

Reasons for Governments to Include Mangroves in Nationally Determined Contributions (NDCs)



Four Reasons for Governments to Include Mangrove-positive Targets within their NDCs

Mangrove ecosystems **provide countless benefits** to coastal countries by **buffering floods and storms, sequestering and storing large amounts of carbon**, and **providing innovative opportunities to finance climate action**. Yet more than half of these ecosystems are at risk of collapse by 2050.¹ There are many reasons to conserve and restore vital mangrove ecosystems, including for climate **adaptation, mitigation, finance, and loss and damage**. To combat the decline of mangrove ecosystems, countries have the opportunity to develop targets that outline goals to conserve, restore, and sustainably manage mangroves within Nationally Determined Contributions (NDCs) to the Paris Agreement.

Reasons to include mangroves in NDCs

Climate Adaptation

Mangrove forests provide natural buffers to coastlines in the face of storms and are important **nature-based solutions for climate adaptation**. Their many other benefits –including aquatic food production, biodiversity conservation, water filtration, and provision of coastal livelihoods– enhance the resilience of coastal communities in the face of climate change. **Countries can harness the adaptation and resilience benefits of mangroves by including and implementing targets to conserve and manage mangroves in the adaptation section of their NDC.**

- The adaptation section of an NDC provides a more accessible entry point for the inclusion of mangrove targets, as the language requirements are more flexible than the mitigation section.
- Adaptation targets may include qualitative explanations of why safeguarding mangroves is essential, along with specific actions for their conservation, restoration, and sustainable management.
- Countries also have the opportunity to link their NDC adaptation targets for mangroves to the Global Goal on Adaptation and National Adaptation Plans (NAPs), building on the gaps perceived through the Global Stocktake and Biennial Transparency Reports.

Did you know?

- Over **100 meters of mangroves can reduce up to 66% of wave energy**,² reducing property damage by more than **US \$65 billion** and **providing flood protection for over 15 million people globally per year**.³
- Mangroves can be included in hybrid “green-gray infrastructure” approaches. **Conservation and restoration of mangroves can often be two to five times cheaper** than constructing traditional infrastructure for coastal protection and climate adaptation.⁴
- Restored natural infrastructure, such as mangroves, can **provide US\$100,000s per hectare in flood protection** benefits over project lifetimes.⁵
- **The vast majority of planting projects fail to restore functional mangrove forests.** Embrace the **Ecological Mangrove Restoration approach** as best practice resulting in better survival, faster growth and a more diverse and resilient mangrove forest.

Climate Mitigation

On average, **mangrove forests sequester and store more carbon than terrestrial forests, per unit area**, meaning they have strong climate mitigation benefits and their conservation and restoration is considered a **nature-based climate mitigation solution**. Mangroves are one of the three marine ecosystems with globally agreed upon methods via the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*⁶ to measure their ability to sequester and store carbon within their biomass and sediments.

- NDC commitments to conserve mangrove areas that are currently unprotected or under protected and/or effectively restore degraded mangrove forests can measurably contribute to a country's climate mitigation strategy.
- Within the mitigation section of an NDC, targets that are expressed as quantitative emissions reduction metrics should include assessments of the necessary area-based conservation and/or restoration goals to meet the emissions target and should follow IPCC Guidance. These commitments can be integrated in economy-wide targets, sectoral targets and/or implementation targets within the NDC mitigation section.
- Developing mitigation targets can be an entry point for including mangroves in a national GHG inventory.
- These NDC targets may support reduction of mangrove degradation and deforestation through measures such as REDD+.

These benefits are complementary to, and not a substitute for, the **urgent need to reduce greenhouse gas emissions** from other sectors such as energy and transport.

Did you know?

- Mangroves store **an estimated 12 billion metric tons of carbon** worldwide.⁷
- On average, mangroves store **394 tonnes of carbon per hectare** in their living biomass and in the top meter of soil.⁸
- While they only cover 0.7% of the world's tropical forest area, **mangrove destruction may account for 10% of emissions linked to deforestation**.⁹
- When mangrove ecosystems are degraded or lost, that carbon is released back into the atmosphere. **Reducing mangrove degradation and loss avoids emissions** and allows mangroves to continue sequestering and storing carbon.

Reasons to include mangroves in NDCs

Climate Finance

Including targets for mangrove conservation, restoration, and management can unlock opportunities for countries to access sustainable blue finance. There are different pathways to finance mangrove conservation and restoration. **Recognizing the benefits of mangroves in NDCs can help countries attract external financing and can catalyze the launch of national strategies for sustainable financing for mangroves and the communities that depend on them.** Reasons to include mangroves in NDCs with a focus on finance include but are not limited to:

- Mangroves support **food security and coastal livelihoods** by providing fish and other aquatic foods, timber, honey, charcoal, and other products and services.
- There are many **innovative finance mechanisms for mangrove conservation and restoration**. These include mangrove “blue carbon” carbon markets, mangrove insurance, payment for ecosystem services schemes, mangrove-positive businesses, blue bonds, Project Finance for Permanence mechanisms, debt for nature swaps, and more.
- Due to mangroves’ mitigation benefits, they can be included in **carbon markets**, which can include **Article 6** transactions and **REDD+**.

