first NDC.

At the time of the preparation of the INDCs, it was not yet apparent if there would be AFOLU accounting rules and/or guidance, and what these would look like. This uncertainty around accounting implications may have impacted the level of commitment by parties in the sector. Although there is now guidance under the Katowice Climate Package that can guide the inclusion of NbSs, their integration will need to include accounting and measurement; monitoring, reporting and verification (MRV); CCA; biodiversity; and DRR.

Key aspects to consider regarding NbSs in national AFOLU accounting systems include developing technical methods to collect data and their implementation; quality of data collected; consistency with the country's latest national greenhouse gas inventory; and working across sectors (specifically forests and agriculture). **It is therefore crucial that NbSs designed to be integrated into NDCs build upon systems, methods and lessons learned during ongoing processes such as climate change mitigation (e.g., REDD+), CCA, biodiversity and DRR.**

It should also be noted that NbSs sit at the intersection between climate change mitigation and adaptation, and therefore provide a necessary bridge across efforts to mitigate climate change. **It is critical to simultaneously adapt to the impacts of climate change that are already occurring.** Examples of nature-based solutions that straddle climate change mitigation and adaptation in NDCs are resilient infrastructure for risk reduction in coastal zones, mangrove restoration for flood protection, ecosystem-based adaptation, flood and drought management, and green cities.

1.2.1 NBSs IN NDCS IN THE ASIA-PACIFIC REGION

With a focus on countries that receive support from UNDP, Table 1 provides a snapshot of some mitigation and adaptation priorities as well as the conditionality of finance and the cost-effective natural climate solution potential reflected in NDCs for the Asia-Pacific region. The table provides five different elements for consideration. First, the target type provides information regarding which pathway the country chooses to implement its NDC, such as a business-as-usual pathway, policies and actions, or absolute targets. Second, the mitigation focus areas provide information on the actions that countries consider taking in terms of land use and forestry (LUF) and REDD+. Third, the adaptation priority sectors provide information on the actions that countries consider taking on biodiversity, ecosystems and forestry. Fourth, conditionality for adaptation and mitigation finance provides insights on the type of finance that countries seek to commit and/or leverage to implement their NDCs. Finally, the 'cost-effective' NCS column provides quantitative information on the country's cost-effective mitigation potential. The first four elements are extracted from the NDC explorer developed by the German Development Institute as well as the Climate Watch NDC Tracker. The cost-effective NcS potential is extracted from the Nature4Climate World Atlas.

Table 1 therefore provides an overview of not only how certain aspects of NbSs are reflected in NDCs, but where future opportunities can be found to provide further support by UNDP in terms of holistic NbS programming, leveraging finance and implementation in the framework of NDCs.

Table 1: Overview of NbSs in NDCs in UNDP's Asia-Pacific Portfolio.

Country	NDC Status	GHG target	Mitigation – accounting for emissions and removals from the land sector: treatment & coverage of land sector	Adaptation – economy-wide commitments to ecosystem and biodiversity	Explicit mention of NbSs in NDC	Conditionality	Cost-effective NcS (Million tonnes CO_2e/yr)
Afghanistan	1st NDC 2016	13.6% reduction in GHG emissions by 2030 compared to a BAU scenario, conditional on external support	Land Use, Forests and Rangelands (afforestation and reforestation, natural forests, fuelwood from forest and orchards, rangelands rehabilitation)	At least 10% of Afghanistan land area and the habitat of selected species under a system of conservation	No	Conditional NDC only	3.35
Bangladesh	Updated 1st NDC 2021	Bangladesh commits to reduce GHG emissions by 6.73% (27.56 $MtCO_2eq$, unconditional) and additional 15.12% (61.9 $MtCO_2eq$, conditional) by 2030 compared to BAU	Land sector included as part of the broader target	Climate Resilient Ecosystem and Livelihoods	Yes	Conditional NDC and unconditional NDC	26.67
Bhutan	2nd NDC 2021	Bhutan maintains the commitment to remain carbon-neutral	Used to offset emissions within the target boundary Mitigation sectoral target: maintain 436 million tonnes of forest carbon stock outside protected area system; maintain 201 million tonnes of forest carbon stock in protected area 51.44% of Land area and 31% of forest area; 2000 ha of plantation and restoration work	Not indicated	No	Partially conditional NDC (unspecified mix of domestic / international resources)	2.71

Cambodia	Updated 1st NDC	42% reduction in GHG emission below BAU by 2030	Included in the target and treated as a separate sectoral target	Not indicated	No	Conditional NDC and unconditional NDC	68.64
Cook Islands	1st NDC 2016	38% reduction by 2020 (unconditional) and 81% reduction by 2030 (conditional) in GHG emission from electricity generation compared to 2006	Not included in the target	Conditional: The Cook Islands is confident that its strategies and policies pre 2020 and post 2020 will reduce and offset its carbon emissions and strengthen resilience. These actions include *inter alia* coastal protection, water security, agriculture, forestry, marine conservation, waste, tourism and land management	No	Conditional NDC and unconditional NDC	N/A
Indonesia	Updated 1st NDC 2021	29% (unconditional) and up to 41% (conditional) by 2030 compared to the business as usual scenario; 26% (unconditional) reduction in GHG emissions by 2020 compared to BAU scenario	Included as part of broader target Mitigation sectoral target: target by 2030 in peat lands restoration of 2 million ha and rehabilitation of degraded land of 12 million ha	Not indicated	No	Conditional and unconditional NDC; Unconditional: 26% reduction from BAU by 2020, 29% reduction from BAU by 2030; Conditional: 41% reduction from BAU by 2030	1279.48
Iran	INDC 2015	4% (unconditional) up to 12% (conditional) reduction in GHG emissions by 2030 compared to the BAU scenario	Included in the target, "These additional mitigation actions will be achieved through focusing on conservation and development of forests"	Improve the environment and protecting natural resources	No	Conditional NDC and unconditional NDC	20.41

Kiribati	1st NDC 2016	13.7% reduction in GHG emissions by 2025 and 12.8% by 2030 compared to a BAU projection	Not included in the target however, the INDC states that "In addition to these quantified outcomes, Kiribati will proactively protect and sustainably manage its mangrove resources, as well as protect and enhance coastal vegetation and seagrass beds. Together these actions represent effective stewardship of more than 6 million tonnes of Carbon Dioxide stored, more than 100 times the current annual national emissions inventory"	Not indicated	No	Conditional NDC and unconditional NDC	N/A
Lao PDR	Updated 1st NDC 2021	Lao PDR commits to reduce emissions by 60% (unconditional) by 2030	Included as part of the broader emissions reduction target; also treated as a separate sectoral target Unconditional part of mitigation target: reduced emissions from deforestation and forest degradation, foster conservation, sustainable management of forests, buffer zones of national parks and other preserves, and enhancement of forest carbon stocks Conditional part of mitigation target: increased forest cover to 70% of land area (i.e., to 16.58 million hectares) through reduced emissions from deforestation and forest degradation, foster conservation, sustainable management of forests, buffer zones of national parks and other preserves, and enhancement of forest carbon stocks	Promote integrated land use planning, natural resources and environment management	Yes	Conditional NDC and unconditional NDC	63.25

Malaysia	Updated 1st NDC 2021	Malaysia commits to reduce its carbon intensity by 45% (unconditional) by 2030 compared to 2005 levels	Included as part of the broader target LULUCF Categories: Forest Land Cropland Grassland Wetland Settlement (Emissions and removals from grassland and wetland will be accounted subject to the activities undertaken). LULUCF pools: Above ground Below ground Soil organic carbon (drained peatlands)	Preservation of vulnerable terrestrial and marine ecosystem and expanding protected areas, including fisheries zones within the marine and coastal protection corridors will be given priority. The ability to manage terrestrial ecosystem is essential and can be enhanced by increasing riparian area management units and reserving larger buffer areas around wetlands, peat swamps and mangroves. Moreover, efforts in establishing reserve to protect ecosystem diversity through enhancing structural and species varieties are also needed	No	Unconditional	237.70
Maldives	Updated 1st NDC 2020	Maldives commits to reduce emissions by 26% (conditional) by 2030 compared to BAU and strive to achieve net-zero by 2030	Not included in the target	Not indicated	No	Conditional NDC only	N/A
Mongolia	1st NDC 2020	Unconditional: 22.7% reduction from BAU by 2030, excluding LULUCF Conditional: 27.2% reduction from BAU by 2030, excluding LULUCF	Used to offset emissions within the target boundary. GHG removals by forest: -2.6 $MtCO_2eq$	Enable adaptation opportunities and adaptive capacities for vulnerable biodiversity to climate change	No	Conditional NDC and unconditional NDC	33.10

Myanmar	Updated 1st NDC 2021	Myanmar commits to reduce its emissions by 244.52 million tCO_2eq (unconditional) and by 414.75 million tCO_2eq (conditional) by 2030	Included as part of the broader target The National REDD+ Strategy sets a target to achieve net-zero deforestation by the year 2045. This goal underlies the conditional target of net emission reductions of 50% by 2030 and net-zero emissions from forestry and other land use (FOLU) by 2040	Included as part of the broader target. Sectoral unconditional actions: Assessment of impacts of climate change on biodiversity and wildlife and taking necessary adaptation measures.; Conserving and protecting biodiversity, habitats, ecological hotspots and wildlife and building their resilience against climate change	Yes	Conditional NDC and unconditional NDC	176.22
Nauru	Updated 1st NDC 2021	Not applicable	Not indicated	Not indicated	No	Conditional NDC and unconditional NDC	N/A
Nepal	2nd NDC 2020	No GHG Target mentioned in the submission	Treated as a separate sectoral target Mitigation sectoral target: by 2030, maintain 45% of the total area of the country under forest cover (including other wooded land limited to less than 4%)	Forests, Biodiversity and Watershed Conservation are one of the eight adaptation priorities of Nepal	No	Conditional NDC and unconditional NDC	12.98
Niue	1st NDC 2016	Not applicable	Not included in the target	To develop effective adaptation responses and enhance adaptive capacity to protect livelihoods, natural resources and assets, and areas vulnerable to the impacts of climate change to all sectors	No	Conditional NDC and unconditional NDC	N/A

Pakistan	Updated 1st NDC 2021	Pakistan commits to reducing its emissions by 50% by 2030 compared to BAU (15% unconditional, 35% conditional)	Included as part of the broader target	By 2023, total protected areas in the country will be enhanced from 12% to 15% that will result in preserving rare fauna/ flora, green job opportunities for 5,500 people, and promoting ecotourism	No	Conditional NDC and unconditional NDC	26.37
Palau	1st NDC 2016	22% reduction in GHG emissions from energy sector 2025 compared to 2005	Not included in the target	Not indicated	No	Conditional NDC only	N/A
Papua New Guinea	2nd NDC 2020	Papua New Guinea commits to a carbon neutrality target within the energy industries sub-sector by 2030, and a 10,000 Gg CO_2e reduction target in annual emissions from deforestation and forest degradation compared to 2015 level by 2030	Treated as a separate sectoral target Mitigation sectoral target: PNG will reduce the area of annual deforestation and annual degradation by 25% against 2015 levels (equating to a reduction of 8,300 ha or annual deforestation and 43,300ha of degradation), and increase the area of afforestation, reforestation, and ecosystem restoration. It will reduce 10,000 Gg CO_2e of the net emission from the LULUCF subsector by 2030. LULUCF will be converted from net GHG source (1,716 Gg CO_2e) in 2015 to net GHG sink (-8,284 Gg CO_2e) by 2030 to mitigate emissions from other sectors	Not indicated	No	Conditional NDC only	66.18

Philippines	1st NDC 2021	75% reduction in GHG emissions compared to the BAU scenario of 2000–2030, of which 2.7% is unconditional and 72.29% is conditional	Not included in the target	Adaptation measures including coastal and marine ecosystems and biodiversity, health, and human security, to pre-empt, reduce and address residual loss and damage. The Philippines shall pursue forest protection, forest restoration and reforestation, and access to results-based finance in forest conservation	No	Conditional NDC and unconditional NDC	80.53
Samoa	2nd NDC 2021	Overall GHG emissions reduction of 26% in 2030 compared to 2007 levels (or 91 Gg CO_2e compared to the new reference year once Samoa's GHG emissions inventory has been updated)	Included as part of the broader target Conditional target: Reduce GHG emissions in the sector by 26% in 2030 compared to 2007 levels (or by 35.2 Gg CO_2e compared to the new reference year levels once the GHG emissions inventory is updated)	Building on current adaptation actions, Samoa identifies the following quantitative targets that contribute to adaptation in the marine and AFOLU sectors: (i) Marine - expand the area of mangrove forests in Samoa by 5% by 2030 relative to 2018; (ii) AFOLU - expand the area under agroforestry to an additional 5% of agricultural land by 2030 relative to 2018; (iii) AFOLU - manage forests sustainably and increase total forest cover by 2% by 2030 relative to 2013	No	Conditional NDC only	0.04
Sri Lanka	Updated 1st NDC 2021	Sri Lanka commits to reduce greenhouse emissions by 14.5% for the period of 2021–2030 from Power (electricity generation), Transport, Industry, Waste, Forestry, and Agriculture	Included as part of the broader target Mitigation sectoral target: improve the quality of forest plantations of 78,000 ha in state-owned lands	Adaptation sectoral target: restoration of at least 25% each of degraded terrestrial and wetland landscapes; restore the natural ecosystem in fog interception zones at least by 25% by 2030; restore climate-vulnerable riparian instream areas; establish at least two facilities for ex-site flora and fauna conservation; restoration of costal ecosystems including mangroves.	Yes	Conditional NDC and unconditional NDC	7.47

Thailand	Updated 1st NDC 2020	20% (unconditional) up to 25% (conditional) reduction in GHG emissions by 2030 compared to the BAU scenario	Not included	Natural resources management sector aims to sustainably manage natural resources and biodiversity to respond to climate change impacts by enhancing the conservation, rehabilitation, and sustainable use of natural resources and biodiversity and strengthening public participation	No	Conditional NDC and unconditional NDC	137.35
Timor-Leste	1st NDC 2017	Not applicable	Not included	Forestry, biodiversity and coastal ecosystem resilience are indicated as priority adaptation areas	No	Unconditional NDC only	2.90
Tonga	2nd NDC 2020	Tonga commits to reduce emissions by 13% (16Gg) by 2030 compared to 2006 in energy sector	Not included in the quantified target "The current GHG inventory does not adequately capture GHG emissions and removals from agriculture, forestry and other land use. Non-emission targets of establishing a forest inventory as prerequisite to identify a GHG emission target for the 2025 NDC and planting one million trees by 2023	Maintenance of the existing stocks of fish and other marine species through a commitment to expand the area covered by Marine Protected Areas (MPAs) and Special Management Areas (SMAs) to 30% of the Tonga's Exclusive Economic Zone (EEZ)	No	Conditional NDC and unconditional NDC	N/A

Vanuatu	Updated 1st NDC 2021	Not applicable	Not included in the target although the following is mentioned: "Vanuatu is committed to maintaining its forest cover in the country and is expected to remain net carbon negative in future as well. The REDD+ programme is currently being implemented in Vanuatu to improve sustainable forest management practices. No specific NDC actions identified for forestry sub-sector as the measures to reduce deforestation and promote good land care as accepted mitigation practices are still under development under the REDD+ initiative. Based on the results and outcome from the REDD+ initiative, potential mitigation interventions shall be included in future NDC update"	Not indicated	No	Conditional	0.63
Viet Nam	Updated 1st NDC 2020	"Unconditional contribution: With domestic resources, by 2025 Viet Nam will have reduced total GHG emissions by about 7.3% compared to the BAU scenario (equivalent to 52.9 million tonnes of CO_2e), and by 2030 Viet Nam will have reduced total GHG emissions by about 9% compared to the BAU scenario (equivalent to 83.9 million tonnes of CO_2e)" "Conditional contribution: The above-mentioned 9% contribution can be increased to 27% by 2030 (equivalent to 250.8 million tonnes of CO_2eq)"	Included in the target	Implementing adaptation measures, including ecosystem-based adaptation and NbSs to minimise damage associated with climate change in each sector in the future	No	Conditional NDC and unconditional NDC	102.49

2 CONSIDERATIONS FOR FINANCING NBSs FOR ENHANCEMENT OF NDCs

There is a significant funding gap in investments in nature. To preserve and restore ecosystems alone, the required investment globally is estimated at $300–400 billion per year, whereas only $52 billion is invested annually in such projects (WWF, 2020). Governments and philanthropic funding alone cannot close the funding gap; estimates suggest that through new positive impact enterprise (i.e., enterprises that have positive impacts on both people and the planet), the private sector could deliver more than half of the funding needed to achieve the SDGs, and thereby also support the financing of NbSs (WWF, 2020). For example, as a comparison to the global investment required and to put it into perspective, Apple's annual revenue in 2020 was $274 billion. This suggests that if there is a will, sufficient finance can be raised or (re)directed to invest in nature.

Finance related to climate action and NDCs – and specifically to NbSs – is a critical topic. **Two areas are particularly important in financing NbS in NDCs: the first concerns conditional components of NDCs, and the second involves the different sources of finance.** Different sources of finance can be subdivided into three broad categories: (1) accessing public finance through domestic public finance, the Green Climate Fund (GCF) and the Global Environment Facility (GEF); (2) accessing private finance and/or finance through public-private partnerships (PPPs); and (3) accessing finance through foundations. To aid in the design and implementation of NbSs for NDCs, countries and organizations would do well to consider these topics.

Photo by Rafal Jachimczyk on Unsplash

2.1 CONDITIONAL COMPONENTS OF NDCs

In their NDCs, developing countries indicated actions they are ready to finance but also included the concept of 'conditional contributions'. The concept of the conditional components of an NDC is an issue about which there is limited clarity. Conditional components of NDCs are actions developing countries will implement *only if* they receive external financial support, thus signalling an increase in ambition and/or support needed. Uncertainty remains regarding how this translates into implementation. Past estimates indicate that the level of finance to support achievement of current, conditional NDC targets has not been delivered (Brana-Varela & Lee, 2016). Several countries have expressed that what they did include in the first NDCs, in terms of targets for the LULUCF or forest sector specifically, is already extremely ambitious. The focus in these countries is, therefore, on accessing the finance needed to support the existing targets. Those countries in this case are not necessarily able to consider enhanced ambition for this sector (UNDP, 2021). Nonetheless, meeting the conditional targets in the first NDC with the necessary finance would already indicate an increase ambition.

It is unlikely countries will move quickly from what is formulated in their NDCs into the implementation of NbSs and activities in the forest sector until there is more clarity regarding how to finance REDD+ and how to deal with, for instance, agricultural commodities like palm oil, soy, and cattle ranching as key drivers of deforestation or how to tackle wider governance challenges (Hein and others, 2018). This is important as deforestation, especially in the tropics, is increasingly driven by the global demand for such agricultural forest-risk commodities. Therefore, for REDD+ to be effective, policies should include measures targeting both producers and consumers to address commodity-driven deforestation (Henders and others, 2018). Such complex interactions are also likely to influence the successful integration of NbSs in NDCs across domains related to how to finance NbSs, conditional versus unconditional components, and tackling drivers that will have a direct impact on the implementation success of NbSs such as those in the agricultural sector (UNDP, 2021).

The following three subsections look at ways that finance could be leveraged to support both the conditional and unconditional implementation of NbSs.

2.2 ACCESSING FINANCE THROUGH PUBLIC FINANCE SOURCES

Domestic finance, the GEF and GCF can be considered the main relevant national and international finance instruments for NbS implementation. This section provides a brief overview of two examples of domestic public finance in India and Cambodia as well as relevant finance provided through the GEF and GCF.

Photo by Zinko Hein on Unsplash

2.2.1 DOMESTIC PUBLIC FINANCE

Domestic public finance can be catalytic as co-finance for programmes or projects financed by the private sector and/or global public finance schemes such as the GEF and GCF. **Domestic public finance may be hard to map but when designed and successfully implemented, it is an important part of the finance picture for NbSs in NDCs.** Several countries have taken steps to use domestic public finance to support the implementation of policies and measures for climate mitigation and/or adaptation, but may also face challenges in implementation, as the case study of India below illustrates.

