



ENHANCING NDCs THROUGH NATURE-BASED SOLUTIONS

8 simple recommendations for
integrating nature into NDCs

March 2020

ENHANCING NATIONALLY DETERMINED CONTRIBUTIONS THROUGH NATURE-BASED SOLUTIONS:

8 simple recommendations for integrating nature into NDCs

INTRODUCTION

The concept of nature-based solutions (NbS) has gained momentum in several international fora, including the UN Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), the Sendai Framework for Disaster Risk Reduction, the World Economic Forum, and the UN General Assembly, among others. **While nature-based solutions can be deployed to address a number of societal challenges, they have emerged as essential tools to both adapt to and mitigate climate change.**











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In 2020 Parties to the UNFCCC have the opportunity to increase their climate ambition by integrating nature-based solutions in revised Nationally Determined Contributions (NDCs) to the Paris Agreement. To assist Parties toward this end, WWF reviewed current guidance from several institutions on using nature-based solutions for climate change and how nature-based solutions were featured in existing NDCs.

Below is a list of eight recommendations that, if followed, will help Parties demonstrate strong commitments to nature-based solutions. Following these recommendations is an overview of various definitions of nature-based solutions in the context of climate change, exemplary text from 2015 NDCs for each recommendation, and finally a list of resources for further guidance.

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RECOMMENDATIONS FOR INTEGRATING NATURE-BASED SOLUTIONS FOR CLIMATE IN REVISED NDCS

	1	Include the use of nature for both climate change mitigation and adaptation and prioritize actions that provide benefits for both.	✓
	2	Set ambitious, measurable and time-bound numeric targets (e.g. hectares of ecosystems utilized, CO ₂ sequestered and/or number of people benefiting from increased resilience).	✓
	3	To maximize benefits to biodiversity, utilize natural ecosystems over “artificial” or “modified” ecosystems, and include climate benefits derived from protected areas.	✓
	4	Explore all ecosystem types that can provide climate benefits – wetlands, forests, mangroves, coral reefs, grasslands, working lands, urban landscapes.	✓
	5	Acknowledge and manage climate risks that threaten the long-term viability of nature-based solutions.	✓
	6	Integrate commitments to other international conventions and relevant national policies that result in climate adaptation and mitigation benefits.	✓
	7	Ensure adherence to social and environmental safeguards, and include community participation and consultation in the development and management of nature-based climate solutions.	✓
	8	Include the need for technical and financial support to achieve results.	✓

WHAT ARE NATURE-BASED SOLUTIONS?

IUCN defines nature-based solutions 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.” While this definition does not mention climate change explicitly, it includes climate change as one of six broad societal challenges that nature can help address (the others are disaster risk, food security, water security, socio-economic development and human health). Nature can be utilized to address climate change directly (ecosystem-based or nature-based mitigation) or to reduce vulnerability to the climate change impacts that affect the other 5 societal challenges (ecosystem-based or nature-based adaptation). All these approaches would be considered nature-based solutions for climate, either mitigation or adaptation.

Other definitions of nature-based solutions aimed at addressing climate-related challenges emphasize different aspects on either the problem to be solved or the nature to be used. The Nature Conservancy (TNC) and Rainforest Alliance use the term “Natural Climate Solutions” that makes reduced or avoided emissions the primary objective, while