Did you know?

NDC targets can be made **conditional** on accessing external finance. By including targets for conserving mangroves in an NDC, countries **signal to the global conservation and climate finance community** that a government is serious about its intent to protect its ecosystems and can attract finance to implement a countries’ goals.

Loss and Damage

Loss and damage refers to the **unavoidable and irreversible impacts of climate change** that occur **despite adaptation and mitigation measures**. Loss and damage can occur from slow-onset events such as sea level rise and sudden onset events like cyclones. It includes both economic losses which include damage to or loss of infrastructure, tourism revenue, and declining fisheries, as well as non-economic losses including biodiversity, ecosystems services, and cultural heritage. **Healthy mangrove systems cut across both categories of loss, while at the same time serving as a critical tool in reducing vulnerability and potential damage.** In the face of climate events, **healthy mangrove ecosystems are better able to cope with sea level rise and provide protection from the impacts of coastal storms and at stabilizing shorelines.**

Climate-induced loss and damage **threatens the security and livelihoods of people who rely on mangrove ecosystems**. The recently operationalized Fund for Responding to Loss and Damage could provide financial support to frontline communities that depend on mangrove ecosystem services. Countries can align their NDCs with the urgency of addressing possible loss and damage by capturing the economic benefits of mangroves systems in reducing vulnerability and increasing resilience while also measuring, conserving, and restoring these critical ecosystems.

Did you know?

According to a 2024 assessment by IUCN, nearly 50% of mangrove ecosystems are at risk of collapse. “Without significant changes by 2050, climate change and sea level rise will result in the loss of:

- 1.8 billion tonnes of carbon stored (**17% of the total current carbon stored in mangroves**), currently valued at a minimum of \$13 billion at market prices in voluntary carbon markets and representing a cost to society equal to \$336 billion based on the social cost of carbon.
- Protection for **2.1 million lives** exposed to coastal flooding (14.5% of current lives exposed) and \$36 billion worth in protection to properties (35.7% of current property values protected)
- 17 million days of fishing effort per year (**14% of current fishing effort is supported by mangroves**).¹⁰

Annex: Additional NDC Task Force Resources & About the Mangrove Breakthrough NDC Task Force

Policy Guidance Documents	Objective
<u>Examples of Mangrove Nationally Determined Contributions (NDCs)</u>	This policy brief provides examples of mangrove NDC targets that countries have submitted to the UNFCCC as their revised NDC 3.0. These examples can serve as a resource for governments who seek to recognize mangroves in their NDC 3.0s.
<u>The Case for Mangrove-Related Indicators under the Global Goal on Adaptation</u>	This guidance document is intended to contribute to the refinement of indicators for measuring progress towards the Global Goal on Adaptation (GGA), specifically focused on target 9d, under the UAE-Belém Work Programme on the UAE Framework for Global Climate Resilience (UAE FGCR).
<u>Template Language for Including Mangroves in Nationally Determined Contributions (NDCs)</u>	This document provides mangrove-positive NDC template language for the conservation, restoration, and sustainable management of mangrove ecosystems that countries can choose from and adapt based on their national circumstances and priorities as they develop their NDC 3.0.
<u>Defining a Mangrove-Positive NDC</u>	2024 guidance developed by the Mangrove Breakthrough NDC Task Force to recommend signatories to the Mangrove Breakthrough with mangrove extent should include ambitious, measurable, time-bound, and area-based commitments to protect, restore, and/or improve the management of mangrove ecosystems in their 2025 nationally determined contributions (NDCs) to the Paris Agreement.
<u>Mangrove Breakthrough NDC Task Force Concept Note</u>	Transforming Endorsements to the Mangrove Breakthrough into Action via Mangrove-Positive 2025 NDCs.
<u>Integrating Mangrove Ecosystems into NDCs through the Global Mangrove Watch</u>	The Global Mangrove Watch represents a critical tool, based on the most accurate science, to support countries in the process of implementing, updating or revising their NDCs, and ratcheting up national and collective ambition on the potential of mangrove ecosystems for climate action.

Mangrove Breakthrough NDC Task Force

The Mangrove Breakthrough Hub and its partners are enabling the mobilization of USD 4 billion by 2030, boosting actions to protect and restore 15 millions of hectares of mangroves— along with the communities and biodiversity that rely on them. The Hub empowers cross-sector collaborations by reinforcing national policies, structuring a global pipeline and driving transformative approaches. The Goals of the Mangrove Breakthrough are as follows:

Halt Loss: Reduce net mangrove losses driven by direct human actions to zero.

Double Protection: Ensure long-term protection is doubled from 40% to 80% of remaining mangrove extent

Restore Half: Restore mangroves to cover at least half of all recent loss.

Sustainable Financing: Ensure sustainable finance to existing mangrove extent.

The Mangrove Breakthrough NDC Task Force brings together policy and mangrove experts from international and local environmental organizations to provide technical policy guidance, coordinate knowledge sharing, and facilitate institutional and stakeholder coordination for Mangrove Breakthrough countries as they prepare their NDC 3.0s to the Paris Agreement.

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