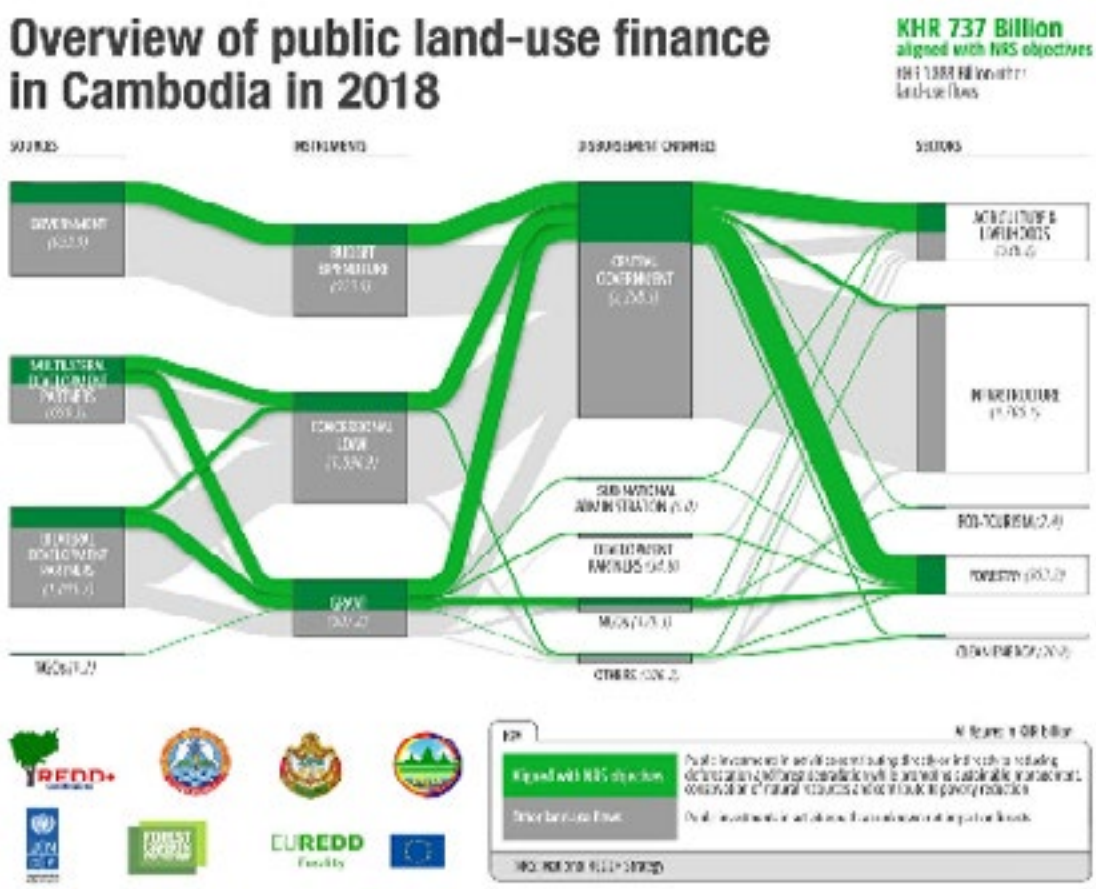


Figure 2: Overview of public land-use finance in Cambodia in 2018. Source: Land Use Finance Tool.

An example of this is ecological fiscal transfer (EFT), which involves higher levels of government distributing funds to lower levels of government based on ecological indicators. In 2015, India established the world's largest system of EFTs when its 14th Finance Commission added forest cover to the formula that determines the amount of tax revenue the Union government distributes annually to each state. Bush and others (2020) found that the introduction of EFTs has not yet led states to increase their forestry budgets. They found that this could be due to two main reasons: (1) low expectations on the part of state government officials that EFTs would continue in such a way that increases in forest cover would be rewarded with increases

in revenue; and/or (2) insufficient motivation to increase forestry budgets as an investment in future revenue from EFTs. The 15th Finance Commission modified the EFTs to further incentivize states to increase forest protection and restoration by keeping forests in the tax revenue distribution formula for another period and updating the index year from which forest cover is measured from 2013 to 2017. Furthermore, it has sought to address insufficient motivation by increasing the weight on forests in the formula from 7.5 per cent to 10 per cent. Future research can show whether these modified EFTs incentivize states to increase forest protection and restoration (Bush and others, 2020).

Another example is the mapping of public finance for land-use finance through the 'Land-Use Finance Tool', developed by the European Forest Institute's REDD Facility. This tool has been used to map land-use finance in Asia-Pacific in Cambodia, Papua New Guinea and in the Central Highlands of Viet Nam. The most recent study in Cambodia (2021) found that the total public land-use spending in Cambodia in 2018 amounted to ≈$656,25 million), which was 2.7 per cent of the GDP, or ≈11.8 per cent of the estimated overall expenditure by the government, development partners and non-governmental organizations. About 28 per cent of total public land-use spending in 2018 (≈$1.7 billion) was aligned with the objectives of Cambodia's National REDD+ Strategy (NRS) (as shown in green in Figure 2). This amount represents 0.7% of GDP.

Development partners, especially bilateral partners, are important sources of funds for NRS-related activities. Land-use finance identified as non-aligned with NRS objectives amount to $472 million, the bulk of which corresponded with investments in infrastructure and, to a lesser extent, agriculture. This study could not assess the implementation of relevant environmental impact assessment and safeguard measures related to potential adverse effects of these investments on forests. Nonetheless, the study found that the magnitude of these flows highlights the need for greater scrutiny of their direct and indirect impacts on land use and forests, and for the assessment of safeguard implementation and mainstreaming of REDD+ in all land-use sectors.

2.2.2 THE GLOBAL ENVIRONMENT FACILITY (GEF)

Currently the Global Environment Facility (GEF) is in its 7th investment and programming cycle (GEF-7, 2018–2022). Governments and partner agencies are well acquainted with the GEF, as it has been operational for 28 years. Since its inception in 1992, the GEF has funded at least 380 forest-related projects and invested approximately $2.1 billion. Additionally, it has leveraged an expected amount of $9.5 billion to promote sustainable forest management in developing countries around the world (GEF website). Midway through GEF-7, the many projects and programmes still underway are expected to improve the management of over 305 million hectares of forest landscapes for multiple benefits and services; restore more than 7.6 million hectares of forest lands; mitigate the emission of 1,294 million tCO_2e; and enhance the management of 28 million hectares of protected areas in forest landscapes (GEF website).

Photo by Michal Pechardo on Unsplash

There are two main streams under the GEF's work on forests: sustainable forest management (SFM) and forest and landscape restoration. In the GEF-6 programming cycle (2014–2018), a $250 million fund under the SFM strategy encouraged developing countries to invest in projects that integrate biodiversity, climate change and land degradation. In most cases, the GEF provides funding to support government projects and programmes, with governments deciding on the executing agency (governmental institutions, civil society organizations, private sector companies and research institutions). This means that, in principle, there is full flexibility for the government to choose the type of project it would like to present to the GEF. Given this set-up, NbS projects to support NDCs could be designed and anchored in the GEF's existing two funding streams. For this to be successful, however, it is necessary to create a stronger engagement of national institutions and ensure that programmes are driven by countries. Furthermore, it is important for the GEF and partner agencies to forge strategic alliances with key national stakeholders who may be partners seeking change (ODI, 2013).

2.2.3 THE GREEN CLIMATE FUND

The Green Climate Fund (GCF) is the main multilateral source of funding for climate adaptation and mitigation in developing countries. It was established at the UN's sixteenth session of the Conference of the Parties (COP) (UNFCCC, 2010) as an operating entity of the Financial Mechanism of the UNFCCC under Article 11. The Fund aims for a 50:50 balance between mitigation and adaptation investments over time. It also aims for a floor of 50 per cent of the adaptation allocation for particularly vulnerable countries, including least developed countries (LDCs), small island developing states (SIDS), and African states. The GCF has eight results areas: (1) buildings, cities, industries, and appliances; (2) ecosystems and ecosystem services; (3) energy generation and access; (4) health, food, and water security; (5) infrastructure and built environment; (6) livelihoods of people and communities; (7) transport; and (8) forest and land use.

The result areas have been targeted because of their potential to deliver a substantial impact on mitigation and adaptation. Although NbSs do not feature explicitly in the GCF's result areas, they do cut across and the GCF continues to support innovative, ecosystem-based approaches that match local livelihood needs with the global environmental imperative of overcoming the climate challenge. Furthermore, developing country parties to the UNFCCC can access GCF support for activities across the three REDD+ phases through the GCF Readiness Programme, the Project Preparation Facility and regular project cycle funding. Countries that have completed the first two phases of REDD+ (readiness and implementation) for results generated from the end of 2013 to the end of 2018 are eligible to apply for phase 3 funding (results-based payments or RBPs) through the GCF's REDD+ RbP pilot programme.

As the GCF is a new financing mechanism, especially compared to the GEF, it is continuously seeking to improve its operations. The design of GCF projects is often complex, time-consuming, and requires significant up-front investment. Furthermore, few countries have entities with direct access to the GCF, making it challenging to have effective and sustainable country-driven processes that could support the implementation of NbSs in NDCs.

2.3 ACCESSING FINANCE THROUGH PRIVATE FINANCE SOURCES

There are several different types of private finance and mixes of private finance and public finance that are relevant for the development and implementation of NbSs in NDCs. This section provides a brief overview on finance from private companies, debt-for-nature swaps, and green and blue bonds.

2.3.1 FINANCE FROM THE PRIVATE SECTOR FOR NBSs

For the past six years, the World Economic Forum (WEF) has identified the top three risks most likely to damage the global economy in terms of severity of impact and/or likelihood of occurrence: (1) the failure to mitigate and adapt to climate change; (2) extreme weather or natural disasters; and (3) biodiversity loss/environmental damage (WEF Global Risks Reports 2015–2021; Seddon and others, 2021). Therefore, investments in nature can be seen as both a necessity and an opportunity; consequently, there has been a sharp rise in funding pledges for NbSs from the private sector (Table 2). Unfortunately, the private sector perceives nature conservation projects as relatively unattractive due to limited large-scale opportunities, limited liquid investment opportunities, non-transparent risks, relatively low returns and longtime horizons (WWF, 2020).

Whether an investor's motivation is profit, resilience, compliance or mission, natural capital will be increasingly factored into investment decisions (TNC, 2019). Based on analysis across 163 economic sectors, the WEF also estimated that all businesses depend on nature either directly or through their supply chains, and that at least $44 trillion of economic value generation (over half of global GDP) is dependent on nature and its services to people (WEF, 2020). For those who set public policy, develop deals and raise capital, it is important (and motivating) to recall that such actions can indeed lead to change in investor behaviour. Investors and asset owners, on the other hand, have their own key to unlocking the potential energy of their capital: securing a competitive advantage(TNC, 2019).

Photo by Maria Ines Simonini ©

Investors seeking a competitive advantage while ignoring these lessons are in a race to the bottom where climate change and loss of nature result in substantial economic losses. Yet, by choosing to align competitive incentives and the greater good, and recognizing the inherent value and mitigation nature provides, investors and their partners can leverage tremendous financial assets to secure a liveable future (TNC, 2019) by investing in NbSs.

Some of the examples in Table 2 relate to carbon finance and carbon markets. Carbon finance covers financial tools such as carbon emission trading to reduce the impact of GHG on the environment by giving carbon emissions a price. The general term is applied to investments in GHG emission reduction projects and the creation (origination) of financial instruments that are tradeable on the carbon market. Carbon markets aim to reduce GHG (or 'carbon') emissions cost-effectively by setting limits on emissions and enabling the trading of emission units, which are instruments representing emission reductions. Trading enables entities that can reduce emissions at lower cost to be paid to do so by higher-cost emitters, thus lowering the economic cost of reducing emissions (see UNDP's page on carbon markets for more information).

For example, the Lowering Emissions by Accelerating Forest finance Coalition (LEAF) works through Emergent, a United States non-profit organization that provides the platform for finance to support tropical and subtropical forest jurisdictions to make substantial reductions in their emissions from deforestation. Emergent also serves as LEAF's administrative coordinator. Emergent buys forest protection credits, at a guaranteed floor price, from national-scale jurisdictional REDD+ programmes that meet the highest ART 'TREES' (Architecture for REDD+ Transactions, The REDD+ Environmental Excellence Standard) criteria. Emergent subsequently sells these credits to private sector companies to help them meet their climate mitigation and net-zero targets and ensures that transaction proceeds are invested in climate-positive and sustainable development initiatives.

Although it is not clear in every corporate funding pledge illustrated in Table 2, several companies are operational in the Asia-Pacific region, which means that there might be future possibilities to scale up implementation in the region. For example, Unilever is working with the Indonesian government-owned palm oil plantation company, PT Perkebunan Nusantara, on a joint plan to support local mills and smallholder farmers to produce palm oil according to the standards of no deforestation, no development on peat, and no exploitation of people and communities (Unilever – Zero deforestation). Another example is Ecosia, who have planted 1,475,415 trees and restored 1,975 hectares in Indonesia since 2016.

Table 2: Examples (non-exhaustive) of recent corporate funding pledges for nature and climate (based on new research and adapted from Seddon and others, 2021).

COMPANY	FUND (SUM)	PLEDGE DETAILS
Amazon	Right Now Climate Fund ($100 million) Jeff Bezos Earth Fund ($10 billion)	Restore and conserve forests, wetlands and peatlands for carbon storage. The fund forms part of the company's pledge for carbon neutrality by 2040. Fund activists, scientists and NGOs to protect the natural world.
Apple	Carbon Solutions Fund	Restore and protect natural ecosystems through a community-driven approach, including savannahs in Kenya, and 27,000 acres of mangroves in Colombia. This forms part of Apple's pledge of net-zero emissions in its supply chain and product life cycles by 2030; 75% of this will come from emission reductions, the remaining 25% from offsets through NbSs funded by the Carbon Solutions Fund.
Delta Airlines	Delta Environmental Sustainability Principles $1 billion for carbon neutrality; not all specified for NbSs	Investment over 10 years (2020–2030) in carbon removal through forestry, wetland restoration, grassland conservation, marine and soil carbon capture, and other negative emissions technologies. This forms part of Delta's aim to be the first carbon neutral airline.
Ecosia	Advertising revenue	Ecosia displays ads alongside users' search results. When users click on them, Ecosia gets paid. The advertising revenue is spent on covering the search engine's costs, but everything else, including its profits, goes towards climate action. Ecosia invests 20% in renewable energy, regenerative agriculture, and grassroots activism. The remaining 80% goes towards planting and protecting trees around the world. Ecosia's 15 million users have planted over 120 million trees, for free, just by searching the web.
Heathrow Airport	Heathrow 2.0 Sum not specified	UK-based offsetting since 2018, focusing on peatland restoration, to offset emissions from the airport itself. Heathrow also aims to offset emissions from all flights, through the UN's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) which involves emissions trading. They are also working with NGOs, public and private sectors to create a market for ecosystem services from UK ecosystems. Use of nature-based offsets forms part of Heathrow's roadmap for carbon neutral growth.

KLM	KLM Carbon Footprint Reduction Sum not specified	KLM has identified three ways to reduce the carbon footprint of its flight operation: reduce fuel consumption, replace fossil fuel, and compensate for CO_2 emissions. In 2007, KLM drew up a policy to reduce the environmental impact of its own operations. Its goal was to reduce CO_2 emissions by 20% per passenger in 2020 (compared to 2011). By the end of 2018 KLM had reduced its carbon emissions by 17%. In 2030, KLM aims to realize a reduction of its total CO_2 footprint of 15% compared to 2005. The company has a carbon offsetting scheme (CO_2zero). Passengers who choose to compensate for the individual CO_2 emissions produced by their flight now contribute to the 'CO_2OL Tropical Mix' reforestation initiative in Panama. This project carries the Gold Standard Global Goals certificate. KLM also uses sustainably sourced cocoa from this project.
LEAF	LEAF Coalition ($1 billion)	The LEAF Coalition was launched on April 22nd, 2021, by an initial group of governments and leading companies to mobilize at least $1 billion in finance to support tropical and subtropical forest jurisdictions in making substantial reductions in their emissions from deforestation. This group of participants is growing, with new companies and governments able to join in the time leading up to the signing of final agreements by the end of 2021.
Mastercard and Partners	Priceless Planet Coalition Sum not specified	The Priceless Planet Coalition (including other partners such as Citibank, Santander UK, WH Smith and IHS Markit) pledged to plant 100 million trees over five years (2020–2025), with planting managed by Conservation International and the World Resources Institute.
Microsoft	Biodiversity Initiative Sum not specified	The Initiative aims to protect more land than the company uses by 2025 through land acquisition, national park creation and community- or indigenous-led conservation. The company has also committed to planting 250,000 trees in 2020 alone. This is in addition to the Carbon Initiative, which commits the company to being carbon negative by 2030.
Salesforce	Founding member of 1t.org	Goal is to support and mobilize the conservation, restoration and growth of 100 million trees by the end of 2030.
Shell	NbS Programme (£300 million / year 2019-2021)	Investment in NbSs such as restoration and protection of forests, grasslands and wetlands, as a form of offsetting for fuel use by customers at about 1400 fuel stations. The investment in NbSs will go beyond the initial 3 years. For example, Shell aims to plant 1 million trees over 5 years in Scotland. This is part of Shell's plan to reach net-zero emissions by 2050: 65% by emission reduction and 35% by offsetting, including the NbS programme.
Unilever	Climate and Nature Fund €1 billion	Ecosystem restoration, protection and water security projects. This is in addition to committing to deforestation-free supply chains by 2023, and net- zero emissions for all products by 2039.

In addition to Table 2, **there are three notable examples of private investor coalitions acting on NbSs.** The first is 1t.org led by the World Economic Forum to mobilize a global movement to conserve, restore and grow 1 trillion trees by 2030. It has a cross-industry corporate alliance and seeks to drive change by mobilizing the private sector, facilitating multi-stakeholder partnerships in key regions, and supporting innovation and 'eco-preneurship' on the ground. Currently, it supports projects in the USA, the Sahel and the African Great Green Wall, the Amazon Basin and India.

The second example,'Business for Nature', is a coalition of over 70 organizations including the International Chamber of Commerce, the World Economic Forum, the World Business Council for Sustainable Development, conservation organizations, and groups representing companies on almost every continent. Business for Nature provides the rationale for companies to support NbSs and has encouraged 530 companies to commit to reversing nature loss. Companies acting through Business for Nature include the South Gobi Cashmere Project to redefine high quality cashmere production in the Mongolian steppe. It is led by Kering, along with the Wildlife Conservation Society and Rio Tinto, with collaboration from Stanford University and NASA.

The third example is the https://capitalscoalition.org/ that enables organizations to understand how their success is directly or indirectly underpinned by natural capital, social capital and human capital, thereby empowering them to make decisions that offer the greatest value across all capitals. The Capitals Coalition has developed protocols (Natural Capital Protocol and Social & Human Capital Protocol) as decision-making frameworks that enable organizations to identify, measure and value their impacts and dependencies on natural capital, social capital and human capital.

For example, the Capital Coalition has established a 'Government Dialogue on Natural Capital' which brings together governments from around the world to identify best practices and strengthen their enabling roles to transform decision-making by redefining the concept of value. The Government Dialogue was set up by the Netherlands and Scottish governments and the Natural Capital Coalition in 2017, in collaboration with non-governmental organizations such as the Green Economy Coalition and the Wealth Accounting and the Valuation of Ecosystem Services (WAVES) Programme. Over the years, representatives from 35 countries have been engaged in the dialogue, either by providing input to one or more the reports, or by participating in one or more of the meetings, including some countries from the Asia-Pacific region: Australia, Botswana, Belgium, Brazil, China, Costa Rica, European Union, Finland, France, Germany, Ghana, Guatemala, India, Indonesia, Ireland, Israel, Italy, Japan, Madagascar, Malaysia, Mexico, Namibia, Netherlands, New Zealand, Nigeria, Norway, Philippines, Rwanda, South Africa, Spain, Uganda, United Kingdom, Viet Nam, Zambia.

The initiatives presented above are often, or can be combined, through public-private partnerships (PPPs). PPPs can be defined as "long-term contracts between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility" (see World Bank PPPs). PPPs are critical, as

nature and ensuing NbSs for NDCs are often public goods, albeit ones that can immensely benefit from private sector support. PPPs are dealt with in various ways in Southeast Asia. Some countries define PPP terms and set up dedicated units to deal with implementation. Others institute PPPs as part of a larger investment or public institution (Zen, 2018). Having several agencies responsible for PPPs potentially leads to an overlap of authority and a prolonged process. Among the major factors supporting the implementation of PPPs are coherent policy, public officers with sufficient PPPs knowledge, public sector willingness to have mutual relationships with private partners, and leadership (Zen, 2018).

2.3.2 DEBT FOR NATURE SWAPS

Private finance can also be leveraged through debt-for-nature swaps. Debt-for-nature swaps belong to a broader category of debt conversion programmes. Incentivized debt conversion is a financing mechanism that can support countries with a debt burden to bolster their long-term domestic investment in nature conservation, development projects, public health and other social programs. The concept is not new; the first debt-for-nature swap occurred in 1987 when Bolivia and Conservation International negotiated the exchange of $650,000 of Bolivian commercial debt for a commitment to conserve 1.5 million ha of forest (Cassimon and others, 2011). They are voluntary transactions that typically involve cancelling or restructuring a portion of a country's sovereign debt, often with better rates or more favourable repayment terms, in exchange for the country's binding commitment to uphold the conditions of the debt conversion agreement. Prioritizing debt conversion opportunities according to their potential return on investment can increase the impact and effectiveness of this finance mechanism. Debt-for-nature swaps can provide substantial finance for conservation, which in turn provides co- benefits for climate change mitigation and adaptation.