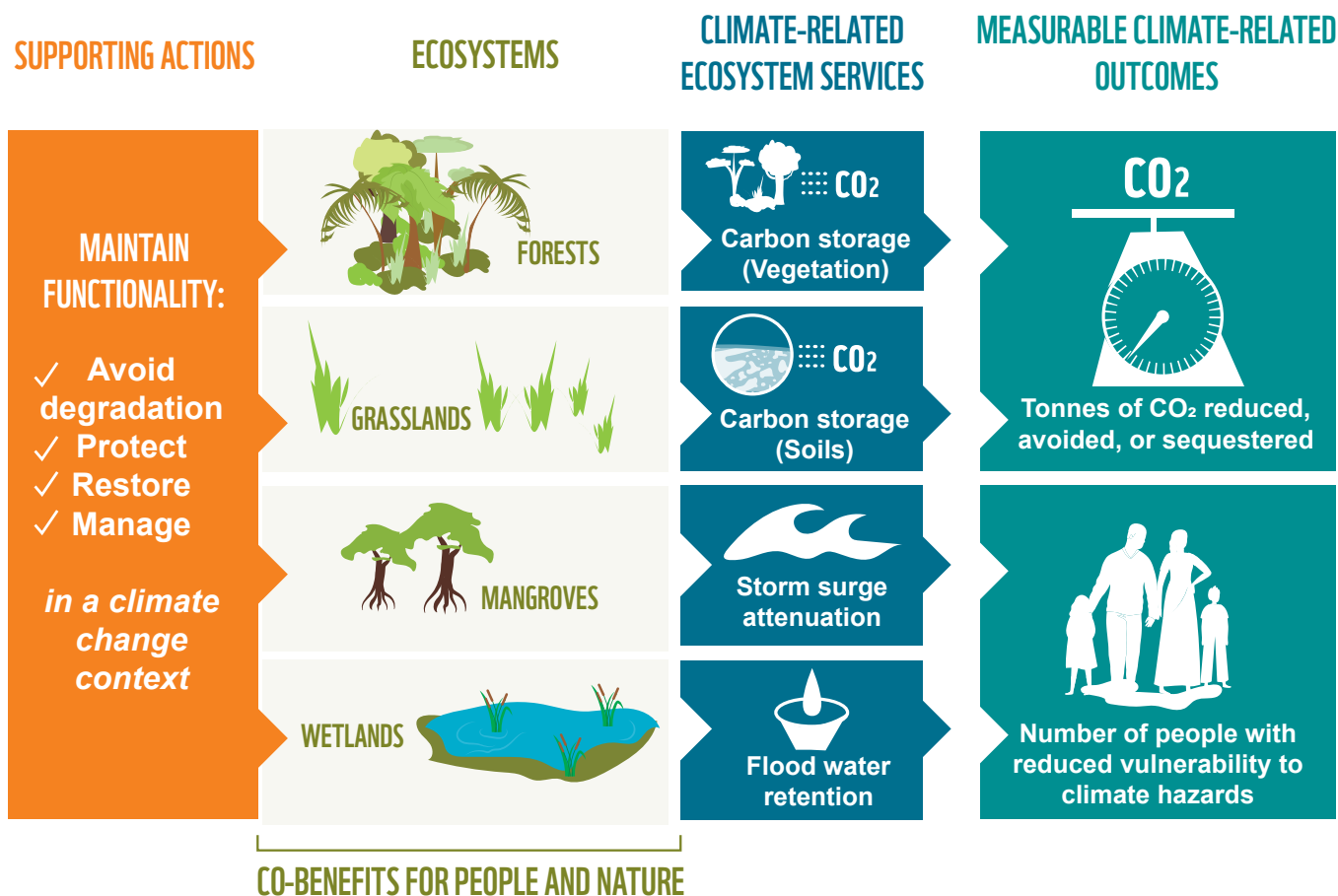
the Rainforest Alliance definition also includes resilience to extreme weather but limits actions to forest biomes. The World Bank GFDRR uses nature-based solutions in the context of disaster risk reduction. Some definitions include both natural and artificial (such as green roofs) or modified ecosystems (such as forest plantations) while others do not. All of these are valid depending on context. In fact, the Oxford University nature-based solutions Initiative describes NbS as an “umbrella concept for other established nature-based approaches such as ecosystem-based adaptation (EbA) and mitigation (EbM), eco-disaster risk reduction (eco-DRR), Green Infrastructure (GI) and natural climate solutions (NCS).”

For the purpose of integrating nature-based solutions for climate in NDCs, WWF proposes the use of the following framing.

Nature-based Solutions for Climate are ecosystem conservation, management and restoration interventions that:

1. are intentionally designed to deliver measurable climate change adaptation and/or mitigation outcomes;
2. simultaneously deliver co-benefits for human development and biodiversity; and
3. manage anticipated climate risks to nature that can undermine their long-term effectiveness.

NATURE-BASED SOLUTIONS FOR CLIMATE



This graphic depicts a simple way to think about the use of nature to deliver measurable climate change adaptation and mitigation outcomes while delivering co-benefits for biodiversity and human wellbeing. Examples are illustrative and not meant to be comprehensive.

This interpretation of nature-based solutions can provide clarity to Parties to the UNFCCC in several areas. First, both climate change adaptation and mitigation outcomes are included and are of equal importance. The intentional focus on designing for climate change outcomes, rather than incidental mitigation and adaptation co-benefits of conservation activities is critical for increasing climate ambition. Measurable outcomes enable countries to monitor progress against targets and are essential to access climate finance. Considering and optimizing benefits for people and nature creates synergies with other international conventions such as the Sustainable Development Goals, Convention on Biological Diversity, and Sendai Framework, and ensures adherence to social and environmental safeguards. Finally, as the long-term viability of nature-based solutions is compromised by climate change threats to nature itself, it is essential that interventions acknowledge and manage climate risks to help increase their resilience and long-term viability.



