Mangrove Breakthrough NDC Task Force

The Case for Mangrove-Related Indicators under the Global Goal on Adaptation

Oyster Farmers, Dionewar Island, Senegal ©FAO/Sylvian Cherkaoui

Policy Guidance Document

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). Target 9d calls for "**Reducing climate impacts on ecosystems and biodiversity**, and **accelerating the use of ecosystem-based adaptation** and **nature-based solutions, including through their management, enhancement, restoration and conservation** and the protection of terrestrial, inland water, mountain, marine and coastal ecosystems". **Recognising the climate adaptation and resilience benefits of nature-based approaches, specifically concerning mangrove ecosystems**, the document **outlines the case for adopting mangrove-related indicators**, supported by existing data, currently under evaluation for target 9d, noting that these indicators could also be used to measure aspects under other GGA targets.

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Overview of mangrove benefits for climate adaptation and resilience

Nature-based adaptation approaches – consisting of a wide range of ecosystem management activities, such as the sustainable management of forests, grasslands, and wetlands, that **increase the resilience and reduce the vulnerability of people and the environment to climate change** – offer a critical pathway to achieve the targets under the GGA and drive and enhance countries' adaptation and resilience actions. GGA target 9d, focusing on **reducing climate impacts on ecosystems and biodiversity**, is paramount given the widespread and rapid changes in the biosphere, resulting in a multiplicity of inimical impacts and related losses and damages to both nature and people. Explicated in this document are the **specific benefits provided by mangroves in reducing climate impacts on coastal ecosystems and people**; however, it is important to state the unequivocal necessity, in the first instance, for rapid, deep and sustained reductions in GHG emissions, to limit warming to 1.5°C above pre-industrial levels, given that each increment in warming increases adverse impacts on nature and inhibits its ability to support climate adaptation and resilience.

As coastal wetland ecosystems, **mangrove forests provide countless benefits to society and nature by enhancing coastal resilience in the face of flooding and storms and providing critical habitat for biodiversity, including economically important fisheries species.** They also sequester and store large amounts of carbon compared to other ecosystems (per unit area). If mangrove ecosystems are degraded or lost, that carbon is released back into the atmosphere, making their conservation and restoration important for climate mitigation. As such, **the benefits of mangrove ecosystems for climate, people, and nature directly support the attainment of GGA target 9d** in conjunction with advancing progress towards related adaptation and mitigation goals under the Paris Agreement and wider international environmental accords, such as the Kunming-Montreal Global Biodiversity Framework (GBF).

These indicators can be incorporated in countries' Nationally Determined Contributions (NDCs) and National Action Plans (NAPs) to enhance climate adaptation capacities, align targets and indicators across climate and biodiversity plans, and streamline implementation — acknowledging the immense value mangrove ecosystems provide to people, nature, and climate.

Why adopt mangrove-related indicators under the GGA?

The mangrove-related indicators outlined in this document are supported by **existing, multi-scale, near real-time, consistent data** under the Global Mangrove Watch (GMW). Further, they address salient considerations for forming robust indicators to track progress towards GGA targets, informed, in part, by those agreed at the 2024 Bonn Climate Change Conference (FCCC/SB/2024/L.6) and UNFCCC COP29 (FCCC/PA/CMA/2024/L.20).

These include, but are not limited to:

Offering complementarity between thematic and dimensional GGA targets. A critical value of nature-based approaches, such as mangrove management, is that they blend traditional biodiversity and ecosystem conservation approaches with socio-economic development as part of an overall strategy for helping people adapt to shocks and risks associated with climate change. Thus, mangrove-centric adaptation approaches contribute to wider ecosystem and biodiversity integrity – and, in so doing, support other GGA targets, such as water, agriculture, health, etc.

Offering complementarity between the Rio Conventions and other environmental frameworks (the 2030 Agenda for Sustainable Development, etc.) – in particular, correlating with pertinent indicators from GBF to promote indicator alignment between the Convention on Biological Diversity (CBD) and UNFCCC, as both conventions fine-tune their respective monitoring frameworks.

Addressing other priority mapping considerations under the UAE-Belém Work Programme, including **data availability, relevance to specific ecosystems, specific relevance to adaptation** (enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change), **and ability to reflect multi-scale circumstances.**

Achieving UAE Framework for Global Climate Resilience objectives including long-term transformational and incremental adaptation, towards reducing vulnerability and enhancing adaptive capacity and resilience, as well as the collective well-being of all people, the protection of livelihoods and economies, and the preservation and regeneration of nature, for current and future generations.

GMW data supporting submitted indicators under GGA target 9d

1. Mangrove Net Change

Enables governments to monitor changes to mangrove habitat extent over time for the purpose of tracking progress against national and international environmental goals, including climate adaptation. The loss rate and net change are also necessary to understand blue carbon investment potential in addition to climate mitigation potential.