Throughout the 1990s, non-governmental organizations such as the Rainforest Alliance, The Nature Conservancy (TNC), and the World Wild Fund for Nature began to play a central role as third parties in negotiating, administering, and implementing debt restructuring for tropical forest conservation. As of 2018, estimates suggest these third-party transactions generated the equivalent of $167 million in local currencies to fund conservation in 16 countries, including Brazil, Costa Rica, Ghana, Madagascar, Mexico, Philippines, and Zambia (Sheikh, 2018). A concrete example of a debt-for-nature swap in the Seychelles is presented in section 3.2.

Another example of a debt-for-nature swap underway in Africa is a recently (January 2021) launched project by the International Institute for Environment and Development (IIED) on debt swaps for climate and nature outcomes in West Africa. The project aims to scope and design debt swaps that agree on debt reduction or relief in exchange for a commitment to positive nature and climate targets. IIED will work with governments and civil society in Cabo Verde, Guinea-Bissau, Mauritania and Senegal and with public (World Bank, African

Development Bank, International Monetary Fund) and private international creditors. The project will put in place debt deals and implementation strategies for debt-for-nature swaps and climate in at least two of the four selected countries, through national scoping, international engagement and technical support.

In the Asia-Pacific region, UNDP Country Offices are currently exploring debt-for-nature swaps in Lao PDR and Mongolia, as well as sustainable programmatic bonds in Sri Lanka and the Maldives.

2.3.3 GREEN AND BLUE BONDS

Bonds are financial instruments that are based on debt and are used to raise capital for a range of purposes. They can be issued by various entities such as multilateral banks or commercial banks, governments ('sovereigns') and private entities. Investors in bonds, also known as bond investors, are paid a fixed interest rate called a coupon on a fixed schedule. The initial investment, the principal and interest must be paid in full at bond maturity (FAO, 2020). Bonds do not necessarily raise more money but they do offer an opportunity to restructure debts in a sustainable (with respect to nature) manner that may support the implementation of NbSs for NDCs.

There are two types of bonds that are relevant for financing NbSs: green and blue bonds. Green bonds specifically target activities and projects addressing the environment, climate change or sustainable development and are therefore subject to additional requirements. Since they are part of the environmental market, the underlying projects must comply with appropriate green bond standards, which broadly speaking address three areas of concern to investors (beyond financial requirements): environmental, social and governance. Green bonds are widely regarded as one of the key instruments to mobilize financial resources to implement the Paris Agreement (Gianfrate & Peri, 2019).

Since the European Investment Bank and World Bank issued the first green bond in 2007, these bonds have witnessed exponential growth (Gianfrate & Peri, 2019). The green bond market has seen strong growth, with the market taking off in 2014 when $37 billion in green bonds were issued. In 2018, issuance reached $167.3 billion, setting yet another record (Climate Bonds Initiative, 2021). By the third quarter of 2020, the cumulative issuance volume of green bonds since inception had reached $948 billion (Climate Bonds Initiative market summary Q3 2020).

Blue bonds are a subset of the green bond market and comprise a $200 billion global market of environmental bonds that has been growing rapidly. They are intended to finance marine-related activities and assets, including fisheries and aquaculture and their value chains (FAO, 2020). One of the most credible standards for green and blue bonds is the Climate Bonds Initiative (CBI), an international investor-focused not-for-profit organization working to mobilize the $100 trillion bond market to tackle climate change. In the case of government-leveraged bonds, the opportunity of green and blue bonds lies in the government and private sector coming together to address environmental challenges and opportunities on land and in oceans.

Photo by James Donaldson on Unsplash

The ASEAN Green Finance State of the Market 2019, reports that ASEAN issuance – supported by new regulation – has also grown substantially, reaching $8.1 billion in 2019 from $4.1 billion in 2018 and representing 3 per cent of the global total and 12 per cent of the Asia-Pacific regional total. Cumulative ASEAN issuance stands at $13.4 billion. Green bond and loan proceeds in ASEAN are mainly allocated towards buildings and energy, consistent with these as the largest sectors globally, followed by transport and water. Adaptation and resilience (A&R) projects have a higher share of allocations than the global average. The average size of ASEAN green bonds has remained between $200 and $250 million over the 2017–2019 period. Apart from the Republic of Indonesia's $1.25 billion green *sukuk* in 2018, ICBC Singapore's $1.5billion deal from April 2019 was the only one to exceed $1 billion.

Issuance by government-backed entities focuses heavily on buildings, while development banks and the Indonesian sovereign have a more balanced and diverse allocation to use of proceeds categories. In the private sector, non-financial corporates focus on the energy sector, while financial corporates tend to fund a greater variety of projects (see Figure 3).

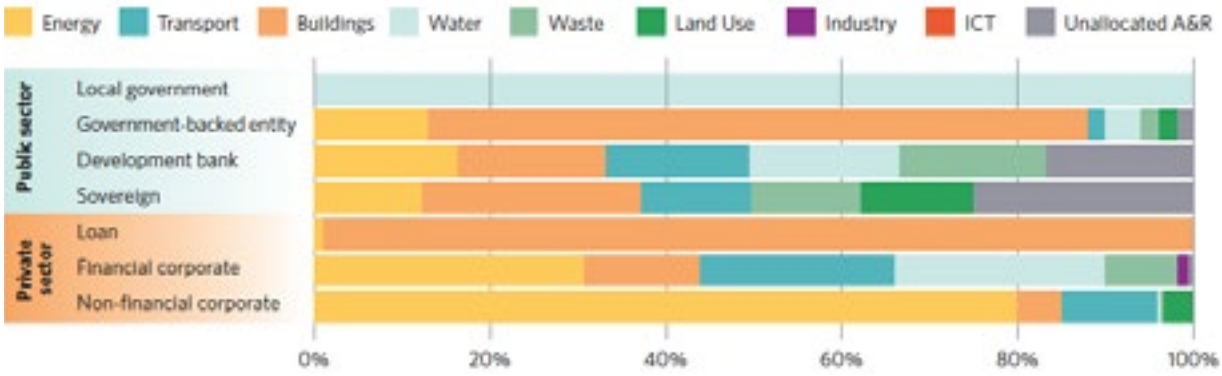


Figure 3: Focus of issuance of green bonds and loans by public and private sector in ASEAN in 2019. Source: ASEAN Green Finance State of the Market 2019.

The first perpetual green bond in ASEAN was raised by the Philippines. AC Energy, a subsidiary of the Ayala Group in the Philippines, issued the first perpetual bond with a size of $400 million in December 2019. This was its fourth green bond deal in 2019, raising $810 million across all four bonds. The bonds were listed on the Singapore Exchange. The 2016 issue was purchased by the Asian Development Bank, but subsequent issues were sold to the market. The proceeds will go towards solar, wind and geothermal projects. Three of the four issues were certified under the Climate Bonds Standard (ASEAN Green Finance State of the Market 2019).

It is important to recall that bonds require predictable revenue for interest payments. As such, currently most bonds' use the funds they generate for renewable energy instead of NbSs. Nonetheless, with growing experience in green and blue bonds as well as NbS implementation, certain market segments (both public and private) might take on higher risk for non-conventional green and blue bonds that include NbS actions.

2.4 FUNDING THROUGH PRIVATE / PHILANTHROPIC FOUNDATIONS

Funding through global private foundations (see some non-exhaustive examples presented in Table 3 below) could also be explored for either full or co-financing of NbSs in NDCs. Several of these foundations have been (or are currently active) in the Asia-Pacific region. Importantly, this type of concessional finance from private and/or philanthropic foundations can also support the raising of funds from public and private sources to implement NbSs in NDCs.

Section 2 has provided a short overview of key issues that are particularly important with respect to financing NbSs in NDCs. The following section focuses on tangible and practical examples of NbSs in various countries in the Asia-Pacific region that can contribute to NDC implementation.

Photo by Fuu J on Unsplash

Table 3: Examples (non-exhaustive) of global private and philanthropic foundations that could be relevant for financing of NbSs in NDCs. Note that where financial information is not specified, this information was not readily available from the website of the foundation in question.

FOUNDATION NAME	OBJECTIVES
Gordon and Betty Moore Foundation	The Gordon and Betty Moore Foundation's Environmental Conservation Programme balances long-term conservation with sustainable use. It aims to protect critical ecosystems and establish models for collaboration that can be replicated and expanded around the globe. It seeks to create lasting change in how land, freshwater and coastal marine ecosystems are managed. Since 2015, the Foundation's Environmental Conservation Programme has awarded 1,355 grants for a total of $1,670,263,920.
Climate Works Foundation	The Climate Works Foundation provides funders with comprehensive resources to assess, build, evolve, and execute high-impact climate-giving strategies. They provide services regarding Global Intelligence, Global Collaborations and Global Grant-making. The Foundation has several relevant programmes, including Forests & Land-Use, Finance, Food & Agriculture.
Ford Foundation	The Ford Foundation has a specific workstream on Natural Resources and Climate Change. Their focus is to work globally to ensure natural resource governance serves the public interest and reflects the aspirations of rural, low-income, and indigenous communities who claim customary rights to their land or have secured land rights. They have supported 203 grantees with an annual budget of $25 million.
David & Lucile Packard Foundation	The Foundation funds several relevant streams for NbSs such as 'fighting climate change', 'ensuring a better future for people and the ocean' and 'supporting local communities'.
Good Energies Foundation	Good Energies Foundation funds organizations and social businesses that work to reverse climate change. It supports programmes in two areas: access to clean energy and protection of tropical forests. The Foundation's Forest and Land Use Programme has two goals: halting tropical deforestation and promoting reforestation and landscape restoration. It supports efforts that raise the value of sustainable forests and covers the entire equatorial greenbelt of tropical forests, including the Amazon basin, Congo Basin, and Indonesia.
Margaret A Cargill Philanthropies	The mission of the Margaret A. Cargill Philanthropies is to provide meaningful assistance and support to society, the arts, and the environment. Regarding the environment, it supports community-based solutions that help address ecosystem degradation at scale in coastal ecosystems, freshwater ecosystems, tropical forests and grasslands.
American Jewish World Service	Among other things, the Service supports land, water and climate justice. It works through communities and supports 158 organizations slowing climate change and protecting the land, water and natural resources that rural and indigenous people depend on for survival.
Leonardo DiCaprio Foundation	In 1998, Leonardo DiCaprio established his foundation with the mission of protecting the world's last wild places. LDF implements solutions that help restore balance to threatened ecosystems, ensuring the long-term health and well-being of all Earth's inhabitants. The Foundation supports projects relevant to NbSs in 'wildlife and landscapes', 'marine life and oceans', 'climate change' and 'indigenous rights'.

3 EXAMPLES OF ACTIONS IN THE ASIA-PACIFIC REGION THAT INCLUDE NBSs IN NDC ENHANCEMENT

Based on the considerations for financing NbSs in NDCs (section 2), the following section provides some brief but practical examples of financing models in Indonesia, the Seychelles, Lao PDR and Samoa. These cases are by no means meant to be exhaustive but serve to provide examples of real cases of financing NbSs in the Asia-Pacific region (except for the Seychelles). Further information on each case study is presented in the short case study notes that accompany this report.

Photo by Gatis Marcinkevics on Unsplash

3.1 FINANCING NBSs THROUGH WORKING WITH GOVERNMENTS AND THE PRIVATE SECTOR ON SUSTAINABLE COMMODITIES IN INDONESIA'S PALM OIL PRODUCTION

Financing instrument: Public funds, EU EFI

Impact: Measure legality and sustainability in agricultural commodity production at the district and province level

Impact measurement: Availability of district data for each key performance indicator to be made available through an easily accessible and user-friendly web-based platform

Platform: Multi-stakeholder platform

The commercial production of palm oil, soy and beef are dominant economic forces in many national and developing rural economies. Managed sustainably, they have the potential to become engines for rural development, addressing many of the global sustainable development goals for ending poverty and protecting the planet. Palm oil is the dominant oil used in food in Africa and Asia, and about half the people in the world rely on palm oil in their diets. As the global population continues to grow, the role of palm oil in meeting global food demand will increase. Furthermore, as palm oil plantations drive national economic development and provide jobs, they are an important source of employment in Indonesia and Malaysia. The industry also contributes to the development of remote areas via the provision of infrastructure including roads, hospitals and schools. However, for many people, palm oil, along with other agricultural commodities, has become synonymous with images of biodiversity loss, tropical deforestation and social conflict. In terms of biodiversity loss, the tropical areas suitable for palm oil plantations are often rich in biodiversity.

At the same time, producers and governments in the tropics often view palm oil as an important engine for economic growth and poverty reduction, especially for smallholder farmers and rural communities. There is, therefore, an important opportunity for NbSs in terms of sustainable and deforestation-free palm oil production. Efforts are increasing to adjust the focus from holding the commodity (palm oil) or company responsible, to understanding where and how the commodity was produced and to produce it in a sustainable manner. These approaches focus on the entire commodity production landscape or jurisdiction, thereby holding the operating companies as well as other stakeholders responsible.

NbSs can support zero-deforestation agricultural commodities by assessing ways in which jurisdictions can show that agricultural commodities such as palm oil are produced sustainably and in compliance with the law. The concept is that by clearly defining jurisdictional sustainability and collecting information on associated key performance indicators, it will be possible to measure the sustainability of commodities. The provision of this information to consumers and traders allows them to purchase products from Indonesian districts that are performing well. This should encourage progress in districts where laws are upheld, forests are protected, and farmers are supported.

Districts where progress is less advanced can also improve land and forest management so that smallholders and other producers may benefit from the continuously growing markets for sustainable commodities.

Support can be provided to countries to focus on legality and sustainability in agricultural commodity production at the district and provincial level. This is the focus of Indonesia's Terpercaya Initiative, spearheaded by the European Forest Institute's EU REDD Facility and Inovasi Buni (Inobu). The Initiative's Indonesian name, *terpercaya*, means trustworthy. This reflects the aim of generating credible information and analysis, and building the understanding and trust needed to promote sustainability, trade and cooperation.

Terpercaya also seeks to support and inform national policies related to climate change and sustainability such as Indonesia's Nationally Determined Contribution under the Paris Agreement on climate change, and efforts to accelerate palm oil certification, particularly through the Indonesian Sustainable Palm Oil (ISPO) system. TThe Terpercaya Advisory Committee is composed of government, private sector and civil society stakeholders. The Initiative is funded by EU funds. The current successful participation of the Indonesian government and civil society may ensure future financial sustainability of the initiative once it has demonstrated measurable impacts and benefits.

The indicators (see Figure 4) that the Terpercaya Initiative uses to measure sustainability also align with the UN SDGs (SDGs) and promote values held by both Indonesia and consumer countries.

The plan is that the district-level data for each key performance indicator will be made available through a web-based platform that is easily accessible and user-friendly. The Terpercaya Initiative also collaborates with Transparency for Sustainable Economies (Trase), which is developing a comprehensive and visually engaging system for tracking Indonesia's palm oil sector based on diverse sources of publicly accessible data. The combination of the indicators and jurisdictional performance monitoring system provides incentives for district governments to improve their governance of land and forests, including through law enforcement, to ensure that deforestation and environmental degradation are reduced while economic growth is protected, and local communities are equitably engaged. At the same time, the private sector would benefit from the creation of a level playing field for all producers in a jurisdiction, while companies with commitments to sustainability may also benefit from access to production from smallholders as they are integrated into sustainable supply chains. Importantly, the Terpercaya indicators and jurisdictional performance monitoring system

may inform dialogues between the European Union and Indonesia regarding sustainable commodity production, thereby encouraging companies to source commodities from sustainable jurisdictions.

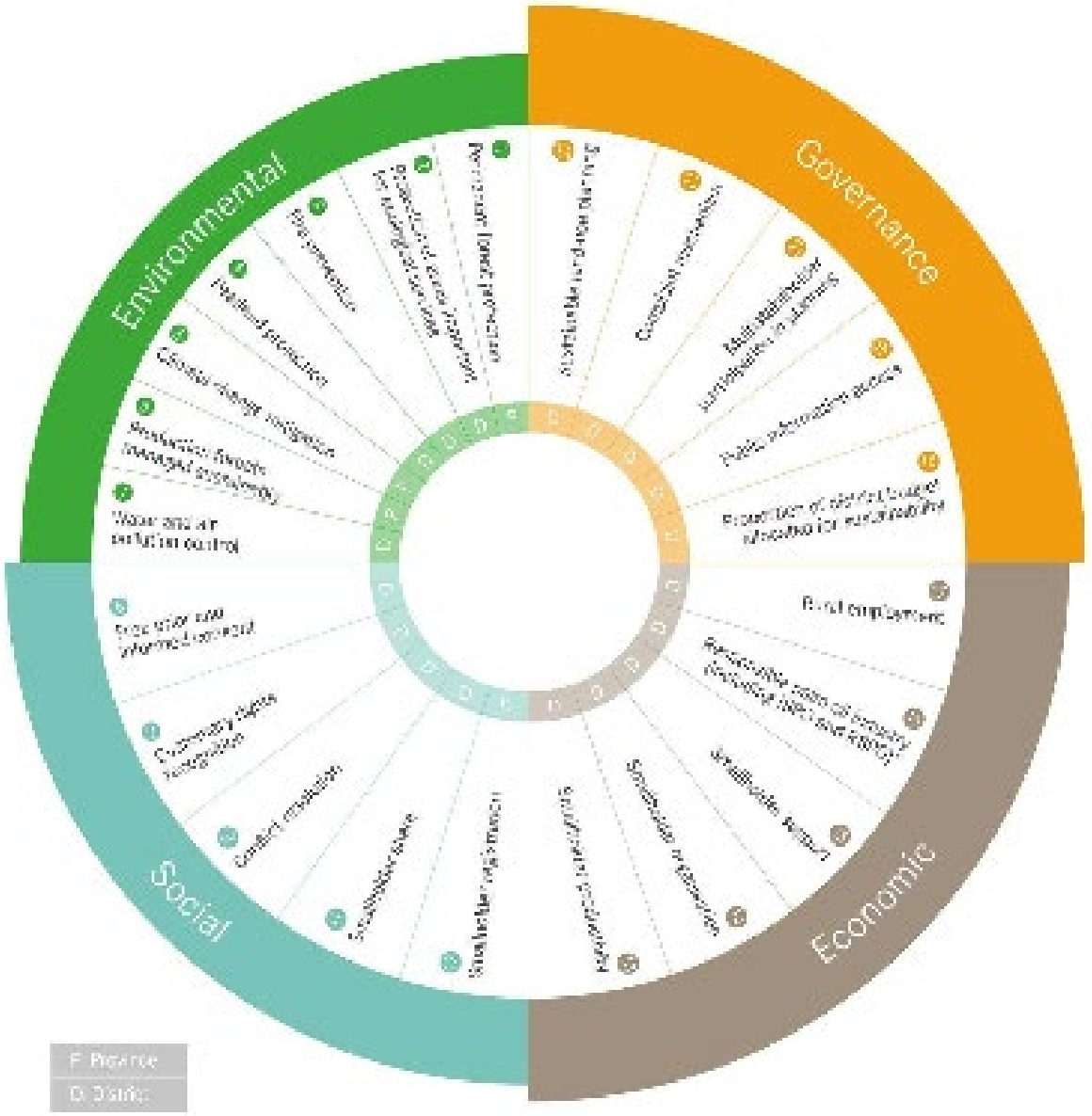


Figure 4: The 22 Terpercaya indicators to measure sustainability across environmental, social, economic and governance aspects. Source: EFI Terpercaya website.

The main factors behind the success of the Terpercaya Initiative appear to be: (1) strong participation of the Indonesian government and civil society; (2) the successful creation and adoption of indicators to measure sustainability promoting values held by both Indonesia and consumer countries; (3) ability to work at the district level and engage local communities equitably; and (4) the development of a performance monitoring system which creates trust and encourages companies to source commodities from sustainable jurisdictions.

Photo by Nazarizal Mohammad on Unsplash

3.2 FINANCING NBSs THROUGH DEBT-FOR-NATURE SWAPS IN THE SEYCHELLES

Financing instrument: Debt for nature swap, private philanthropical capital, loan capital

Impact: Ocean conservation and climate adaptation

Impact measurement: Protect 30 per cent of its ocean

Platform: Private trust engaging with multi-stakeholder platforms

On March 26, 2020, Seychelles announced the final details of its Marine Protection Areas Initiative, in service of its goal to protect 30 per cent of its ocean (from a previous baseline of just 0.04 per cent of its Exclusive Economic Zone), a project that has been in the works for about 10 years. In 2010 the government teamed up with TNC, the GEF and UNDP to come up with a deal to protect the country's ecological assets while allowing businesses that rely on ocean resources to continue for generations to come.

A wide-ranging public engagement process to develop an overall plan for the nation's seas kicked off in 2014, involving consultation with local citizens, businesses, scientists and agencies. By 2018, the Seychelles became the first ever country to successfully undertake a debt-for-nature swap to protect the world's oceans. Plans covering the first 16 per cent of the Seychelles' ocean were completed in 2018, with a further 10 per cent added in 2019. The most recent announcement marks the third and final milestone, bringing the total area protected to 410,000 km^2.