RECOMMENDATIONS WITH EXEMPLARY TEXT FROM PREVIOUSLY SUBMITTED NDCS

To provide clarity on what strong commitments to nature-based solutions for climate would look like, WWF has provided excerpts from NDCs that exemplify each of the eight recommendations provided above. The date included with each country refers to the NDC's date of submission. (Note that this list is not exhaustive. Inclusion of these examples does not imply WWF endorsement of these activities nor indicates their successful implementation.)

1. INCLUDE THE USE OF NATURE FOR BOTH CLIMATE CHANGE MITIGATION AND ADAPTATION AND PRIORITIZE ACTIONS THAT PROVIDE BENEFITS FOR BOTH.

Antigua and Barbuda (2016, p10)

Expanding the protection of wetlands and watersheds to sink GHG emissions also serves as an adaptation strategy by enhancing water retention and reducing the risks of climate impacts, namely flooding and storm surge.

Belize (2016, p4-5)

Protecting and restoring mangrove forests. This activity can be an effective mitigation action while also helping the protection of low-lying coastal areas against the impact of storms and soil erosion.

Bolivia (2016, p9)

In relation to forests and agriculture, actions will be promoted with a focus on joint mitigation and adaptation to climate change and holistic development, achieving the following results: Increased forest areas with integrated and sustainable community management approaches with 16.9 million hectares in 2030, in reference to 3.1 million hectares by 2010.

Lao PDR (2016, p3)

An ambitious target is set out in the National Forestry Strategy to the Year 2020 for increasing forest cover to a total of 70% of land area by 2020 and maintaining it at that level going forward. This will reduce the risk of floods and prevent land degradation, yet at the same time the greenhouse gas mitigation potential of such a target is substantial and long lasting.

Republic of Marshal Islands (2016, p8)

RMI also considers that adaptation will have mitigation co-benefits, with efforts such as mangrove and agriculture rehabilitation programs likely to enhance carbon sinks as well as assist with protection of water resources and the health of the RMI people.

2. SET AMBITIOUS, MEASURABLE AND TIME-BOUND NUMERIC TARGETS (E.G. HECTARES OF ECOSYSTEMS UTILIZED, CO2 SEQUESTERED AND/OR NUMBER OF PEOPLE BENEFITING FROM INCREASED RESILIENCE).

Democratic People's Republic of the Congo (2017, p9)

It is planned to support projects allowing to plant around 3 million hectares of forest by 2025 as part of afforestation programs and reforestation, which would sequester about 3 million tonnes of CO2.

Namibia (2016, p2)

Measures evaluated in the AFOLU sector are: Reforesting 20,000 ha annually as from 2018; Implementing agroforestry systems over 5,000 ha annually during the commitment period as from 2018; Converting 5,000 ha of grassland annually as from 2018 to arboriculture up to 2030.

Nepal (2016, p5, p12)

...protect 0.2 million ha of forests through the implementation of adaptation plans, and mainstream community/ecosystem-based adaptation by 2025... Nepal will pilot a sub-national project on REDD+ to reduce about 14 million tons of CO2 (eq) by 2020 by addressing the drivers of deforestation and forest degradation and strengthening governance mechanisms in all types of forests and protected areas.

3. TO MAXIMIZE BENEFITS TO BIODIVERSITY, UTILIZE NATURAL ECOSYSTEMS OVER “ARTIFICIAL” OR “MODIFIED” ECOSYSTEMS, AND INCLUDE CLIMATE BENEFITS DERIVED FROM PROTECTED AREAS.

Belarus (2016, p7)

Pursuant to the National Strategy for the Development of the System of Strictly Protected Areas until 2030, **efforts will be made to ensure further conservation of natural ecosystems**, biological and landscape diversity, ensuring ecological balance of natural systems **and sustainable use of protected areas covering at least 8.8% of the territory of the country.**

Cambodia (2017, p7)

In accordance with the National Forest Programme, Cambodia is striving to increase and **maintain the forest cover** at 60% of the total land area, from an estimated 57% in 2010. This will be achieved in particular **through... Protected Areas**

Colombia (2018, p6)

Colombia’s adaption action towards Paris Agreement... Delimitation and **protection of Colombia’s 36 “paramo” areas** (high mountain Andean ecosystems) (approximately 3 million hectares)...Increase of more than 2.5 million hectares in coverage of **newly protected areas in the National System of Protected Areas – SINAP** -, in coordination with local and regional stakeholders.

Mongolia (2016, p7)

Increasing protected areas up to 25-30% of the total territory **will help maintain natural ecosystems** and preserve water resources with a certain synergy effects for emission reduction.