Supports submitted GGA target 9d indicator: SDG 6.6.1: Change in extent of water-related ecosystems over time; (Indicator ID number: 2762)

Benefits:

- **GBF-aligned:** Mangrove extent net change is a component of the headline indicator (A.2) under Goal A of the GBF: Protect and Restore ecosystems.
- **Synergistic with other international frameworks:** Component of SDG Goal 6: Clean Water and Sanitation (indicator 6.6.1).
- **Data availability:** 1990-2024 (as of July 2024) - updated annually.
- **Multi-scale coverage:** Global, National, Sub-National and Local.
- **Adaptation-relevant:** Strengthening resilience and reducing vulnerability to climate change.

Commentary:
Changes in mangrove extent provide valuable information on intervention impact beyond simply the overall extent of protection. Changes in ecosystem extent, including mangroves, is also a crucial factor for measuring the acceleration of nature-based approaches as stipulated in target 9d. However, as mangroves are naturally highly dynamic, further distinguishing between human-driven versus natural changes in extent is beneficial for measuring adaptation. In addition, GMW provides deforestation alerts that could help quantify this metric.

This data is available via the Global Mangrove Watch (GMW), an online platform providing remote sensing data and tools for monitoring mangroves necessary for supporting global ecosystem integrity and effective climate action.

2. Mangrove Protection

Mangrove Protection data allows governments and other stakeholders to track the proportion of mangroves in protected areas per country against national and international environmental goals, including climate adaptation.

Supports submitted GGA target 9d indicator: Coverage of protected areas in relation to coastal marine areas is used as a proxy indicator; (indicator ID number: 337)

Benefits:

- **GBF-aligned:** Coastal or marine areas under protection or other effective area-based conservation measures (OECMs), including mangrove ecosystems, is a component of the headline indicator (3.1) for monitoring and reporting on progress towards Target 3: 30x30.
- **Synergistic with other international frameworks:** Component of SDG Goal 14: Life Below Water (indicator 14.5.1).
- **Data availability:** Updated annually.
- **Multi-scale coverage:** Global and National.
- **Adaptation-relevant:** Strengthening resilience and reducing vulnerability to climate change.

Commentary:
The area of mangroves under protection is a useful proxy, but mangrove deforestation can still occur inside protected areas. Declaring protected areas (PAs) does not automatically preclude deforestation — often, it is sufficient budget to manage PAs that precipitates better ecological outcomes. Therefore, it is paramount to pair PAs with other indicators, such as changes to mangrove habitat extent (outlined above), to safeguard adaptation benefits provided by mangrove ecosystems. Further, in the context of adaptation, tracking mangroves under PAs against proximity to human populations can help ensure PA designations are people-centric and reflect adaptation priorities.

Annex: Additional NDC Task Force Resources

Policy Guidance Documents	Objective
Examples of Mangrove Nationally Determined Contributions (NDCs)	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.
Template Language for Including Mangroves in Nationally Determined Contributions (NDCs)	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.
Defining a Mangrove-Positive NDC	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.
Global Mangrove Alliance Toolkit to achieve the Mangrove Breakthrough	Tools by the Global Mangrove Alliance to support succesful mangrove action
Mangrove Breakthrough NDC Task Force Concept Note	Transforming Endorsements to the Mangrove Breakthrough into Action via Mangrove-Positive 2025 NDCs
Integrating Mangrove Ecosystems into NDCs through the Global Mangrove Watch	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.

Acknowledgements

This guidance document is the product of a collaboration between the Friends of Ecosystem-Based Adaptation (FEBA), the Global Mangrove Alliance (GMA) Policy Working Group, and the Mangrove Breakthrough NDC Task Force.

The document was prepared by Gregory Davies-Jones and Adriana Vidal (IUCN). A special thanks for the guidance and valuable resources provided by the GMA and Global Mangrove Watch (GMW) experts and partners: Susanna Tol (Wetlands International), Maria Nuutinen (FAO), Tom Worthington (University of Cambridge), Chris Brown (University of Tasmania), Elena Roddom (Wetlands International), Lammert Hilarides (Wetlands International), Mark Beeston (Conservation International), Gillian Sawyer (Conservation International), Anelise Zimmer (The Pew Charitable Trusts), and Kristina Rodriguez (UNFCCC High Level Climate Champions). Further, we thank the FEBA Working Group on Targets 8 & 11 of the Kunming-Montreal Global Biodiversity Framework for their review.

The views presented herein do not necessarily represent the official position of any organisations listed.

FEBA

Friends of Ecosystem-based Adaptation (FEBA) is a global collaborative network of more than 100 agencies and organisations working on EbA working jointly to share experiences and knowledge, to improve the implementation of EbA-related activities on the ground, and to raise awareness and understanding of nature-based solutions in adaptation planning processes and multilateral policy frameworks. The CBD COP recognizes FEBA as a key partner "to support Parties in their efforts to promote ecosystem-based approaches to climate change adaptation" (Decision 14/5)."

The coordination of the Friends of EbA network is made possible with the financial support of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV).

Mangrove Breakthrough and 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 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.

Monitoring mangroves in Demak, Indonesia. ©Kuswantoro, Wetlands International