Under the deal, the Seychelles government used private philanthropic funding and loan capital raised by TNC's NatureVest conservation investment unit to buy back $21.6 million of its sovereign debt at a discount. It repays those loans to a specially created local trust, the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT). SeyCCAT is an independent private trust formed in 2016 that disburses blue grants funded by the debt conversion, and other recent financing opportunities in Seychelles, to support ocean conservation and implementation of the debt-for-nature swap. In return, the SeyCCAT repays the $15.2 million in loan capital over ten years. Over a twenty-year period, SeyCCAT will fund $5.6 million worth of marine conservation and climate adaptation activities. It will also give $3 million to an endowment that can fund similar activities in perpetuity.

The debt-for-nature swap in the Seychelles is a useful example of leveraging a country's assets as part of the blue economy sector – a comparative advantage for large ocean states. Such deals could also help provide crucial extra sources of conservation funding that might otherwise dry up during times of financial hardship. In the Seychelles, the president exempted businesses that fund conservation from paying taxes until September 2020, due to the sudden slump in tourism caused by the COVID-19 pandemic.

The success factors of the debt-for-nature swap in the Seychelles include: (1) a wide-ranging national engagement process to develop an overall plan for the nation's seas involving consultation with local citizens, businesses, scientists and agencies; (2) a trusted partnership with TNC which helped raise the capital to buy back part of the Seychelles' debt at a discount; and (3) the creation of SeyCCAT to disburses blue grants funded by the debt conversion, and other recent financing opportunities in the Seychelles, to support ocean conservation and implementation of the debt-for-nature swap.

3.3 FINANCING NBSs THROUGH SUSTAINABLE TOURISM IN PROTECTED NATURAL AREAS IN LAO PDR

Financing instrument: PPP

Impact: Sustainable tourism in Dong Hua Sao National Protected Area in Champasak Province with NbT

Impact measurement: Poverty reduction

Platform: Multi-stakeholder platforms

Several negative impacts and problems have been encountered in the tourism sector such as the loss of integrity of tourism sites, pollution, conflict among stakeholders, 'overtourism', contemporary issues like climate change and, more recently, the refugee crisis (Telfer & Sharpley, 2015). Overtourism can be defined as "the impact of tourism on a destination, or parts thereof, that excessively influences perceived quality of life of citizens and/or quality of visitor experiences in a negative way" (UN World Tourism Organization, 2018). Indeed, visitors and recreation pose the third most important threat to World Heritage Sites (IUCN, 2017), impacting more than 60 per cent of such sites.

The use of NbSs as a framework for sustainable tourism in protected natural areas could support countries to alleviate some of these challenges. Durable financing is an important topic for protected areas especially as many have witnessed declining support from traditional financial streams.

Through the establishment of transparent and effective PPPs, tourism development can be an effective strategy in protecting biodiversity, mitigating and adapting against climate change, and reducing poverty. Instead of simply making donations to a community school or clinic (while this would be welcome), the opportunity for private sector partners is to develop local skills and expertise and maximize benefits through marketing, outreach and appropriate site development. Sustainable tourism in protected natural areas could be considered through four aspects (Mandić, 2019):

01

Governance, management and conservation: An example would be management frameworks involving local communities and civil society organizations and supported by enabling government policies to mainstream socioeconomic development of local communities and environmental concerns in tourism development within protected areas.

02

Capacity-building: For example, with the variety of stakeholders involved in tourism development in protected areas such as local businesses, commercial tour operators,communities, planners, scientists, individuals and investors, there is continuous need for learning and improvement.

03

Visitor management and monitoring: for example, visitation models in which the inherent strengths of management and monitoring are retained and modified by consideration of visitor motivation and mobilization to inspire and realize satisfactorily large participation in activities that preserve protected area biodiversity and foster place loyalty.

04

Sustainable financing and Green infrastructure: Due to the inability to self-finance, the threat that many protected areas will become 'paper parks' is almost always present. For example, financial sustainability is irrelevant if the core aspects of a protected area are not maintained, yet core aspects or protected areas cannot be maintained in the absence of sufficient financing. The valuation of visitors' services and preferences can be estimated by the willingness to pay.

A 2019 World Bank report estimates that in the next decade, nature-based tourism could grow in Lao PDR from 4.3 per cent of 2019 GDP and 3.5 per cent of jobs, to the global average of about 10 per cent of GDP and 10 per cent of jobs. This opportunity is based on developing policies that enable responsible private investment and effective conservation as well as quality nature-based tourism products that respond to international demand. Furthermore, the report found that tourism has the potential to become the main foreign exchange earner, and nature-based tourism could eventually be the biggest rural employer in the country. The study also found that nature-based tourism development can lead to significant increases in overall income and poverty reduction in communities adjacent to, or within, protected areas.

A case study was made to assess how nature-based tourism leads to income growth and poverty reduction in communities living in or around protected areas in Lao PDR. The study involved a village located in the Dong Hua Sao National Protected Area in Champasak Province and employing NbT. The supply of tourism-related services was divided into two categories: (1) community-based tourism through services supplied in the village (homestay, catering, souvenirs), and (2) PPP services supplied in the Dong Hua Sao National Protected Area (guiding, portage, cooking, and so on) through Green Discovery.

The village's two different tourism projects were compared and the study found that poverty fell from 39 per cent to 26 per cent due to the nature-based tourism businesses that partnered with the community (Green Discovery). Founded in 2001 and opened in 2012, the Green Discovery project is a private partnership operated by a tour company with over 80 village members and consists of zip lines and trekking near steep waterfalls. Green Discovery offers packages of two or three days, with the tour starting and ending in Pakse. Accommodation is in treehouses in the forest; Green Discovery's customers do not use any homestay facilities.

The PPP appears to promote the full and equitable participation of all individuals in the community. It also brought three times more revenue to the village (75 per cent versus 25 per cent) than the community-based tourism project generated over the last seven years. In 2017, Green Discovery brought 2.5 times more income to the village than did the community-based tourism activities. Furthermore, the number of beneficiaries of the Green Discovery partnership is higher than those involved in community-based tourism. The increase of earnings from tourism allows villagers to diversify their sources of income (for example, as a hedge against fluctuations in the coffee market price) and be more resilient to climate hazards.

The main contributing success factors for Green Discovery's PPP compared with the more traditional community-based tourism approach are threefold: (1) the inclusive approach and high participation of the villagers; (2) the use of treehouses in the forest (green infrastructure); and (3) a variety of tailored packages. These in turn link to all four aspects of sustainable tourism in protected areas: governance, capacity-building, monitoring and financing and green infrastructure in protected areas.

3.4 FINANCING NBSs THROUGH SUSTAINABLE OCEAN CITIES SUCH AS APIA URBAN AREA, SAMOA

Financing instrument: Public Funds, GCF

Impact: Climate resilience through integrated watershed and flood management

Impact measurement: Flood-proofed infrastructure and upgraded downstream drainage

Platform: Multi-stakeholder

Ocean cities can be described as areas where seascapes and urban landscapes converge, where natural environments and built-up areas near coastlines intersect, and where development has profound impacts on both terrestrial and marine ecosystems. Thus, ocean cities are at the forefront of positive action on climate change mitigation and adaptation. Nature-based solutions in Pacific Ocean cities can also support efforts to build resilience through integrating disaster risk reduction (DRR) and CCA.

As coastal marine habitats have always been essential for human life, unplanned urban expansion into marine and coastal ecosystems is a pressing development challenge that countries in Asia-Pacific cannot afford to ignore. These unique habitats provide coastal protection, food, building materials for urban livelihoods, and lesser-known services such as nutrient cycling and pollution filtration.

NbSs can support Pacific Ocean cities through strategically and carefully conserving and designing blue and green urban spaces into the fabric of urban settings. These should be based on the preservation of interlinked ecological processes and ecosystem services both on land and in the ocean. These can be further strengthened by social and cultural considerations, as the health of land and marine ecosystems – as well as the health of the ecosystem services derived from them – are intimately connected to individual and societal well-being in terms of physical, psychological, and cultural health.

Nature-based solutions can also support Pacific Ocean cities through building on existing (or creating new) multi-stakeholder partnerships that also engage the private sector, aligned with customary practices. To advance implementation, buy-in from local communities is fundamental, as is engagement from national and local governments, local organizations and the private sector.

The creation of incentives appealing to different stakeholders could be used to promote cooperation. PPPs could be explored to support waste management, green infrastructure and technological innovation, clean energy, urban livelihoods, and urban renewal. This could be looked at further by Pacific governments, provided such partnerships are strategic and ensure that communities are meaningfully involved in the process.

Furthermore, concrete action on NbSs can strengthen key services in Pacific Ocean cities such as regulating services, provisioning services, cultural services and supporting services. Leveraging climate finance for ocean-focused sustainable urban development is an opportunity to protect vital carbon sinks and build resilience against climate change impacts in ocean cities. The building of resilience through NbSs for flood management is a major opportunity.

Samoa has been heavily impacted by increasingly severe tropical storms. In response, the government has adopted a programmatic approach to address the issue of climate change-induced flooding (UNDP Project Portal). The Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa project enables the Samoan government to reduce the impact of recurrent flood-related impacts in the Vaisigano river catchment. The river flows through the Apia Urban Area (AUA), Samoa's primary urban economic area. The project is funded by the Green Climate Fund for a total of $65.7 million, of which $57.7 million comes directly from the GCF and $8 million from co-financing from the Government of Samoa. The project has three main outputs:

OUTPUT 1 strengthening capacities and mechanisms for an integrated approach to reduce flood-related risks in place;

OUTPUT 2 key infrastructure in the Vaisigano river catchment is flood-proofed to increase resilience to negative effects of excessive water; and

OUTPUT 3 drainage in downstream areas upgraded for increased regulation of water flows.

The primary direct beneficiaries include approximately 26,528 people in the Vaisigano river catchment who will benefit from upgraded infrastructure and drainage downstream, integrated planning and capacity-strengthening (including planning for flooding caused by extreme weather events), and flood mitigation measures (especially river works and ecosystems solutions in the Vaisigano river catchment). A further 37,000 people will benefit indirectly. The economic net present value of the proposed investment project is estimated to reach approximately $15.6 million, and to yield an economic internal rate of return of approximately 15.5 per cent (UNDP Project Portal). Certainly, leveraging climate finance for ocean-focused sustainable urban development is an opportunity to protect vital carbon sinks and build resilience against climate change impacts in ocean cities.

The main success factors in the Integrated Flood Management to Enhance Climate Resilience

of the Vaisigano River Catchment in Samoa project are (1) the adoption of a programmatic approach to address flooding and (2) tackling key infrastructure weaknesses to increase resilience, achieve flood-proofing and increase the regulation of water flow.

3.5 FINANCING NBSs THROUGH ACTIONS IN THE LAND-USE SECTOR SUCH AS REDD+ RBPs IN INDONESIA

Financing instrument: Public Funds, GCF

Impact: Strengthening of National REDD+ Strategy and enhancing Social Forestry Programme and Forest Management Units

Platform: Multi-stakeholder

To meet targets for the AFOLU sector, approximately 56 countries have made an explicit link or include a reference in their first NDCs to REDD+ or "reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries".

UNFCCC decision 9/CP.19 encouraged the GCF to play a key role in collectively channeling adequate and predictable REDD+ RbPs in a fair and balanced manner, considering different policy approaches, while working to increase the number of countries in a position to obtain and receive payments. The GCF operationalized its pilot programme on REDD+ RbPs in late 2017, having launched a request for proposals for a total amount of $500 million. At the time of writing, eight countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Indonesia and Paraguay) have had REDD+ results approved by the GCF as part of this pilot programme for approximately $497 million. The consultation process for a subsequent phase of the pilot is ongoing but it remains uncertain what the future is and if additional conditionalities will be applied. Nevertheless, a lack of access to the GCF REDD+ RbP resources could cause a risk to NDC implementation.

Beyond accessing RbPs, countries engaging in the REDD+ process have also been able to access GCF funds for the implementation of REDD+ through the forests and land use GCF results area. This may be of interest to countries seeking finance to implement NDCs and incorporate NbSs by considering the wider environmental, social and economic co-benefits,

including gender-sensitive development impacts of the key mitigation activity submitted in a project proposal to the GCF under the forests and land use results area.

More than 74 per cent of Indonesians living in poverty depend on ecosystems for their livelihoods. Depletion of these services would have a drastic impact on their livelihoods and widen the inequality gap. The GCF approved Indonesia's request for REDD+ RbPs at its 26th Board in August 2020, thereby recognizing Indonesia's REDD+ results for 2014–2016, with a total volume of 20.25 million tonnes of carbon dioxide equivalent. This amounts to $103.8 million. Two key initiatives identified as contributing to REDD+ emissions reductions for 2014–2016 are the Moratorium Termination of the Granting of New Permits and Perfecting Natural Primary Forest and Peatland Management and the Social Forestry programme.

The Moratorium, introduced in 2011, stops the issuance of new concessions in primary forests and peatlands. Through this Moratorium, 66 million hectares of natural forests and peatlands are legally protected from planned deforestation activities. According to Wijaya and others (2017), the Moratorium has the greatest potential of all Indonesia's mitigation policies. If it is extended to 2030 in its present form (which should now be the case, having been made permanent in 2019) it could reduce emissions by nearly 200 million tonnes of CO_2eq. The Moratorium is an opportunity for Indonesia to improve its forest governance. It is further supported through other initiatives that contribute to forest land and resources planning, decentralized forest management, and law enforcement, including tools such as forest management units and the Social Forestry Programme *(perhutanan sosial)*. It is included in the Ministry of National Development Planning's (BAPPENAS) National Medium-Term Development Plan for 2015 to 2019. Its overall objective is to reduce poverty among forest dependent people while reducing deforestation and forest degradation, improving land management and conserving forests and valuable ecosystem functions. This programme targets the adjudication, demarcation and transfer of 12.7 million hectares of degraded forest land (i.e., 10 per cent of the total state forest land), to communities for sustainable forest management.

Social forestry in Indonesia represents a significant shift in the role given to communities in forest management, from none officially prior to 1990, to in recent years benefitting from a range of regulations that support the role of communities in forest management through provision of access, management and/or ownership rights to forest resources and forest land. The programme involves selecting, demarcating and registering access and/or ownership rights, as well as supporting the development of economic activities compatible with existing forest cover and land status. As such, the Social Forestry Programme is seen as a key initiative to support the implementation of the various policies and regulations that the government has issued to improve community access rights to the forest estate, including under a community empowerment programme which consists of six complementary social forestry schemes aimed at different types of forests and organizations of forest users, and different uses.

The Government of Indonesia will use the proceeds from these RbPs to invest in activities that continue to build and strengthen its REDD+ architecture and thereby further strengthen

government capacity to coordinate and implement REDD nationally and subnationally through the implementation of the country's national REDD+ action strategy, which is aligned with its NDC. RbP proceeds will also be used to further extend and enhance Indonesia's Social Forestry Programme and Forest Management Units (FMUs), two priority programmes that contribute to sustainable forest management and rehabilitation, as well as community empowerment and poverty alleviation. The Social Forestry Programme is supported with a $46 million REDD+ RBP from the GCF, while another $46 million will support the FMUs. It is expected that an estimated 200,000 households will benefit from the project's support in the Social Forestry Programme.

The main success factors for Indonesia's REDD+ RBP are: (1) successful reduction of emissions from the LULUCF sector, (2) implementation of the REDD+ phases, and (3) identifying the key programmes that contributed to the reduction of emissions (the Moratorium and the Social Forestry programmes) and continuing to invest in them through the proceeds of the RBPs.

Photo by Maria Ines Simonini ©

4 GAPS, BARRIERS AND EMERGENT AND CURRENT OPPORTUNITIES

The examples above have shown that there are several opportunities to finance NbSs to implement NDCs. In the absence of a dedicated convention, actions for nature-based solutions will have to work across international conventions such as the UNFCCC, the UN CBD and the UNCCD, link to countries' SDGs, and seek finance through instruments that support these conventions and the work on SDGs. A review of the current landscape indicates that more can be done to bring NbSs and their financing into the implementation of NDCs. Nonetheless, the selected case studies show that it is possible to finance and implement NbSs with climate change mitigation, CCA and DRR objectives both directly and indirectly. This section identifies some gaps, barriers and emergent and current opportunities to include NbSs in NDCs and provide financing.

Photo by Zinko Hein on Unsplash

4.1 GAPS

While many public and private sector pledges on NbSs are being implemented, there is little publicly available information on monitoring (including financial monitoring) and impact to determine the extent to which these pledges have been successfully implemented. Key details are also missing such as the type of NbS, species selected (i.e., native or non-native), the previous use of the land and the involvement of local communities (Seddon and others, 2021). This absence could reflect a lack of dedicated financial resources to do so, the recent development of the NbS concept, the challenge in identifying the interlinkages between the climate and socioecological systems, the lack of a clear implementation framework and understanding of how NbSs impact climate change adaptation and mitigation in an interconnected manner, and/or combinations of these factors. Countries themselves may also still be trying to better understand not only the NbS concept, but also how to integrate it into their NDCs. The UNFCCC Enhanced Transparency Framework and Biennial Transparency Reports could be a start to collecting this type of information and data more consistently.

4.2 BARRIERS FOR ENGAGEMENT/INVESTMENT

A recent study shows that political, institutional and knowledge-related barriers prevent NbS uptake and implementation in urban areas (Sarabi and others, 2020). Arguably, several of these barriers identified in a city context may apply to NbSs in general.

The study identified 15 barriers from the literature and expert interviews: (1) lack of political will and long-term commitment; (2) lack of sense of urgency among policymakers; (3) lack of public awareness and support; (4) risk aversion and resistance to change; (5) silo mentality; (6) misalignments between short-term plans and long-term goals; (7) lack of supportive policy and legal frameworks; (8) lack of design standards and guidelines for maintenance and monitoring; (9) lack of skilled knowledge brokers and training programmes; (10) functionality of performance uncertainties (i.e. lack of information regarding the benefits of NbSs); (11) perceived high cost; (12) lack of available financial resources; (13) lack of financial incentives); (14) property ownership complexities; and (15) space constraints.

A supportive political and regulatory environment to identify clear policies and measures is essential to enable various stakeholders to finance NbSs, and for countries to prioritize such investments. The lack thereof could represent a key barrier for various types of investments in NbSs for NDCs (e.g., public, private, blended).

4.3 EMERGING OPPORTUNITIES

The COVID-19 pandemic is a reminder of the interconnection between our social and natural worlds. This has created a sense of urgency, but also a sense of hope that what we are going through collectively may finally be a turning point to increase our efforts to scale up ambition and the impacts of NDCs, including through the implementation of NbS actions. Three emerging and current opportunities that can be considered to leverage finance for the implementation of NbSs in the context of NDCs.

A first emerging opportunity to consider is the Global Ecosystem-based Adaptation (EbA) Fund, launched in March 2021. The Fund is open for contributions of $50,000 to $250,000, with no specified or prioritized regional or country focus. The maximum project duration is thirty-six months. EbA can be regarded within the wider umbrella of NbSs and harnesses the power of nature to increase the resilience of communities against the escalating impacts of climate change. By providing rapid and targeted financial support to innovative and catalytic projects, the Global EbA Fund will address specific gaps in policy and technical knowledge to maximize the impact of this vital NbS on a global scale. Led by IUCN and UNEP, the Global EbA Fund is a quickly deployable mechanism for supporting innovative approaches to EbA. The Fund aims to encourage catalytic initiatives to help overcome barriers for upscaling EbA. Through its International Climate Initiative (IKI), the Federal Environment Ministry of Germany has committed 20 million euros to the Fund. In line with current IKI policies, the Fund will not provide grants directly to government partners but rather to organizations working directly with national, subnational and local governments to create an enabling environment for EbA and the implementation of strategic partnerships.

Secondly, the GEF's SFM fund and the ability of national governments to directly decide what type of project they would like to submit to the GEF – perhaps via a pilot initiative on NbSs to enhance NDC implementation cross-cutting through its two main streams of SFM and forest and landscape restoration – could be considered. Likewise, the development of a clearer framework to support NbSs in the GCF could also be explored.

Finally, private sector and philanthropic organizations are also increasingly seeking to support, finance and invest in NbSs, which is another avenue to consider for the design and implementation of NbSs in NDCs in the Asia-Pacific region.

It is important to consider the scale of these different emerging opportunities. For example, the EbA targets small-scale contributions, while the GEF, GCF or PPPs can target macro-scale implementation such as the tourism sector and sustainable palm oil production as illustrated by some of the case studies presented in this report.