4. EXPLORE ALL ECOSYSTEM TYPES THAT CAN PROVIDE CLIMATE BENEFITS – WETLANDS, FORESTS, MANGROVES, CORAL REEFS, GRASSLANDS, WORKING LANDS, URBAN LANDSCAPES.

Canada (2017, p3)

Protecting and enhancing carbon sinks including in **forests, wetlands and agricultural lands.**

Chad (2017, p7)

Chad is ready to fight against climate change and adapt to its impacts by making efforts to protect the environment, in particular through activities such as planting thousands of trees each year and implementing the national programme for the **development of green belts around Chadian cities.**

China (2016, p26)

To strengthen the protection and restoration of **wetlands** and to increase carbon storage capacity of **wetlands.**

Ethiopia (2017, p2)

Protecting and re-establishing **forests** for their economic and ecosystem services, while sequestering significant amounts of carbon dioxide and increasing the carbon stocks in landscapes

Mexico (2016, p7)

Increase carbon capture and strengthen coastal protection with the implementation of a scheme of conservation and recovery of coastal and marine ecosystems such as **coral reefs, mangroves, sea grass, and dunes.**

Uruguay (2017, p12)

Adoption of good practices of **natural grassland management** in livestock production in 1,000,000 ha (10% of grasslands), thus avoiding the loss of soil organic carbon, and favoring carbon sequestration towards 2025...Implementation of no-till **farming**, with grain crop rotations, cover crops, and inclusion of C4 grasses, under Plans for Soil Use and Management, in 95% of the agricultural area by 2025.

Singapore (2016, p6-7)

Enriching Singapore’s urban biodiversity and extensive greenery is part of the national vision for a “City in a Garden”...Singapore will continue efforts to safeguard its biodiversity despite an urban environment. The array of natural ecosystems (including **evergreen rain forest, mangroves, freshwater streams, freshwater swamp forest, coral reefs and mudflats**) will continue to be conserved, with targeted programs for habitat enhancement and species recovery where required.

5. ACKNOWLEDGE AND MANAGE CLIMATE RISKS THAT THREATEN THE LONG-TERM VIABILITY OF NATURE-BASED SOLUTIONS.

Jordan (2016, p15)

Conducting a comprehensive review of the National Network of Protected Areas. The sought revision will aim at **identifying/validating climate-vulnerable ecosystems**, extending conservation efforts in PA-surroundings and designing buffer zones as deemed necessarily for **strengthening the adaptive capacities of key ecological hotspots**.

Republic of Moldova (2017, p19-20)

The following climate change **adaptation measures could be implemented in the Forestry Sector**: ... increasing the forest cover, **including in the climate change context [of] mitigation and biodiversity conservation**; development and implementation of projects aimed at planting protection forestry strips (buffer zones) for agricultural lands protection, anti-erosional purpose, and for waters protection; **develop methodologies/technologies to assure forest ecosystems adaptability to climate change**.

Mongolia (2016, p10)

...To **make forests resilient to climate change** by improving their productivity and changing their composition and structure.

Nigeria (2017, p7)

Develop and maintain a frequent forest inventory system to facilitate monitoring of forest status; and initiate a research programme on a range of climate change-related topics, **including long term impacts of climatic shifts on closed forests**.

Uruguay (2017, p19)

The **management plans** of at least six protected areas **will include climate change and variability considerations** by 2025.... To have formulated, adopted and implemented by 2025 three integrated basin management plans **that consider climate change and variability**.

6. INTEGRATE COMMITMENTS TO OTHER INTERNATIONAL CONVENTIONS AND RELEVANT NATIONAL POLICIES THAT RESULT IN CLIMATE ADAPTATION AND MITIGATION BENEFITS.

Bahamas (2016, p7)

... in 2008, as part of the CBD Programme of Work on Protected Areas (POWPA) and a new initiative across the Caribbean, The Bahamas, committed itself to Caribbean Challenge Initiative (CCI). **This initiative builds on the work undertaken under the CBD** to provide for the protection of 20% of our near shore marine environment by 2020... **Efforts under The Forestry Act...** will be subject to a management plan to ensure efficient and focused strategy and environmental conservation...Enhanced management will improve our forest ecosystems, the ridge to reef linkages to protect corals, sea grasses important to sustainable livelihood and the functionality of our mangrove ecosystems increasing their carbon sink ability.