5 RECOMMENDATIONS TO CAPITALIZE ON OPPORTUNITIES TO FINANCE NBSs IN NDCs IN THE ASIA-PACIFIC REGION

Following the identification of gaps, barriers, and emergent and current opportunities to include NbSs in NDCs and finance them, this section makes recommendations for UNDP, UNDP Country Offices and UNDP partners to better understand the actions that can be taken in the design and implementation of NbS projects and programmes in the context of NDCs. Below are eight action tracks and a stepwise process to capitalize on opportunities to finance NbSs in NDCs in the Asia-Pacific region. The six steps address the recommended process for advancement on all eight action tracks.

Photo by Ming Han Low on Unsplash

5.1 STEPWISE PROCESS TO CAPITALIZE ON NBS FINANCE OPPORTUNITIES IN NDCs:

UNDP is uniquely positioned to support countries to capitalize on opportunities to finance NbSs in NDCs through (for example, but not exclusively) its existing programmes such as the NDC support programme, the Biodiversity Finance Initiative (BIOFIN), the Climate Promise, the Forest, Climate and Sustainable Development programme, the Green Commodity's programme, the Climate Change and Adaptation programme, and the Ecosystems and Biodiversity programme. Country Offices can leverage their programme portfolio to create a viable pipeline of nature-based programmes and unlock public and private financing. The following stepwise process can be put forward for UNDP Country Offices to capitalize on opportunities to finance NbSs in NDCs in the Asia-Pacific region:

STEP 1 Undertake mapping of current projects on NbS in NDCs in Asia-Pacific countries by UNDP and others.

STEP 2 Undertake mapping of available (country-specific) financial resources for NbSs in each country at various levels (e.g., from the municipal level to the national level).

STEP 3 Combine the above with information on country targets in NDCs (submitted and revised) and identify the combination of projects and funding sources that can easily deliver on NDC targets.

STEP 4 Use this as a basis to identify major gaps for nature-based solutions impact, and leverage different finance types (e.g., public, private, mixed, private foundations).

STEP 5 Develop a project pipeline and complementary strategy (a UNDP 'pitch' or 'offer' to plug the gaps identified in Step 4, including the design of transparent financial and impact measurement monitoring of NbS implementation.

STEP 6 Bring projects and financiers together by setting up networks and/or platforms in the Asia-Pacific region for deal brokering and south-south exchanges to facilitate learning between countries on NbSs and their finance opportunities. This can be done by including private sector, public sector, civil society organizations and foundations in such exchanges.

The stepwise process presented above represents a service line that can subsequently be integrated (or *vice versa*) into the context of UNDP's four offers on (1) climate strategy planning, (2) institutional strengthening, (3) positioning of different financing instruments (including the work on Integrated National Financing Frameworks (INFF) and (4) cross-cutting issues.

In terms of climate strategy planning – and more specifically on implementation of financing frameworks – UNDP could provide policy advice to countries on designing and implementing NbSs for NDCs at the national and subnational level under the umbrella of the Climate Promise. The six steps presented above should be followed with the objective of building a domestic market for NbSs – work that should be done together with government counterparts (regulators), private sector investors, entrepreneurs and other relevant stakeholders to support institutional strengthening and capacity-building within the country and the region.

The stepwise process provides UNDP with a structured framework for the provision of unique expert support to countries in terms of identifying and positioning different financing mechanisms. The projects and programmes that will be designed should carefully integrate and build on UNDP's unique experience and leadership on crosscutting themes such as social inclusion, poverty alleviation, safeguards, stakeholder engagement, gender, and grievance redress mechanisms. The six steps need not necessarily be implemented in the sequence presented here, nor should they be executed in isolation, but can be linked to core Country Office programming.

Regarding the gaps, barriers and emerging opportunities identified in section 4, UNDP can support countries in designing transparent financial and impact measurements of NbS implementation, as well as work with countries to develop a supportive political and regulatory environment to identify clear policies and measures to finance and implement nature-based solutions.

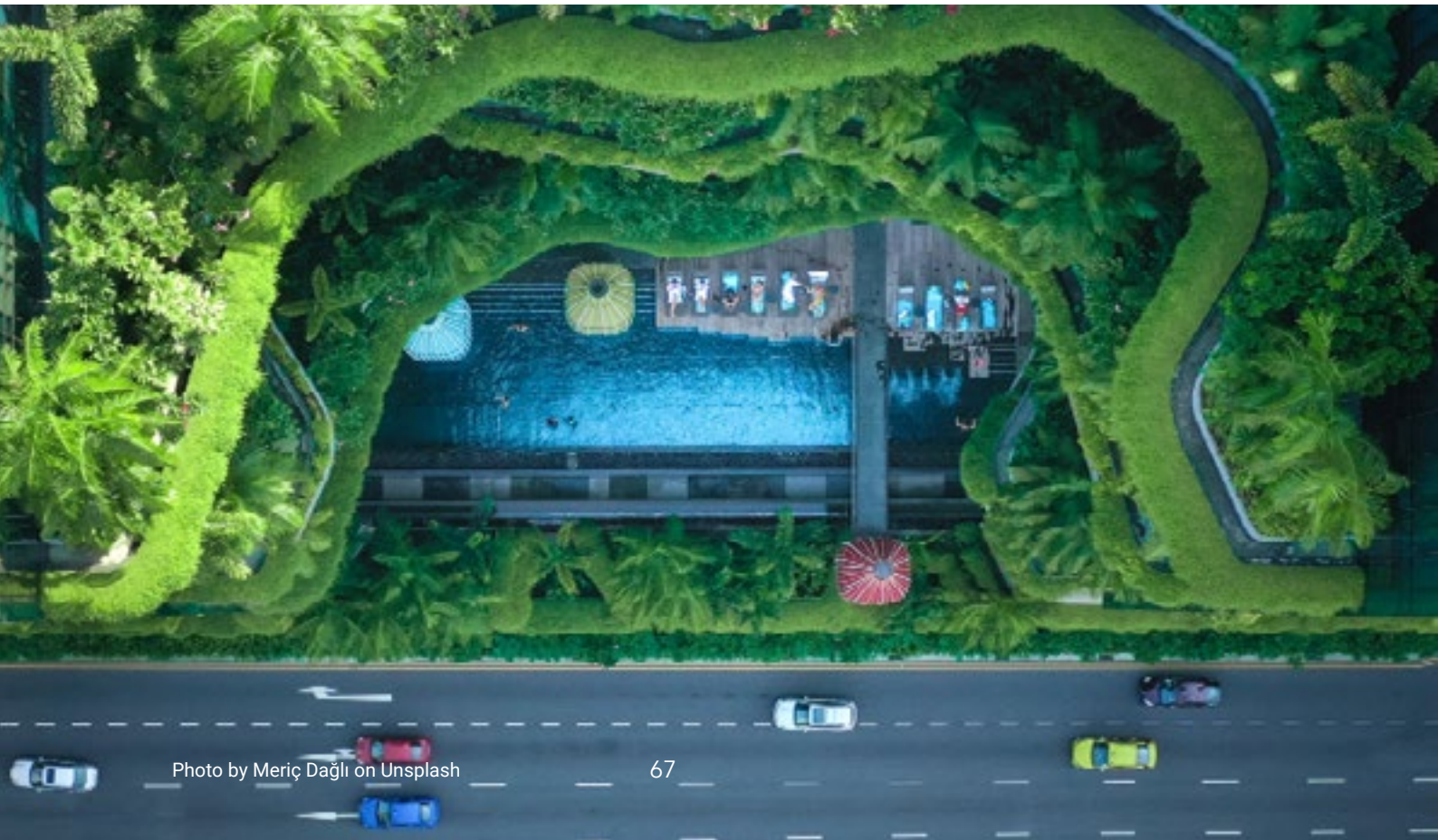


Photo by Meriç Dağlı on Unsplash

5.2 ACTION TRACKS TO CAPITALIZE ON NBS FINANCE OPPORTUNITIES IN NDCs

More specifically, and building on the six steps outlined above, UNDP and other partners could support countries through the following eight broad action-tracks:

1. Integration of NbSs into climate and development policy and budgeting frameworks

- Governments, NGOs and industrial coalitions can, in partnership, develop interdisciplinary capacity-strengthening programmes for ministries to design NbSs and financing options.
- Planning units in government need to translate NbSs into actionable priorities within domestic policy and programmatic commitments. This requires work with sectoral ministries to develop these NDC priorities into actionable programmes that are integrated into the planning, budgeting and monitoring frameworks and processes.
- International agencies supporting governments need to apply tools to integrate NbSs into SDG- relevant development and financing frameworks and develop mechanisms for reporting on progress.
- UNDP is also uniquely positioned to engage in discussions with funds such as the GEF, the GCF and other financial institutions and banks to delineate a clear climate finance architecture for the implementation of NbSs in the framework of NDCs. Integration of the interlinkages among NbS climate action and the wider socioecological system is a key ingredient for UNDP to add when supporting countries to capitalize on opportunities to finance and successfully implement NbSs in NDCs.

2. Foster the development of intersectoral collaboration for scaling up NbSs in NDCs

- Use existing platforms of governments and international agencies or set up networks and/or platforms in the Asia-Pacific region for South-South exchanges to facilitate learning among countries on NbS implementation in the context of NDCs and finance opportunities.
- City administrations can take the lead in designing and implementing urban EbA by working across city administrations, urban development ministries and land-use ministries (i.e., intersectoral collaboration, often across cities). This is fundamental as cities often depend on ecosystems across regional authorities. This means that a comprehensive

umbrella programme could be composed of a combination of various financing instruments that require bundling of small projects together across different cities to ensure implementation.

- Interministerial task forces or working groups could be set up across relevant ministries (e.g., forestry, agriculture, water, finance, and infrastructure in countries to design and scale-up NbSs in NDCs.

- Foster the above points across scales (national, sub-national, local) in countries and between countries.

3. Strengthening and sharing the evidence bases for NbSs in Asia -Pacific

- Governments and international agencies such as UNDP can mobilize regional, national and subnational scientific institutions with strong potential to systematically prepare baseline observations for NbSs and observe, track and monitor the impacts as NbSs are rolled out (including financial flows). Such policy/research partnerships may help to inform future policy and decision making.

- Governments and international agencies should consolidate and take stock of the information base of NbS-related initiatives by, for example, using a resource such as the Policy Platform of the Nature-based Solutions Initiative at the University of Oxford. The information can then feed into national reporting processes to ensure that NbSs are factored into the National Communications and SDG Voluntary National Review (VNR) processes.

- Undertake mapping of current projects on NbSs in NDCs in Asia-Pacific countries by UNDP and others and provide the information in the public domain. This could be done, for example, by setting up a specific partnership with the NbS Initiative of the University of Oxford to use its interactive evidence platform. The platform links NbSs to climate change adaptation outcomes based on a systematic review of the peer-reviewed literature.

4. Convening and mobilizing inclusive multi-stakeholder coalitions/ platforms to bring investors and NbS practitioners together

- To scale up NbSs in NDCs, it is important to include financiers and investors to foster intersectoral collaboration and impact on the ground.

- Convening and mobilizing inclusive multi-stakeholder coalitions/platforms to bring investors and NbS practitioners together creates the opportunity to, for example, broker financing deals, undertake PPP structuring, and decide on incentives for private

investment that governments can put into place.

- Discuss the need for certifications with industry coalitions and normative bodies to inspire trust, coupled with a better understanding of the need to leverage more finance and to do so on a longer-term basis.
- International agencies and government departments (such as labour ministries.) can build awareness of safeguards for social inclusion, as well as standards and norms to be upheld when implementing NbSs.

5. Mobilizing and optimising domestic public finance

- Undertake mapping of available (country-specific) financial resources for NbSs in each country at all levels (e.g., from the municipal level to the national level). A review of domestic resource mobilization schemes can help to identify new sources of finance through taxes and charges for various services that can then be deployed towards NbSs.
- Sensitize finance ministries on the business case of investing in NbSs through documentation of economic and non-economic benefits of NbSs (for example, as was done in Cambodia with the mapping of public finance for land-use finance).
- Explore various public finance options such as: EFTs (India), debt-for-nature swap possibilities (Seychelles), co-financing in the case of GCF and GEF project development (Samoa).
- Explore the opportunities of economies of scale for domestic public finance with the objective of utilizing such finance in the most efficient and effective way possible.

6. Catalysing international public finance

- Support nationally-designated authorities of the GCF to prioritize NbSs in country strategies.
- Explore opportunities to provide a clearer framework for the inclusion and financing of NbSs in the GCF, GEF, Pilot Programmes for Climate Resilience, and other financing windows.
- Support the continuation of REDD+ RBPs under the GCF.
- Explore opportunities for bilateral funding to finance NbSs in NDCs.

7. Getting the domestic and international private sectors to contribute and/or invest

- Support countries to engage with the various national and international private sector initiatives showcased in this report (for example, finance from private companies, debt-for-nature swaps and green and blue bonds, PPPs).
- Further explore relevant domestic and international private sector possibilities tailored to specific NbS actions described in NDCs (i.e., country specific opportunities).
- Support countries to engage in the carbon finance and carbon markets through initiatives such as the LEAF Coalition and others.
- Support countries to access finance for NbS actions through philanthropies.

8. Transparency and information sharing

- In combination with Action Track 3, an interactive platform could be designed and maintained by UNDP for information on country targets in NDCs (submitted and/or revised) and actions undertaken to implement them (including, for example, funding disbursed, species used, involvement of local communities and stakeholders) in Asia-Pacific (which could also be extended to other regions). To avoid duplication of efforts, this could be done by building on UNDP's Climate Promise Dashboard (which is currently only accessible internally in UNDP) and the World Resources Institute NDC Tracker.
- This information could also be shared through videos or articles targeting non-specialist individuals and organizations to disseminate the progress and impact that is being achieved by countries and the partners/stakeholders that support them.

6 CONCLUDING VISION

This report presents the importance and opportunity of financing NbSs for NDCs through public, private and philanthropic foundations. It also provides a regional mapping of existing examples of financing NbSs at scale across the perspectives of climate change mitigation (e.g., REDD+), CCA, biodiversity and DRR. It identifies gaps and opportunities as well as recommendations to scale up financing of NbSs under the NDCs.

The recommendations lay out various practical options and ideas for stakeholders and UNDP to take timely and tangible action to not only explore financing for NbSs in NDCs but also examine how to make nature-based actions sustainable by employing an interdisciplinary manner across stakeholders. In doing so, **it is imperative to recall that as an NbS, an action must sustainably provide one or more benefits for people while causing no loss of (and preferably, a gain in) biodiversity or ecological integrity compared to the pre-intervention state** (Seddon and others 2021).

This report is by no means exhaustive but rather serves as a reference and inspiration for interested stakeholders and UNDP to further support the design and implementation of NbSs in NDCs by enabling countries and local stakeholders to access various financing streams. In doing so, the hope is to achieve the co-benefit of minimizing the risk of other global pandemics, which are inherently linked to the erosion of our social and natural ecosystems.

Photo by Maria Ines Simonini ©

7 REFERENCES

Photo by Aleksandra Khoroshykh on Unsplash

Abram et al. (2019). Framing and Context of the Report. In H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, & N.M. Weyer (Eds.) *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate*[. Cambridge University Press, Cambridge, UK and New York, (pp. 73–129). https://doi.org/10.1017/9781009157964.003. https://www.ipcc.ch/srocc/chapter/chapter-1-framing-and-context-of-the-report/

Beasly et al. (2019). *Guide to including Nature in Nationally Determined Contributions – A checklist for information and accounting approaches for natural climate solutions.* https://www.conservation.org/docs/default-source/publication-pdfs/guide-to-including-nature-in-ndcs.pdf?sfvrsn=99aecda2_2

Brana-Varela J. & Lee D. (2016). *Early Reflections on the Implications of the Paris Agreement for REDD+.* Washington, DC.

Busch et. al (2020). Did India's ecological fiscal transfers incentivize state governments to increase their forestry budgets? *Environmental Research Communications,* 2:031006. https://iopscience.iop.org/article/10.1088/2515-7620/ab817c/pdf

Cassimon et al. (2011). The pitfalls and potential of debt-for-nature swaps: A US-Indonesian case study. *Global Environmental Change.* 21:93–102. https://conbio.onlinelibrary.wiley.com/doi/pdfdirect/10.1111/cobi.13540

Climate Watch (2019) Washington, D.C.: World Resources Institute. https://www.climatewatchdata.org.

FAO (2020) FAO's Blue Growth Initiative. Blue finance guidance notes. http://www.fao.org/3/ca8745en/ca8745en.pdf

Gianfrate G. and Peri M. (2019) The green advantage: exploring the convenience of issuing green bonds. *Journal of cleaner production* 219 (2019) 127-135. https://www.sciencedirect.com/science/article/abs/pii/S0959652619304019

Griscom *et al.* (2017) Natural Climate Solutions. PNAS. 114, 44, 11645-11650. https://www.pnas.org/content/pnas/114/44/11645.full.pdf

Griscom, et al. (2020). National mitigation potential from natural climate solutions in the tropics. Philosophical Transactions of the Royal Society B. *Biological Sciences,* 375,20190126. https://royalsocietypublishing.org/doi/10.1098/rstb.2019.0126

Hein et al. (2018). Deforestation and the Paris climate agreement: An assessment of REDD + in the national climate action plans. *Forest Policy and Economics,* 90, 7–11. https://www.sciencedirect.com/science/article/pii/S1389934117305373

Henders et al. (2018). Do national strategies under the UN biodiversity and climate conventions address agricultural commodity consumption as deforestation driver? *Land Use Policy,* 70: 580-590.
https://www.sciencedirect.com/science/article/pii/S0264837717300509

IPBES (2018). The IPBES *assessment report on land degradation and restoration.* L. Montanarella, R. Scholes, and A. Brainich (Eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 744 pages.
https://doi.org/10.5281/zenodo.3237392

International Union for Conservation of Nature World Conservation Congress (IUCN) (2016). *IUCN Resolution 69.*
https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2016_RES_069_EN.pdf

International Union for Nature Conservation (2017). *IUCN world heritage outlook 2—a conservation assessment of all natural World Heritage sites.*
https://portals.iucn.org/library/sites/library/files/documents/2017-053-En.pdf

Mandić A. (2019). Nature-based solutions for sustainable tourism development in protected natural areas: a review. Environment Systems and Decisions 39:249-268.
https://link.springer.com/article/10.1007/s10669-019-09718-2

Nature4Climate – Natural Climate Solutions World Atlas.
https://nature4climate.org/n4c-mapper/

ODI (2013) *The effectiveness of climate finance: a review of the Global Environment Facility.* Working Paper.
https://cdn.odi.org/media/documents/8632.pdf

Sachs et al. (2018). *SDG Index and Dashboards Report 2018.* Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).
https://www.sdgindex.org/reports/sdg-index-and-dashboards-2018/

Sarabi et al. (2020). Uptake and implementation of nature-based solutions: An analysis of barriers using Interpretive Structural Modelling. *Journal of Environmental Management,* 270 (2020) 110749.
https://doi.org/10.1016/j.jenvman.2020.110749

Secretariat of the Convention on Biological Diversity Global Biodiversity Outlook.
https://www.cbd.int/gbo1/annex.shtml

Seddon et al. (2019). *Nature-based Solutions in Nationally Determined Contributions: Synthesis and recommendations for enhancing climate ambition and action by 2020.* https://portals.iucn.org/library/sites/library/files/documents/2019-030-En.pdf

Seddon et al. (2021). Getting the message right on nature-based solutions to climate change. *Global Change Biology.* https://onlinelibrary.wiley.com/doi/10.1111/gcb.15513

Sheikh P. (2018). *Debt-for-Nature Initiatives and the Tropical Forest Conservation Act (TFCA): Status and Implementation.* Congressional Research Service report 7–5700. Library of Congress, Washington, D.C. https://sgp.fas.org/crs/misc/RL31286.pdf

Telfer, D. J. & Sharpley, R. (2015). *Tourism and development in the developing world* (2nd ed.). London, England: Routledge.

UNDP, WRI (2019). *Enhancing NDCs: A guide to strengthening national climate plans by 2020.* https://www.ndcs.undp.org/content/ndc-support-programme/en/home/impact- and-learning/library/ndc-enhancement-guide0.html

UNDP (2019). *Accelerating Climate Ambition and Impact: Toolkit for Mainstreaming Nature-based Solutions into Nationally Determined Contributions.* https://www.ndcs.undp.org/content/ndc-support-programme/en/home/impact-and-learning/library/nature-based-solutions-for-ndcs-toolkit-.html

UNDP (2021). Considerations for integrating Nature-based Solutions into Nationally Determined Contributions: Illustrating the potential through REDD+. https://www.undp.org/content/undp/en/home/librarypage/environment- energy/ecosystems_and_biodiversity/Consideration-for-Integrating-Nature-Based-Solutions-in-Nationally-Determined-Contributions-Illustrating-the-Potential-Through-REDD.html

UNDP Climate Promise Progress Report (2021). United Nations Development Programme. https://www.undp.org/sites/g/files/zskgke326/files/2021-05/undp-climate-promise-progress-report-april-2021.pdf

United Nations Framework Convention on Climate Change (UNFCCC). (2010). *Decision 1/CP.16. The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention.* https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf

United Nations World Tourism Organization, Centre of Expertise Leisure, Tourism & Hospitality, NHTV Breda University of Applied Sciences, and NHL Stenden University of Applied Sciences (2018). "Overtourism"? - Understanding and managing urban tourism growth beyond perceptions (Executive Summary). https://www.e-unwto.org/doi/pdf/10.18111/9789284420070

World Economic Forum (2020). *Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy.*
http://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf

World Economic Forum (2020). *The global risks report 2019.*
https://www.weforum.org/reports/the-global-risks-report-2019

World Wide Fund for Nature (2020). *Bankable nature solutions.*
https://wwf.panda.org/discover/our_focus/finance/bankable_nature_solutions/

Zen, F. (2018). Public–Private Partnership development in Southeast Asia. ADB *Economics Working Paper Series*, No 553.
https://www.adb.org/sites/default/files/publication/444631/ewp-553-ppp-development-southeast- asia.pdf

CASE STUDY 1: ZERO-DEFORESTATION COMMODITIES AND PALM OIL - INDONESIA

Photo by Nazarizal Mohammad on Unsplash

WHY ARE NATURE-BASED SOLUTIONS IMPORTANT IN THE CONTEXT OF ZERO-DEFORESTATION COMMODITIES?

Palm oil is the dominant oil used in food in Africa and Asia, and about half the people in the world rely on palm oil as part of their diets. As the global population continues to grow, palm oil's role in meeting global food demand will increase. Furthermore, because palm oil plantations drive national economic development and provide jobs, it is a vital source of employment in Indonesia and Malaysia. The industry also contributes to the development of remote areas via provision of infrastructure including roads, hospitals and schools.

For many people, however, palm oil, along with other agricultural commodities, has become synonymous with images of biodiversity loss, tropical deforestation and social conflict. In terms of biodiversity loss, the tropical areas suitable for palm oil plantations are often rich in biodiversity (see Figure 1 below). Palm oil production affects at least 193 threatened species, according to The IUCN Red List of Threatened Species. A small number of species can benefit from the presence of palm oil plantations, including species of wild pig, rodents and some snakes.

Regarding deforestation, the way plantations are currently established and managed is often damaging to the environment. The expansion of palm oil plantations into natural areas is responsible for greenhouse gas emissions from peat drainage and deforestation. It also contributes to regional smoke haze and water pollution. In terms of social conflict, the palm oil industry can have negative impacts on local communities as in some cases their loss of access to forests may not be sufficiently compensated by economic gains from palm oil cultivation. Human-wildlife conflict may also increase displacement of species such as tigers and orangutans when forests are cut for palm oil. Deforestation can also result in human and animal casualties. Due to high labour requirements, palm oil expansion can also lead to labour shortages for local food production.

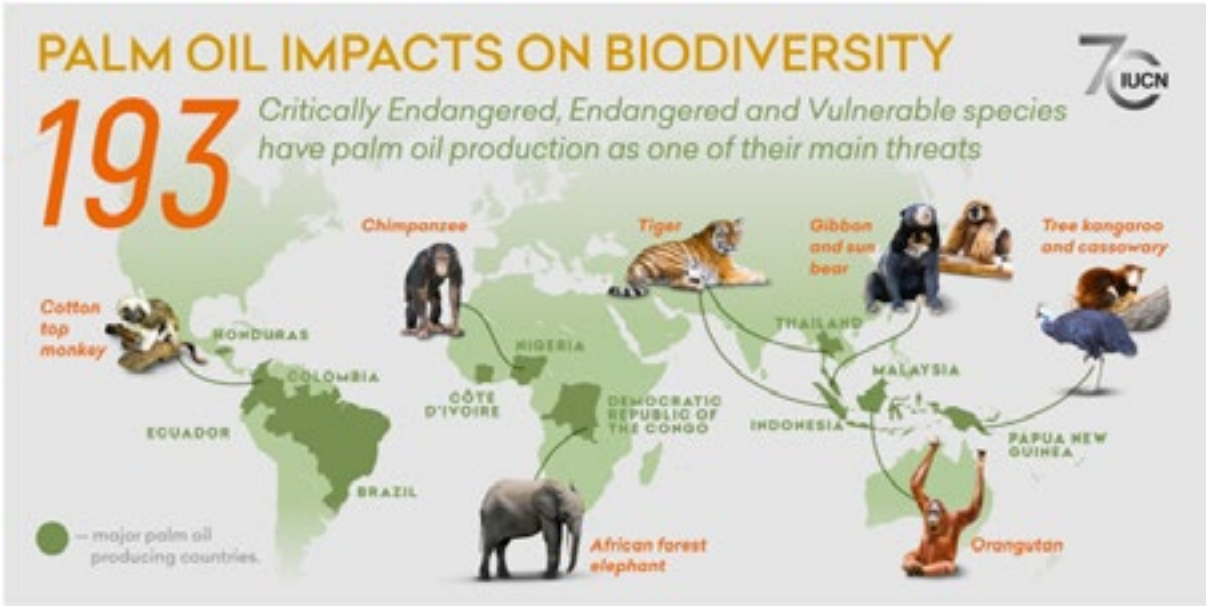


Figure 5: Palm oil impacts on biodiversity - IUCN report 'Palm oil and biodiversity' June 2018.

At the same time, producers and governments in the tropics often view palm oil as an important engine for economic growth and poverty reduction, especially for smallholder farmers and rural communities. There is, therefore, an important opportunity for NbSs in terms of sustainable and deforestation-free palm oil production. Efforts are increasing to adjust the focus from holding the commodity (palm oil) or company responsible, to understanding where and how the commodity was produced and to instead produce it in a sustainable manner. These approaches focus on the entire commodity production landscape or jurisdiction, thereby holding the operating companies – as well as other stakeholders – responsible.

Photo by Keyur Nandaniya on Unsplash

HOW CAN NBSs SUPPORT ZERO-DEFORESTATION COMMODITIES?

NbSs can support zero-deforestation agricultural commodities by assessing ways in which jurisdictions can show that agricultural commodities such as palm oil are produced sustainably and in compliance with the law. The concept is that, by clearly defining 'jurisdictional sustainability' and collecting information on associated key performance indicators, it will be possible to measure the sustainability of commodities. Providing this information to consumers and traders allows them to purchase products from Indonesian districts that are performing well. This should encourage progress in districts where laws are upheld, forests are protected, and farmers are supported. Districts where progress is less advanced also can improve land and forest management so that smallholders and other producers may benefit from growing markets for sustainable commodities.

Measuring jurisdictional sustainability can promote several global and local benefits, as illustrated in the Table 4 below.

Table 4: Promoting global and local benefits through jurisdictional sustainability for palm oil production. Source: EFI Terpercaya briefing #4.

	Global Benefits	Local Benefits
Environmental	Protection of forest and biodiversity, including flagship species such us orangutans and tigers, mitigation of climate change and reduced transboundary haze.	Ecosystem services, such as soil protection and water regulation, and improved local welfare through reduced fires and haze and improved water quality.
Social	Protection of human rights, including customary rights, and safeguards ensuring legality of production and social justice.	Improved tenure for local and indigenous communities, formalized participation of smallholders in the economy and improved workers' rights.
Economic	Inclusive production of valuable commodities in both upstream and downstream industries.	Increased benefits for rural communities, in particular smallholders, from participation in commodity production, and from maintained market access and prices.
Governance	Transparent and improved governance of commodity supply chains to ensure the sustainable and inclusive commodity production.	Improved governance of commodity supply chains and associated improvements in efficiency, equity and conflict reduction.

Photo by Dimitry B on Unsplash

WHAT CAN BE DONE TO IMPLEMENT NBSs TO SUPPORT ZERO-DEFORESTATION COMMODITIES?

Financing instrument: Public Funds, EU EFI

Impact: Measure legality and sustainability in agricultural commodity production at the district and province level

Impact measurement: Availability of district data for each key performance indicator to be made available through an easily accessible and user-friendly web-based platform

Platform: Multi-stakeholder platform

Support can be provided to countries to focus on legality and sustainability in agricultural commodity production at the district and province level. This is the focus of the Terpercaya Initiative in Indonesia, spearheaded by the European Forest Institute's EU REDD Facility and Inovasi Buni (Inobu). The initiative takes its name from the Indonesian word *terpercaya*, meaning 'trustworthy'. This reflects the aims of generating credible information and analysis, and building the understanding and trust needed to promote sustainability, trade and cooperation.

Terpercaya also seeks to support and inform national policies related to climate change and sustainability such as Indonesia's Nationally Determined Contribution under the Paris Agreement on climate change, and efforts to accelerate palm oil certification, particularly through the Indonesian Sustainable Palm Oil (ISPO) system. The Terpercaya Advisory Committee is composed of government, private sector and civil society stakeholders (see Table 5 below). The initiative is funded by the European Union. The current successful participation of the Indonesian government and civil society may ensure future financial sustainability of the initiative once it has demonstrated measurable impacts and benefits.

Table 5: Composition of the Terpercaya Advisory Committee. Source: EFI Terpercaya Briefing #5

Government	• Coordinating Ministry of Economic Affairs • Ministry of Environment and Foresry • Ministry of Agriculture • Ministry of Home Affairs
Private sector	• Pepsico • Unilever • Golden Agri-Resources
Civil society	• Indonesian Biodiversity Conservation Trust Fund (Yayasan Keanekaragaman Hayati Indonesia, KEHATI) • Oil Palm Farmers Union (Serikat Petani Kelapa Sawit, SPKS) • Roundtable on Sustainable Palm Oil (RSPO) • Sustainable Districts Forum (Lingkar Temu Kabupaten Lestari, LTKL) • Greenpeace • Alliance of Indigenous Peoples of the Archipelago (Aliansi Masyrakat Adat Nusantara (AMAN) • World Resources Institute (WRI) • The Sustainable Trade Initiative (IDH) • Auriga

The indicators (see Figure 6) that the Terpercaya Initiative uses to measure sustainability also align with the UN Sustainable Development Goals (SDGs) and promote values held by both Indonesia and consumer countries.

Photo by Maria Ines Simonini ©

Figure 6: The 22 Terpercaya indicators to measure sustainability across environmental, social, economic and governance aspects. Source: EFI Terpercaya website.

The Terpercaya approach is built on the following key elements:

- Legality: Indicators align with the existing legal framework and policies, thereby building on national priorities rather than imposing an alternative system and extra burden.
- Legitimacy: Indicators were developed through a multi-stakeholder consultation process and are relevant to key target groups such as the central government, district governments, private sector, trading partners, civil society, and consumers. Indicators use objective, independently verifiable data.
- Scale: Indicators measure sustainability across local jurisdictions.
- Monitoring: There is a focus on availability of data for regular tracking and efficient collection methods.
- Mutual benefits: Indicators align with the UN SDGs, which reflect values held by both producer and consumer countries.
- Supportiveness: A stepwise approach combining outcome indicators (for example, 'good') with process indicators (for example, 'in progress') aims to incentivize progress.
- Complementarity: The approach complements product-based sustainability certification by including entire jurisdictions and their forest areas, and all producers including smallholders.

The plan is that the district-level data for each key performance indicator will be made available through a web-based platform that is easily accessible and user-friendly. The Terpercaya Initiative also collaborates with Transparency for Sustainable Economies (Trase), which is developing a comprehensive and visually engaging system for tracking Indonesia's palm oil sector based on diverse sources of publicly accessible data. The combination of the indicators with the jurisdictional performance monitoring system provides incentives for district governments to improve their governance of land and forests, including through law enforcement, to ensure that deforestation and environmental degradation are reduced while economic growth is protected and local communities are equitably engaged. At the same time, the private sector would benefit from the creation of a level playing field for all producers in a jurisdiction, while companies with commitments to sustainability may also benefit from access to production from smallholders as they are integrated into sustainable supply chains.

Importantly, the Terpercaya indicators and jurisdictional performance monitoring system may inform dialogues between the European Union and Indonesia regarding sustainable commodity production, thereby encouraging companies to source commodities from sustainable jurisdictions.

SOURCES

European Forest Institute EU REDD Facility

Briefings

- The Terpercaya Initiative briefing 1: Tracking sustainable palm oil and defining jurisdictional sustainability at scale in Indonesia. [PDF English]
- The Terpercaya Initiative briefing 2: Bridging Indonesian laws, the SDGs and commodity certification criteria for defining district sustainability. [PDF English]
- The Terpercaya Initiative briefing 3: Tracking progress to jurisdictional sustainability: Towards a shortlist of key indicators. [PDF English]
    - Annex to briefing 3: List of indicators of jurisdictional sustainability for discussion - Draft. [PDF English]
- The Terpercaya Initiative briefing 4: Why jurisdictional sustainability matters for commodity producers and how it can be measured in Indonesia [PDF English]
- The Terpercaya Initiative briefing 5: Monitoring jurisdictional sustainability in Indonesian commodity production: Progress and next steps [PDF English]
- The Terpercaya Initiative briefing 6: Testing indicators of district sustainability [PDF English]

Advisory Committee meeting minutes

- Minutes of the April 2018 inception seminar [PDF English]
- Minutes of the 1st Advisory Committee meeting - Phase 1 (including presentations) [PDF English]
- Minutes of the 2nd Advisory Committee meeting - Phase 1 [PDF English] and presentations [ZIP English]
    - Complementary presentation ('Trase update') delivered at the second Advisory Committee meeting [PDF English]
- Minutes of the 3rd Advisory Committee meeting - Phase 1 [PDF English]
- Minutes of the 4th Advisory Committee meeting - Phase 1 [PDF English]
- Minutes of the 1st Advisory Committee meeting - Phase 2 [PDF English]

IUCN Issues Brief on Palm Oil and Biodiversity at https://www.iucn.org/resources/issues-briefs/palm-oil-and-biodiversity

CASE STUDY 2: DEBT-FOR-NATURE SWAP – SEYCHELLES

Photo by Kevin Kyburz on Unsplash

WHY ARE DEBT-FOR-NATURE SWAPS IMPORTANT FOR NBSS?

Debt-for-nature swaps belong to a broader category of debt conversion programmes. Their origins can be traced to debt-for-equity exchanges triggered by the Latin American debt crisis in the early 1980s. Incentivized debt conversion is a financing mechanism to help countries with a debt burden bolster their long-term domestic investment in nature conservation, development projects, public health and other social programs. The concept is not new – the first debt-for-nature swap occurred in 1987 when Bolivia and Conservation International negotiated the exchange of $650,000 of Bolivian commercial debt for a commitment to conserve 1.5 million ha of forest (Cassimon et al., 2011). They are voluntary transactions that typically involve cancelling or restructuring a portion of a country's sovereign debt, often with better rates or more favourable repayment terms, in exchange for the country's binding commitment to uphold the conditions of the debt conversion agreement. Prioritizing debt conversion opportunities according to their potential return on investment can increase the impact and effectiveness of this finance mechanism.

Photo by Guido and Carrara family, Flickr (CC BY-NC-SA 2.0)

HOW CAN DEBT-FOR-NATURE SWAPS SUPPORT NBSS?

Debt-for-nature swaps can provide substantial finance for conservation, which in turn provides co- benefits for climate change mitigation and adaptation. Debt conversions are desirable exchanges for political, economic, and environmental rationales. They make the concept of debt relief politically attractive to creditors, which can be a single country, a consortium of countries (e.g., the Paris Club), or commercial entities (e.g., banks) to whom countries are indebted. They offer recipient countries an opportunity to reduce their external debt and free up capital to invest in conservation activities (Buckley, 2009). The process facilitates greater transparency and structure for conservation spending decisions in recipient countries while encouraging broader engagement from civil society in the protection of biodiversity and sustainable use of natural resources. Debt conversions can be conceptualized in 2 stages (McGowan et al., 2020): first, the pre-transaction stage when the conservation deal is designed and structured and second, the post-transaction stage when the agreement is implemented.

The Nature Conservancy (TNC) is adapting debt conversions to support marine conservation efforts by small island developing states and coastal countries. In early 2014, with founding sponsorship from JPMorgan Chase & Co., TNC launched NatureVest as a concerted effort to change the way we invest in nature. JPMorgan Chase provides strategic input to NatureVest research, investor outreach, market analysis and the structuring conservation investments.

Once a government agrees to consider a debt conversion, TNC works with that government to identify eligible commercial or bilateral debt to target. Depending on which type of debt is targeted, the discount rate of the debt is determined by its market value or by negotiations with the creditor. TNC then raises capital through philanthropic grants, repayable loans from private impact investors, or a combination of both (blended finance) to support the debt conversion transaction.

Given the risk of loan default from the debtor countries, credit enhancement (such as finding a co-signor on a loan for someone with poor credit) must also be secured through a development finance institute such as the World Bank, the US Development Finance Corporation, or private insurers. Aside from addressing transactional risk, the credit enhancement process provides an additional level of oversight because these institutions have stringent guidelines that screen for adverse social, political, and environmental impacts in their project portfolios and provide clear guidance on the types of activities that are prohibited such as population resettlement, unsustainable fishing practices, and child labour (OPIC, 2017)

An essential component of TNC's debt conversion process is to help establish a local, non-profit and financially independent conservation trust. The trust is selected through a stakeholder-driven process and is primarily responsible for administering the newly leveraged conservation funds domestically in the post-transaction stage. Conservation trusts must have a nongovernment majority on the board to ensure conservation spending aligns with the contractual agreement. The Nature Conservancy maintains a controlling seat on the trust's board for the duration of the term agreement, which is typically 20 years, and activities funded

through the trust may include marine habitat restoration; economic diversification (including sustainable fisheries and tourism); ecosystem-based adaptation to improve community resilience to climate change; and national risk-reduction plans, among others.

WHAT CAN BE DONE TO IMPLEMENT DEBT-FOR-NATURE SWAPS FOR NBSs?

Financing instrument: Debt for nature swap, private philanthropical capital, loan capital

Impact: Ocean conservation and climate adaptation

Impact measurement: Protect 30% of its ocean

Platform: Private trust engaging with multi-stakeholder platforms

The people of the Republic of Seychelles, a large ocean state, depend on a healthy, thriving marine ecosystem. The reliance on marine resources means that Seychelles and other oceanic nations are among the most vulnerable to climate change. More than two-thirds of the Seychelles economy depends on the surrounding ocean. However, relying so heavily on the ocean also means that damage caused by plastic pollution,overfishing and climate change could be catastrophic.

On March 26, 2020, Seychelles announced the final details of its Marine Protection Areas initiative to protect 30 per cent of its ocean (from a previous baseline of just 0.04 per cent of its Exclusive Economic Zone), a project that has been in the works for a decade. In 2010, the government teamed up with TNC, the UN Global Environment Facility and the UN Development Programme to protect the country's ecological assets while allowing businesses that rely on ocean resources to continue for generations to come. A wide-ranging public engagement process to develop an overall plan for the nation's seas began in 2014, involving consultation with local citizens, businesses, scientists and agencies. By 2018, the Seychelles became the first ever country to successfully undertake a debt-for-nature swap to protect the world's oceans. Plans covering the first 16 per cent of the Seychelles' ocean were completed in 2018, with a further 10 per cent added in 2019. The most recent announcement marks the third and final milestone, bringing the total area protected to 410,000km2 – an area larger than Germany.

Under the deal, the Government of Seychelles used private philanthropic funding and loan capital raised by TNC's NatureVest conservation investment unit to buy back $21.6 million of its sovereign debt at a discount. It repays those loans to a specially created local trust, the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT). SeyCCAT is an independent

private trust formed in 2016 that disburses blue grants funded by the debt conversion, and other recent financing opportunities in Seychelles, to support ocean conservation and implementation of the debt-for-nature swap. In return, the trust repays the $15.2 million in loan capital over ten years. Over a twenty-year period, SeyCCAT will fund $5.6 million worth of marine conservation and climate adaptation activities. It will also give $3 million to an endowment that can fund similar activities in perpetuity.

It is a helpful example of leveraging a country's assets as part of the blue economy sector – a comparative advantage for large ocean states. With large areas under increased protection and effective management, Seychelles will be better prepared for the uncertain effects of warming and rising waters, ocean acidification and adaptation.

New regulations governing the use of the areas for fishing, tourism and other commercial activity are still being finalized but will include requirements such as monitoring systems for all fishing vessels so that authorities can check where they have been catching fish. Maritime and aerial patrols, and surveillance technology such as satellites can all be used to enforce the new rules.

Such deals could also help provide crucial extra sources of conservation funding which might otherwise dry up during times of financial hardship. In Seychelles, the president exempted businesses that fund conservation from paying taxes until September 2020, due to the sudden slump in tourism caused by the COVID-19 pandemic.

The financial transaction of the Seychelles' debt conversion was made possible with the support of private funders, including the China Global Conservation Fund of The Nature Conservancy, The Jeremy and Hannelore Grantham Environmental Trust, Leonardo DiCaprio Foundation, Lyda Hill Foundation, Oak Foundation, Oceans 5, Turnbull Bernstein Family Charitable Fund, and Waitt Foundation. Collaborators on the initiative include the Governments of Belgium, France, Italy, the Republic of South Africa, and the United Kingdom of Great Britain and Northern Ireland, as well as the United Nations Development Program, Global Environment Facility, and Global Island Partnership.