Colombia (2018, p6)

It was defined that the country will **focus its [adaptation] efforts to 2030 jointly with other global targets that contribute to increasing resilience, such as** those of the Convention on Biological Diversity (CBD), the **2030 Development Agenda**, and the UN Convention to Combat Desertification (UNCCD), as well as the **Sendai Framework for Disaster Risk Reduction...**

Guyana (2016, p8)

With adequate resources, Guyana will develop a suite of ERP measures that will include...the conservation of an additional 2 million hectares through Guyana's National Protected Area System and other effective area-based conservation measures **as per Guyana's commitment under the UNCBD**, including the protection of conservancies and reservoirs and their watersheds and the watersheds upstream of new hydro-power sites.

Vanuatu (2016, p6)

The National Climate Change and Disaster Risk Reduction Policy identifies 5 key adaptation strategic priorities and associated actions to further enhance national adaptation efforts and build resilience across sectors... [including] ecosystem-based approaches.

7. ENSURE ADHERENCE TO SOCIAL AND ENVIRONMENTAL SAFEGUARDS, AND INCLUDE COMMUNITY PARTICIPATION AND CONSULTATION IN THE DEVELOPMENT AND MANAGEMENT OF NATURE-BASED CLIMATE SOLUTIONS.

Bolivia (2016, p9)

Increased forest areas with **integrated and sustainable community management** approaches with 16.9 million hectares in 2030, in reference to 3.1 million hectares by 2010.

Indonesia (2016, p2)

Indonesia has taken significant steps to reduce emissions in land use sector by instituting a moratorium on the clearing of primary forests and by prohibiting conversion of its remaining forests by reducing deforestation and forest degradation, restoring ecosystem functions, as well as sustainable forest management which includes social forestry **through active participation of the private sector, small and medium enterprises, civil society organizations, local communities and the most vulnerable groups, especially [indigenous] Adat communities...**

Thailand (2016, p6)

Increase national forest cover to 40% **through local community participation**, including in particular headwater and mangrove forests to enhance adaptive capacities of related.

8. INCLUDE THE NEED FOR TECHNICAL AND FINANCIAL SUPPORT TO ACHIEVE RESULTS.

Georgia (2017, p7)

In case of external financial and technical support, the country commits itself to afforest/reforest up to a total of 35,000 hectares, as well as supporting relevant activities to assist natural regeneration in identified areas needing afforestation/reforestation until 2030.

Ghana (2016, p13)

*Promote Sustainable utilization of forest resources through REDD+...Double 10,000ha annual reforestation/afforestation of degraded lands translating to 20,000ha on annual basis...**Conditional to 1,750 (mil \$).***

Nicaragua (2018, p23)

*To face adaptation to climate change, **the country requires financial support to develop priority adaptation measures**, such as: Increase the efficiency in the protection of reserves of biosphere through a program of land management and boost to reforestation, for an amount of investment of approximately 400 million dollars.*

Sudan (2017, p5-6)

*To meet the main goal of 25% forest coverage from the total area of the Sudan by 2030 an area of 790795 hectares needs to be planted annually **if international financial support is provided.***



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RESOURCES

Below is a list of resources and tools that provide guidance on nature-based solutions that address climate challenges, many with particular application for integration in NDCs to the UNFCCC.

- *An assessment framework for climate-proof nature-based solutions.* Calliari, E., Staccione, A. & Mysiak, J. An assessment framework for climate-proof nature-based solutions. *Sci. Total Environ.* 656, 691–700 (2019).
- *Connecting the dots: Elements for a Joined-Up Implementation for the 2030 Agenda and Paris Agreement.* GIZ and WRI
- *Core principles for successfully implementing and upscaling Nature-based Solutions.* Cohen-Shacham, Emmanuelle et al. 2019. *Environmental Science & Policy* 98: 20–29.
- *Enhancing Nationally Determined Contributions through Protected Areas.* WWF
- *Guide to Including Nature in Nationally Determined Contributions: a checklist of information and accounting approaches for natural climate solutions.* CI, EDF, LUCKI, NWF, TNC
- *Pathway for Increasing Nature Based Solutions in NDCs: A Seven-Step Approach for Enhancing Nationally Determined Contributions through Nature-based Solutions.* UNDP
- *Nature-Based Solutions Evidence Platform.* Oxford University Nature-based Solutions Initiatives
- *NDC Adaptation Toolbox.* GIZ
- *NDCs – A Force for Nature? (Second Edition).* WWF

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ACKNOWLEDGEMENTS

This guidance was developed as a contribution to the NDC Partnership and made possible by the Support Project for the Implementation of the Paris Agreement (SPA), which is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and funded by the German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) under its International Climate Initiative (IKI).

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Zusammenarbeit (GIZ) GmbH

Supported by:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

based on a decision of the German Bundestag