SOURCES

Cassimon et al. (2011). The pitfalls and potential of debt-for-nature swaps: A US-Indonesian case study. Global Environmental Change 21:93–102. https://www.sciencedirect.com/science/article/abs/pii/S0959378010000981

Leonardo DiCaprio Foundation. Debt-for-Nature Swap in Seychelles Mission. https://www.leonardodicaprio.org/debt-for-nature-swap-in-seychelles-mission/

McGowan and others (2020). Prioritizing debt conversion opportunities for marine conservation. Conservation Biology 34 5:1065-1075.

The Commonwealth Small States Centre of Excellence (2018). Case Study Debt-for-Nature Finance Swap. https://seyccat.org/wp-content/uploads/2019/07/SSCOE-Debt-for-Nature-Seychelles-Case-Study-final.pdf

The Economist Group World Ocean Initiative. Seychelles Swaps Debt for Nature. https://ocean.economist.com/blue-finance/articles/seychelles-swaps-debt-for-nature

The Nature Conservancy. Seychelles Achieves 30 Percent Marine Conservation Commitment. https://www.nature.org/en-us/about-us/where-we-work/africa/stories-in-africa/seychelles-conservation-commitment-comes-to-life/

Sheikh (2018). Debt for nature initiatives and the Tropical Forest Conservation Act (TFCA): status and implementation. Congressional Re-search Service report 7–5700. Library of Congress, Washington, D.C. https://sgp.fas.org/crs/misc/RL31286.pdf

United Nations Development Programme (UNDP) (2017). Debt for nature swaps. UNDP, New York.

CASE STUDY 3: SUSTAINABLE TOURISM IN PROTECTED NATURAL AREAS – LAO PDR

Photo by Alexander Kaunas on Unsplash

WHY IS SUSTAINABLE TOURISM IN PROTECTED NATURAL AREAS IMPORTANT FOR NBSs?

Several negative impacts and problems have been encountered in the tourism sector, such as the loss of integrity of tourism sites, pollution, conflict between stakeholders, 'overtourism', and contemporary issues including climate change and the refugee crisis (Telfer & Sharpley, 2015). 'Overtourism' can be defined as "the impact of tourism on a destination, or parts thereof, that excessively influences perceived quality of life of citizens and/or quality of visitors experiences in a negative way" (UN World Tourism Organization, 2018). Visitors and recreation form the third most important threat to World Heritage Sites (IUCN, 2017), impacting more than 60 per cent of such sites. Using NbSs as a framework for sustainable tourism in protected natural areas could support countries to alleviate some of these challenges. Durable financing is an important topic for protected areas, especially as many have faced declining support from traditional financial streams.

Photo by Sandra Ahn Mode on Unsplash

Photo by Giuliano Gabella on Unsplash

HOW CAN SUSTAINABLE TOURISM IN PROTECTED NATURAL AREAS SUPPORT NBSs?

Through the establishment of transparent and effective public-private partnerships (PPPs), tourism development can be an effective strategy to protect biodiversity, mitigate and adapt to climate change and reduce poverty. Instead of simply making donations to a community school or clinic (while this would be welcome), the opportunity for private sector partners is to develop local skills and expertise and maximize benefits through marketing, outreach and appropriate site development. As Figure 7 below indicates, sustainable tourism in protected natural areas could be considered through four key aspects (Mandić, 2019).

1. Governance, *management and conservation:* An example would be management frameworks involving local communities and civil society organizations, supported by enabling government policies to mainstream socioeconomic development of local communities and environmental concerns in tourism development within protected areas.

2. *Capacity-building:* For example, with the variety of stakeholders involved in tourism development in protected areas such as local businesses, commercial tour operators, communities, planners, scientists, individuals and investors, there is continuous need for learning and improvement.

3. *Visitor management and monitoring:* An example would be visitation models in which the inherent strengths of management and monitoring are retained and modified following consideration of visitor motivation, coupled with mobilization to inspire high participation in activities that preserve protected area biodiversity and foster place loyalty.

4. *Sustainable financing and green infrastructure:* Due to the inability to self-finance, the threat that many protected areas will become 'paper parks' is almost always present. For example, financial sustainability is irrelevant if the core aspects of a protected area are not maintained, yet the core aspects or protected areas cannot be maintained in the absence of sufficient financing. One means of estimating a partial value of park services can be derived from visitors' willingness to pay.

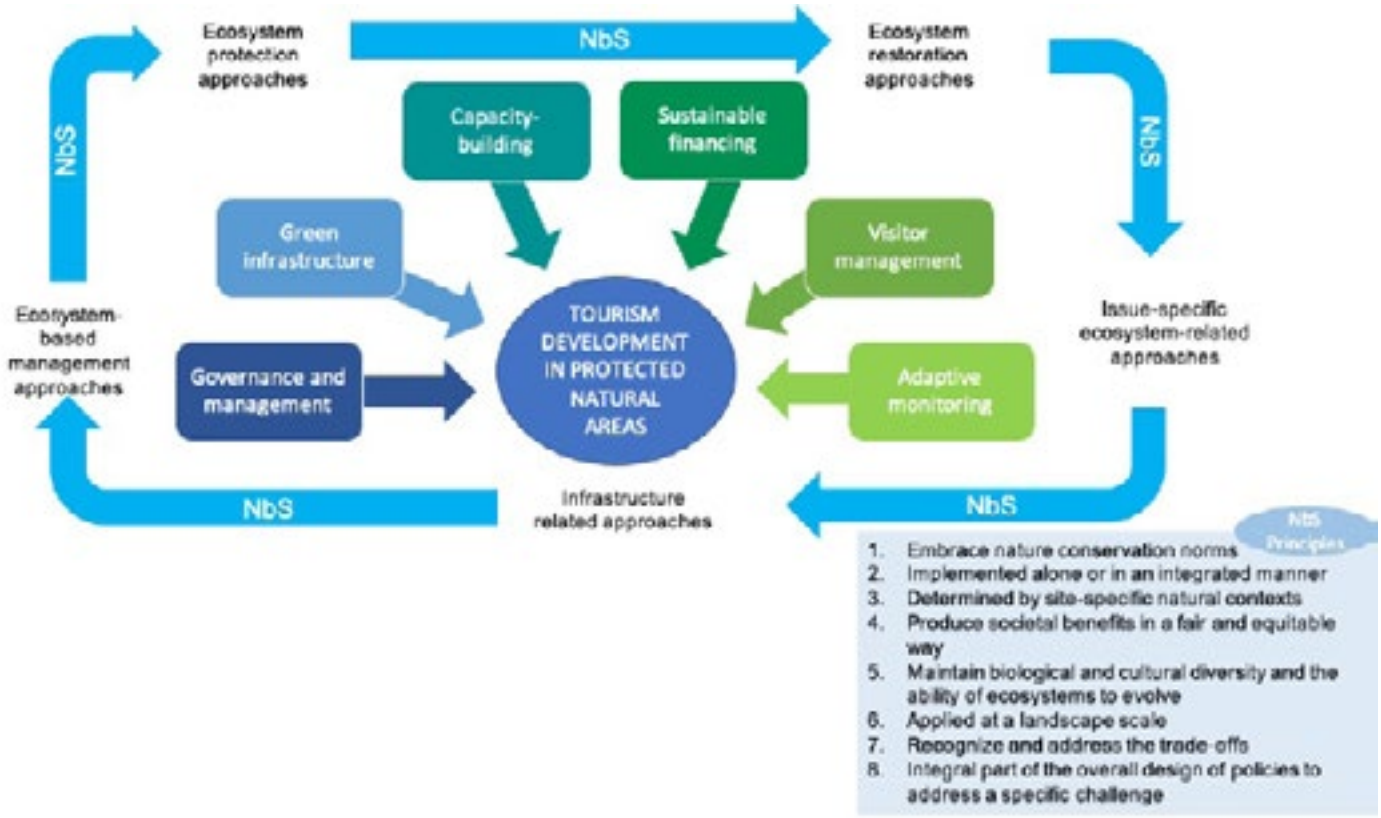


Figure 7: Framework of Sustainable Tourism for NbSs. Source: adapted from Mandić, 2019.

Photo by Pascal Muller on Unsplash

WHAT CAN BE DONE TO IMPLEMENT SUSTAINABLE TOURISM IN PROTECTED NATURAL AREAS IN THE CONTEXT OF NBSs?

Financing instrument: PPP

Impact: Sustainable tourism in Dong Hua Sao National Protected Aarea in Champasak Province with NbT

Impact measurement: Poverty reduction

Platform: Multi-stakeholder platforms

An example of sustainable tourism in protected natural areas can be found in Lao PDR. It is a country of sought-after natural landscapes including limestone mountains, rainforests and waterfalls; it is also culturally rich. These elements offer an opportunity to develop nature-based tourism (NbT) to create green jobs and livelihood opportunities, generate revenue, and lay the groundwork for greener economic growth.

A 2019 World Bank report found that Lao PDR's comparative advantage is its natural wealth. The report estimates that in the next decade NbT could grow in Lao PDR from 4.3 per cent of 2019 GDP and 3.5 per cent of jobs, to the global average of about 10 per cent of GDP and 10 per cent of jobs. This opportunity is based on developing policies that enable responsible private investment and effective conservation as well as quality NbT products that respond to international demand. Furthermore, the report found that tourism has the potential to become the main foreign exchange earner and that NbT could eventually become the biggest rural employer in the country. The study also found that NbT development can lead to significant increases in overall income and poverty reduction in communities adjacent to, or within, protected areas.

A case study was made to assess how nature-based tourism leads to income growth and poverty reduction in communities living in or around protected areas in Lao PDR. The study involved a village located in the Dong Hua Sao National Protected Area in Champasak Province utilizing NbT. The supply of tourism-related services was divided into two categories: (1) community-based tourism through services supplied in the village (homestay, catering, souvenirs), and (2) PPP services supplied in the Dong Hua Sao National Protected Area (guiding, portage, cooking, and so on) through Green Discovery. The village's two different tourism projects were compared, and the study found that poverty fell from 39 per cent to 26 per cent due to the nature-based tourism businesses that partnered with the community (Green Discovery).

Opened in 2012, the Green Discovery (founded in 2001) project is a private partnership

operated by a tour company with over 80 village members; it consists of ziplines and trekking near steep waterfalls. Green Discovery offers packages of two or three days with the tour starting and ending in Pakse. Accommodation is in treehouses in the forest; Green Discovery's customers do not use any homestay facilities.

Approximately 12,000 international tourists have visited Dong Hua Sao National Protected Area through the village of Nong Luang since 2011. Tourists can also visit Dong Houa Sao NPA from two waterfalls, Tad Fane and Tad Nyuang; these waterfalls are managed as private concessions with no benefits to Nong Louang village. The distribution of total visitors to the area between community-based tourism and Green Discovery is roughly 20 per cent and 80 per cent, respectively.

The PPP promotes the full and equitable participation of all individuals of the community. It also brought three times more revenue to the village (75 per cent versus 25 per cent) than the community-based tourism project generated over the last seven years. In 2017, Green Discovery brought 2.5 times more income to the village than did the community-based tourism activities.

Furthermore, the number of beneficiaries of the Green Discovery partnership is higher than those directly involved in community-based tourism. As it is controlled by a few families, the number of beneficiaries of community-based tourism (homestay and trekking) is significantly smaller with only 18 local people involved as guides and porters compared to those involved or having a direct link with the private sector company (about 100 people, which includes the 18 working on community-based tourism).

The increase of earnings from tourism allows villagers to diversify their sources of income – for example, as a hedge against fluctuations in the coffee market price – and simultaneously be more resilient to climate hazards.

The main contributing success factors for Green Discovery's PPP compared to the more traditional community-based tourism approach appear to be threefold: (1) the inclusive approach and high participation of the villagers; (2) the use of treehouses in the forest (green infrastructure); and (3) a variety of tailored packages. These in turn link to all four aspects of sustainable tourism – governance, capacity-building, monitoring and financing and green infrastructure – in protected areas.

SOURCES

Green Discovery Laos. https://greendiscoverylaos.com/about-us/

IUCN - International Union for Nature Conservation (2017) IUCN world heritage outlook 2—a conservation assessment of all natural World Heritage sites. IUCN, Gland, Switzerland. https://portals.iucn.org/libra ry/sites /libra ry/files /docum ents/2017-053-En.pdf

Mandić A. (2019) Nature-based solutions for sustainable tourism development in protected natural areas: a review. Environment Systems and Decisions 39:249–268. https://link.springer.com/article/10.1007/s10669-019-09718-2

Panchapakesan et al. (2019) Nature-Based Solutions in Tourism: A Review of the Literature and Conceptualization. Journal of Hospitality & Tourism Research. https://journals.sagepub.com/doi/abs/10.1177/1096348019890052

Telfer, D. J. & Sharpley, R. (2015). Tourism and development in the developing world (2nd ed.). London, England: Routledge. https://www.routledge.com/Tourism-and-Development-in-the-Developing-World/Telfer-Sharpley/p/book/9781138921740

U.N. World Tourism Organization, Centre of Expertise Leisure, Tourism & Hospitality, NHTV Breda University of Applied Sciences, and NHL Stenden University of Applied Sciences (2018) "Overtourism"? - Understanding and managing urban tourism growth beyond perceptions (Executive Summary). https://www.e-unwto.org/doi/pdf/10.18111/9789284420070

World Bank (2019) Developing Nature-Based Tourism as a Strategic Sector for Green Growth in Lao PDR Synthesis Report. https://www.worldbank.org/en/country/lao/publication/developing-nature-based-tourism-as-a-strategic-sector-for-green-growth-in-lao-pdr

CASE STUDY 4: NATURE-BASED SOLUTIONS IN PACIFIC OCEAN CITIES - SAMOA

Photo by Stephen Glauser Flickr Creative Commons license (CC BY-SA 2.0)

WHY ARE NBSs IN PACIFIC OCEAN CITIES IMPORTANT?

Ocean cities can be described as areas where seascapes and urban landscapes converge, where natural environments and built-up areas near coastlines intersect, and where development has profound impacts on both terrestrial and marine ecosystems. Thus, ocean cities are at the forefront of positive action on climate change mitigation and adaptation and therefore provide a useful case study for nature-based solutions (NbS) finance for nationally determined contributions (NDCs). NbSs in Pacific Ocean cities can also support efforts to build resilience through integrating disaster risk reduction (DRR) and climate change adaptation (CCA). They represent an important link between the Sustainable Development Goals, the United Nations Framework Convention on Climate Change, and the Convention on Biological Diversity.

As coastal marine habitats have always been essential for human life, unplanned urban and peri- urban expansion into marine and coastal ecosystems is a pressing development challenge that countries in Asia and the Pacific cannot afford to ignore. These unique habitats provide coastal protection, food, and building materials that support urban livelihoods, and less-known services such as nutrient cycling and pollution filtration. Furthermore, the administrative boundaries of cities, including Pacific Ocean cities, do not necessarily correspond with the areas needed to support people living in the cities. Indeed, as depicted in Figure 8, cities often depend on ecosystems across regional authorities (Chu et al., 2019).

Figure 8: Examples of the interconnected services provided by ecosystems within city jurisdictions, ecosystems across regional authorities, and ecosystems in other far-flung areas. Adapted from https://cities4forests.com/ **and Chu and others (2019).**

To truly understand the importance of NbSs for Pacific Ocean cities, both the distinctions and interconnectedness of these ecosystem functions within and beyond city boundaries need to be recognized. Figure 9 below shows the interconnected challenges and opportunities of ecosystem health and improved human well-being in the context of Pacific Ocean cities.

Figure 9: Interconnected opportunities and challenges for NbSs through ecosystem health and improved well-being in Pacific Ocean cities. The coloured dots next to each theme show other theme(s) with which it connects. Source: adapted from Zari and others, 2019.

Research shows that addressing interlinked ecological, climate, and human well-being issues in an integrated, ocean-focused and climate-responsive manner is vital for sustainable development in island systems (Zari et al., 2019). Therefore, NbS can provide significant human well-being and biodiversity benefits in this context. Furthermore, Pacific Ocean cities, with a significant body of relevant traditional knowledge and emerging experience in NbSs, can inform a global understanding of how to address converging urbanization and climate change issues in ocean cities.

HOW CAN NBSs SUPPORT PACIFIC OCEAN CITIES?

Strategies for NbSs can support Pacific Ocean cities through strategically and carefully designing and conserving blue and green urban spaces, weaving them into the fabric of urban settings. This can be done in a holistic manner by simultaneously linking such strategies to policies to protect ecosystem functioning in nearby and far away ecosystems. These should be based on the preservation of interlinked ecological processes and ecosystem services both on land and in the ocean. These can be further strengthened by social and cultural considerations, as the health of land and marine ecosystems – and the ecosystem services derived from them – are intimately connected to individual and societal well-being, in terms of physical, psychological, and cultural health.

NbSs can be leveraged to support Pacific Ocean cities through building on existing (or creating new) multi-stakeholder partnerships that also engage the private sector and are aligned with customary practices. To advance implementation of strategies for NbSs, buy-in from local communities is fundamental, as is engagement from national and local governments, local organizations and the private sector. For example, local communities can be involved in the maintenance of urban forests and bioswales, wetlands conservation, and coral reef restoration in coastal areas. The creation of incentives appealing to different stakeholder interests could be used as vehicles for cooperation. This can also help national and local governments to better understand the costs and benefits of designing and implementing policies and measures that support NbSs, rather than less sustainable solutions.

Several types of incentives can be considered – such as policy and regulatory mandates and inclusion of NbSs in urban planning codes– but also fiscal incentives for the private sector to include NbSs in planned green spaces such as preferential permitting and investment, tax incentives, transfer of development rights, and investment credit schemes. Public-private partnerships could be explored to support waste management, green infrastructure and technological innovation, clean energy, urban livelihoods and urban renewal. This could be further explored by Pacific governments, provided such partnerships are strategic and ensure that communities are also meaningfully involved in the process. Other types of incentives include those for natural infrastructure development such as a planned or managed natural or semi-natural system designed to provide a specific benefit (WBCSD, 2015).

Infrastructure is often thought of as human-made structures and buildings but it can also include natural systems such as wetlands, and systems that emulate nature, such as green roofs (Luedke, 2019). The most common incentives influencing the implementation and permitting of natural infrastructure are the cost savings of natural infrastructure compared to grey infrastructure, the co-benefits that natural infrastructure provide to local communities, and alignment with policy frameworks (WBCSD, 2015).

Furthermore, concrete action on NbSs can strengthen key services in Pacific Ocean cities such as regulating services, provisioning services, cultural services and supporting services (see Figure 10).

Figure 10: NbS components that can strengthen key services (adapted from Pederson Zari, 2018).

WHAT CAN BE DONE TO IMPLEMENT NBSs IN PACIFIC OCEAN CITIES?

Countries could seek finance for transformative initiatives that integrate NbSs, climate change adaptation and mitigation, and resilience-building, as well as the relevant SDGs (listed at the top of the case study). A suite of financing tools can support the design and implementation of NbSs in Pacific Ocean cities including, among others:

- public disaster risk reduction (DRR)funds that can enable investment in NbSs that have DRR benefits;
- results-based payment (RbP) schemes for afforestation or ecosystem services in the upstream areas of coastal cities;
- tax incentives for developers that utilize green infrastructure such as green roofs and bioswales;
- grant financing from climate funds and bilateral donors to, for instance, develop urban greenspaces and restore reefs and mangrove ecosystems;

- public or blended green bonds to finance NbSs (if the credit rating environment enables this);
- insurance schemes that offer reduced premiums to properties or companies that invest in wetland and mangrove protection and restoration, or parametric insurance that allows for restoration of reef systems (IISD, 2020); and
- policy incentives and regulatory environments that promote/enable the above and allow for the integration of nature into cities (for example, the building codes of some cities do not allow for development of bioswales).

Leveraging climate finance for ocean-focused sustainable urban development is an opportunity to protect vital carbon sinks and build resilience against climate change impacts in ocean cities. A concrete example of such a transformative initiative is the Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa project. Samoa has been heavily impacted by increasingly severe tropical storms. In response, the government has adopted a programmatic approach to address the issue of climate change-induced flooding (UNDP Project Portal). The project, which was implemented in 2017 and is expected to run until 2023, enables the government to reduce the impact of recurrent flood-related impacts in the Vaisigano river catchment. The river flows through the Apia Urban Area (AUA), Samoa's primary urban economic area. The project is funded by the Green Climate Fund (GCF) for a total of $65.7 million, of which $57.7 million is directly from the GCF and $8 million is co-financing from the Government of Samoa. The project has three main outputs.

OUTPUT 1 strengthening capacities and mechanisms for integrated approach to reduce flood-related risks in place;

OUTPUT 2 key infrastructure in the Vaisigano river catchment is flood-proofed to increase resilience to negative effects of excessive water; and

OUTPUT 3 drainage in downstream areas upgraded for increased regulation of water flows.

Photo by U.S. National Park Service on NPS Multimedia

Financing instrument: Public Funds, GCF

Impact: Climate Resilience through integrated watershed and flood management

Impact measurement: Flood-proofed infrastructure and upgraded downstream drainage

Platform: Multistakeholder

The primary direct beneficiaries include approximately 26,528 people in the Vaisigano river catchment who will benefit from upgraded infrastructure and drainage downstream, integrated planning and capacity-strengthening (including planning for flooding caused by extreme weather events), and flood mitigation measures (especially river works and ecosystem solutions in the Vaisigano river catchment). A further 37,000 people benefit indirectly. The economic net present value of the proposed investment project has been estimated to reach approximately $15.6 million and to yield an economic internal rate of return of approximately 15.5 per cent.

GCF resources are being used to implement a combination of integrated watershed and flood management works. This includes upgrading river works to withstand increased water flows during flood events, ensuring that infrastructure remains functional, and that home dwellings, government and private sector buildings are made more secure and provide adequate shelter in case of floods and their aftermath. Additionally, the project will ensure that when floodwaters occur, the excess waters are redirected through an effective, efficient, and fit-for-purpose drainage system.

Direct benefits from these interventions include reduced risk of damage to public and private infrastructure/assets; reduced possibility of loss of life; and enhanced land value in flood-prone areas. Indirect benefits include reduced losses in income/sales; reduced costs of clean-ups, maintenance and repairs; reduced costs of relief and response efforts; and reduced possibility of health hazards. In addition to the direct beneficiaries, the general population of Samoa will benefit from the safeguarding of critical economic assets, as well as learning by doing and via knowledge products that will be generated.

In addition, mid- and upstream ecosystem and community-based adaptation measures will enhance capture, infiltration, storage and delayed release of rainwater in soils and biomass. Water retention ponds will serve both climate-smart agribusiness development and combat degradation of vulnerable ecosystems through appropriate agroforestry land-use practices, thereby linking the ecosystems in the city, near the city, and farther away from the city through a lens of NbSs.

SOURCES

Chu and others (2019). Unlocking the Potential for Transformative Climate Adaptation in Cities. (Background Paper). Global Commission on Adaptation, Washington, DC and Rotterdam).
https://gca.org/reports/unlocking-the-potential-for-transformative-climate-adaptation-in-cities/

Holland E. A. & Lese V. (2019). Ocean Cities of the Pacific Islands Policy Brief #3 Re-Naturing Urbanization. (Technical Report). Pacific Centre for Environment and Sustainable Development & United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). https://www.unescap.org/resources/ocean-cities-policy-brief-3-re-naturing-urbanization

Luedke H. (2019). Fact Sheet | Nature as Resilient Infrastructure – An Overview of Nature-Based Solutions. (Environmental and Energy Institute).
https://www.eesi.org/papers/view/fact-sheet-nature-as-resilient-infrastructure-an-overview-of-nature-based-solutions

IISD (2020). Building the Investment Case for Nature-Based Infrastructure – The role of insurance solutions.
https://www.iisd.org/articles/investment-case-for-nature-based-infrastructure

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) (2018). 'Re- Naturing' Urbanization: Nature-Based Solutions for Ocean Friendly Cities. https://www.unescap.org/blog/re-naturing-urbanization-nature-based-solutions-ocean-friendly-cities

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) (2019). Snapshot for Policymakers Delivering Resilient Solutions in Pacific Island Settlements. https://www.unescap.org/sites/default/files/Ocean%20Cities%20Policy%20Guide_Snapshot_300519_1.pdf

WBCSD (2015). The business case for natural infrastructure.
https://www.naturalinfrastructureforbusiness.org/wp-content/uploads/2016/02/WBCSD_BusinessCase_jan2016.pdf

Zari et al. (2019). Utilising nature-based solutions to increase resilience in Pacific Ocean Cities. EcosystemServices. 38:100968.
https://www.sciencedirect.com/science/article/abs/pii/S221204161930261X

CASE STUDY 5: REDD+ AND REDD+ RESULTS-BASED PAYMENTS - INDONESIA

Maria Ines Simonini ©

WHY ARE REDD+ AND REDD+ RESULTS-BASED PAYMENTS IMPORTANT FOR NBSs?

To meet targets for the AFOLU sector, approximately 56 countries have made an explicit link or reference to "Reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries" – otherwise known as REDD+ – in their first NDCs.

The UNFCCC Cancun Agreements outline three non-discrete phases that allow for an iterative approach to REDD+ implementation: readiness ('Phase 1'); demonstration ('Phase 2'); and results- based actions including results-based payments (RBPs) ('Phase 3'). This approach reflects the convergence of UNFCCC countries around the need for a flexible, learning-by-doing approach to REDD+ implementation given the complexity of policy reform and structuring of incentives, and in recognition of diverse national circumstances that would have countries prepare at different paces. Although the phases are defined flexibly enough to allow for country-level interpretation, they can be considered non-discrete, and there is some overlap between them. A useful guide to understanding REDD+ can be found in Maniatis and others (2016) while a recent overview of REDD+ implementation can be found in Maniatis and others (2019).

The Green Climate Fund (GCF) is the main multilateral source of funding for climate adaptation and mitigation in developing countries, including REDD+. It was established at the UN's sixteenth session of the Conference of the Parties (COP) as an operating entity of the Financial Mechanism of the UNFCCC under Article 11. UNFCCC decision 9/CP.19 encouraged the GCF to play a key role in collectively channelling adequate and predictable REDD+ RbPs in a fair and balanced manner, considering different policy approaches, while working to increase the number of countries in a position to obtain and receive payments. The GCF operationalized its pilot programme on REDD+ RBPs in late 2017, having launched a request for proposals for a total amount of $500 million.

Photo by Anggit Rizkianto on Unsplash

HOW DO REDD+ RESULTS-BASED PAYMENTS SUPPORT NBSs?

Information on REDD+ results that have gone through the UNFCCC assessment process can be found on the Lima REDD+ Information Hub hosted on the REDD+ Web Platform. Established to publish information on the results of REDD+ activities and corresponding RbPs, the Lima REDD+ Information Hub aims to increase the transparency of information on REDD+ results-based actions. The Lima REDD+ Information hub contains one entry for each REDD+ result that has been reported in a technical annex on REDD+ results to the biennial update reports and has also undergone a technical analysis. To post a country's results to the Lima REDD+ Information Hub, countries have to include the following information, as well as have gone through certain steps which are laid out in the Warsaw Framework for REDD+:

- results for each relevant period expressed in tonnes CO_2/year with a link to the technical report referred to in the decision on modalities for measuring, reporting and verifying;
- assessed forest reference (emission) level expressed in tonnes CO_2/year with a link to the final report of the technical assessment;
- summary of information on how Cancun safeguards are being addressed and respected;
- link to the national strategy or action plan;
- information on the national forest monitoring system; and
- quantity of results for which payments were received expressed in tonnes CO_2/year, and the entity paying for results.

Countries engaging in the REDD+ process through the UNFCCC have been able to access GCF funds either for the implementation of REDD+ (phase 2) or to access RBPs (phase 3). As of December 2020, eight countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Indonesia and Paraguay) have had REDD+ results approved by the GCF for a total of approximately $497 million.The consultation process for a subsequent phase of the pilot is ongoing but it is still uncertain if additional conditionalities will be applied. Nevertheless, a lack of access to the GCF REDD+ RBP resources could risk NDC implementation.

Although under the GCF, access to RbPs is specific to REDD+, the Forests and Land Use GCF results area is not. This may be of interest to countries seeking finance for the implementation of NDCs and the incorporation of NbSs by considering the wider environmental, social and economic co-benefits, including the gender-sensitive development impacts of the key mitigation activity submitted in a project proposal to the GCF under the Forests and Land Use results area.

Photo by Roman Bitang on Unsplash

WHAT CAN BE DONE TO IMPLEMENT REDD+ RESULTS-BASED PAYMENTS TO SUPPORT NBSs?

Financing instrument: Public Funds, GCF

Impact: Strengthening of National REDD+ Strategy and enhancing Social Forestry Programme and forest management units

Platform: Multi-stakeholder

More than 74 per cent of Indonesians living in poverty depend on ecosystems for their livelihoods. Depletion of these services would have a drastic impact on their livelihoods while widening the inequality gap. The GCF approved Indonesia's request for REDD+ RBPs at its 26th board meeting in August 2020, thereby recognizing Indonesia's REDD+ results for 2014–2016, with a total volume of 20.25 million tonnes of carbon dioxide equivalent. This amounts to $103.8 million. The Forest Estate in Indonesia has three sub-classifications: production forest, conservation forest, and protected forest.

Two key initiatives identified as contributing to REDD+ emissions reductions for 2014–2016 are the (1) Moratorium Termination of the Granting of New Permits and Perfecting Natural Primary Forest and Peatland Management) and (2) the Social Forestry Programme. These two initiatives are briefly described below.

MORATORIUM

In 2011, Indonesia imposed the moratorium on the issuance of new concessions in primary forests and peatlands, renewed by Presidential Instruction every two years (2011, 2013, 2015, 2017), and most recently made permanent in August 2019. Through this moratorium, 66 million hectares of natural forests and peatlands are legally protected from planned deforestation activities. In addition, the government at each level cannot reduce the functional status of forest areas, such as legally reducing the function of conservation forests to production forests with the intention to grant use permits.

The moratorium sends a strong, clear signal about the importance of protecting peatlands, and resulted in substantial emission reductions. According to Wijaya and others (2017), the moratorium has the greatest potential of all of Indonesia's mitigation policies, and that if it is extended to 2030 in its present form (which should now be the case, having been made permanent in 2019) it could reduce emissions by nearly 200 million tonnes of CO_2 eq.

To facilitate governance around the moratorium, an Indicative Map of the Termination of the Granting of New Permits (a.k.a. 'moratorium map' or PIPPIB) was established. The moratorium has also helped to promote increased cooperation among ministries, information-sharing from the central to local levels (as elements of monitoring, forest management, and permit issuance needed improvement), along with greater transparency and coordination as well as measures to avoid fires. Over time, the August 2019 Presidential Instruction provided even greater detail around the responsibilities of the various government ministries and units and affirmed the need for periodic revision of the moratorium map every six months – after coordination with other ministerial and non- ministerial government institutions.

The moratorium is an opportunity for Indonesia to improve its forest governance. It is further supported through other initiatives that contribute to forest land and resources planning, and decentralized forest management and law enforcement, including tools such as forest management units and the Social Forestry Programme.

SOCIAL FORESTRY PROGRAMME

The Social Forestry Programme (*perhutanan sosial*) is included in the Ministry of National Development Planning's (BAPPENAS) National Medium-Term Development Plan for 2015 to 2019. Its overall objective is to reduce poverty among forest dependent people while reducing deforestation and forest degradation, improving land management and conserving forests and valuable ecosystem functions. According to the Ministry of Environment and Forestry, there are 25,863 villages located in or around forest areas (2017). This translates to 37.2 million individuals, representing 9.2 million households, of which approximately 1.7 million are classified as poor.

This programme targets the adjudication, demarcation and transfer of 12.7 million hectares of degraded forest land (i.e., 10 per cent of the total state forest land) to communities for sustainable forest management by 2019. It will also support the restoration of these lands to boost economic welfare, promote community engagement and community ownership in managing lands and forests, and reduce the pressure to convert old-growth forest for agriculture. The Ministry of Environment and Forestry is the primary actor for the Social Forestry Programme, given its mandate to control, regulate, manage and administer natural resources under the Basic Forestry Act No. 5 of 1967 and its subsequent revisions. According to Wijaya and others (2017), of the designated 12.7 million hectares on the Social Forestry map, 2.2 million hectares of degraded lands could potentially be restored, thus contributing directly to emissions reductions targets.

Social forestry in Indonesia represents a significant shift in the role given to communities in forest management, from none officially prior to 1990 to benefitting from a range of regulations that support the role of communities in forest management in recent years through provision of access, management and/or ownership rights to forest resources and forest land. In addition to the central government, civil society also plays a significant role, engaging

with both the communities and the government in various capacities to strengthen the policy environment and the actual implementation of this programme. Civil society organizations are complemented by local universities and research institutions, local governments and the private sector.

The programme involves selecting, demarcating and registering access and/or ownership rights, as well as supporting the development of economic activities compatible with the existing forest cover and land status. The Social Forestry Programme is seen as a key initiative to support the implementation of the various policies and regulations that the government has issued to improve community access rights to the forest estate, including under a community empowerment programme which consists of six complementary social forestry schemes aimed at different types of forests, organizations of forest users, and uses:

1. Community forestry (*Hutan Kemasyarakatan* – HKM) provides community groups with access to production and protection forests that are not under licence, and capacity-building tools for sustainable forest management of timber and non-timber forest products, environmental services, medicinal plants, agrofishery, and agrosilvopastoral uses.

2. Village forestry (*Hutan Desa* – HD) provides villages with access to production and protection for forests that are not under licence for uses like those of HKM above.

3. Community forest plantations (*Hutan Tanaman Rakyat* – HTR) provide individuals or cooperatives with access to production forests, managed to increase the quality and potency of forest products (timber and Non-Timber Forest Products (NTFPs)). Under this scheme, HTRs and individuals may request up to 15 hectares, and cooperatives up to 700 hectares.

4. Customary forests (*Hutan Adat* – HA) are managed by customary law communities (*masyarakat hukum adat*) and legally recognized through regional regulation (*perda*). They can be located in production or protection forests or on private land (i.e., outside forest estates) for timber and NTFPs (using local customary practices) production or designated as land for protection purposes. The formal inclusion of customary forests as part of social forestry schemes is particularly significant as it materializes the legal recognition of customary lands as part of the rights of forests (*Hutan Hak*) and is thus separate from the Forest Area. This is a recognition of Constitutional Court Decision No. 35 in 2012. HA is therefore the most significant forest scheme as it recognizes customary territory and offers expansive rights over land and forest resources to indigenous communities and represents land ownership.

5. Forestry partnerships (*Kemitraan Kehutanan*) enable local communities, organized in community groups or cooperatives, to access production forests under concession and in specific areas (*wilayah tertentu*) in cooperation with concession holders and forest management units. Capacity-strengthening is provided to produce timber and NTFPs, environment services, medicinal plants, silvofishery, agrosilvopasture, and so forth based on FMU management plans.

6. Forest Utilization Permit for Social Forestry (*Izin Pemanfaatan Hutan Perhutanan Sosial* – IPHPS) is managed by farmer groups and cooperatives together with state-owned forestry companies for timber originating from production and protection forests as well as NTFP production, and environmental services.

In the case of HKM, HD, and HTR, social forestry is formalized through permits providing usufruct and management rights, in the form of an agreement between the forest manager or the licence holder (private or public forest entities) and communities in the case of forestry partnerships. For customary forests, lands are ceded to their customary owners, meaning that land is formally removed from the Forest Area.

In moving forward, the Government of Indonesia will use the proceeds from these RbPs to invest in activities that continue to build and strengthen its REDD+ architecture, and further strengthen government capacity to coordinate and implement REDD national plans through the implementation of the country's national REDD+ action strategy (STRANAS). RbP proceeds will also be used to further extend and enhance Indonesia's Social Forestry Programme and forest management units (FMU), two priority programmes that contribute to sustainable forest management and rehabilitation, as well as community empowerment and poverty alleviation. The Social Forestry Programme is supported with a $46 million REDD+ results-based payment from the GCF, while another $46 million will support the FMUs. It is expected that an estimated 200,000 households will benefit from the project's support in the Social Forestry Programme.

SOURCES

GCF (2020) Indonesia REDD-plus RBP for results period 2014-2016.
https://www.greenclimate.fund/project/fp130

Maniatis D. et al. (2016). Technical Resource Series 3: Towards a common understanding of REDD+ under the UNFCCC.
https://www.unredd.net/documents/redd-papers-and-publications-90/un-redd-publications-1191/technical-resources-series/15901-towards-a-common-understanding-of-redd-under-the-unfccc.html

Maniatis D. et al. (2019). Toward REDD+ implementation: Annual Review of Environment and Resources, Vol. 44, 373–398.
https://doi.org/10.1146/annurev-environ-102016-060839

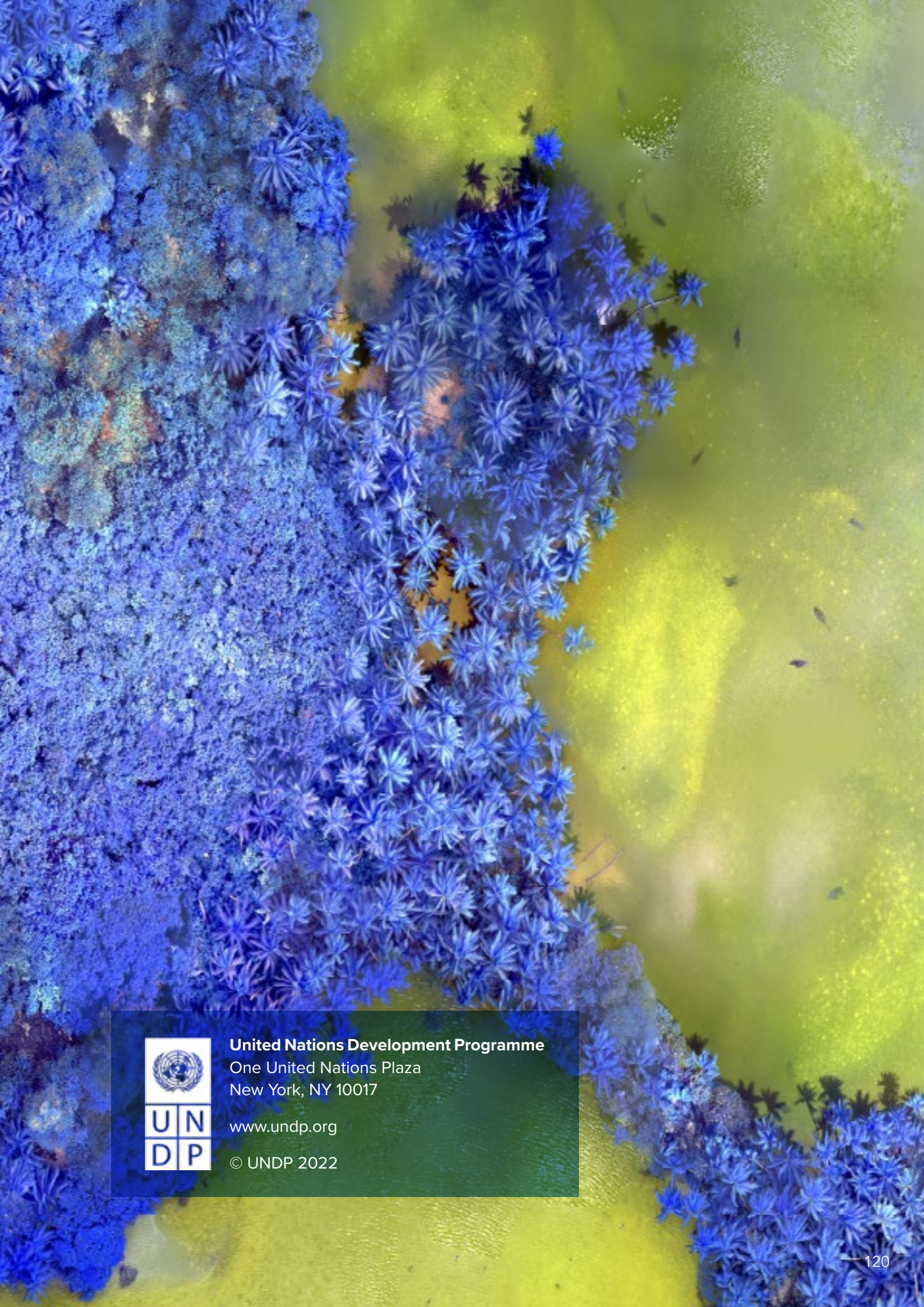
UNDP (2020). Results-based payments for a greener future.
https://www.undp.org/content/undp/en/home/blog/2020/results-based-payments-for-a-greener-future.html

UNREDD Programme (2020). Indonesia receives Results-based Payments from the Green Climate Fund
https://www.un-redd.org/post/indonesia-receives-results-based-payments-from-the-green-climate-fund

Wijaya A. et al. (2017). How can Indonesia achieve its climate change mitigation goal? An analysis of potential emissions reductions from energy and land-use policies. (Working Paper). World Resources Institute.
https://www.wri.org/publication/how-can-indonesia-achieve-its-climate-goal

UNDP is the leading United Nations organization fighting to end the injustice of poverty, inequality, and climate change. Working with our broad network of experts and partners in 170 countries, we help nations to build integrated, lasting solutions for people and planet.

Learn more at undp.org or follow at @UNDP.



United Nations Development Programme
One United Nations Plaza
New York, NY 10017

www.undp.org