The Mangrove Breakthrough

Climate change is the greatest threat of our time. The ability of mangroves to provide food, shelter and livelihoods, while harbouring incredible biodiversity, building coastal resilience, and acting as immense carbon sinks makes mangrove conservation and restoration an effective strategy to have in our arsenal to combat climate change. With coastal communities already facing the impacts of a changing climate, we urgently need to invest in conserving and restoring mangroves now as nature-based solutions to adapt to this changing planet.

GLOBAL MANGROVE ALLIANCE

RACE TO RESILIENCE

RACE TO ZERO

The Mangrove Breakthrough:

Invest USD 4 billion to secure the future of 15 million hectares of mangroves globally by 2030 through collective action on halting mangrove loss, restoring half of recent losses, doubling protection of mangroves globally, and ensuring sustainable long-term finance for all existing mangroves.

Some progress has been made in recent years to restore and protect mangroves. Rates of mangrove loss appear to have slowed in recent decades, but it is time to set the challenge to turn the tide in mangrove conservation, by both halting future loss, protecting and sustainably managing what we have left, and restoring what has been lost. Over 1 million hectares of mangroves have been lost since 1996, representing ample opportunity for restoration. And long-term protection and financing is the only way to ensure lasting benefits.

To change the course of mangrove action[1], a series of collective actions must be taken by both governments and non-state actors:

- **Commit to a shared global target** to align ambition, provide a systemic vision, and attract public and private capital at the scale needed.
- **Create an investment ready pipeline.** Create a mangrove-solutions investment pipeline that can provide a geographic range of projects across various stages of development, allowing for funding to be distributed to ready-to-scale projects and ensure capital flows at the scale needed.
- **Accelerate radical collaboration and coordination** among mangrove and coastal resilience initiatives, financial players and governments.
- **Scale up financial commitments.** Much more capital is clearly needed to turn commitments into action. There is currently a gap between global ambition for mangrove conservation and restoration and the reality on the ground, where finance to jumpstart new projects - and long-term finance to maintain current efforts - is insufficient.

Building on the Breakthrough Agenda launched at COP26, and the work of the Global Mangrove Alliance, the Mangrove Breakthrough provides a framework for countries, the private sector, and others to join forces and strengthen their actions every year, in every sector, through a coalition of leading public, private and public-private global initiatives scaling up investment in mangrove protection and restoration.

The Breakthrough aims to catalyze the financial support needed to scale proven solutions by working to channel finance to the ground through the Global Mangrove Alliance: a world-wide collaboration between NGOs, governments, academics and communities working together towards a global vision for accelerating change and building a host of opportunities for coastal peoples and biodiversity around the planet.

The Mangrove Breakthrough is a science-based, achievable and measurable goal for non-state actors and governments to collectively restore and protect mangroves at the scale needed, catalyzing financial flows to scale proven solutions and mobilize action on the ground.

Impact of the Breakthrough

In achieving the Mangrove Breakthrough, we estimate a climate benefit of sequestering over 43.5 million tons of CO2 into mangrove biomass and safeguarding or sequestering an additional 189 million tons of CO2 in the soil. Restoring half of recently lost mangroves would potentially benefit 37 commerical marine species of fish, crabs, bivalves and shrimp by providing habitat for over 25 billion juveniles each year.

And the coastal protection provided by mangroves against flooding and storms – securing lives, infrastructure and economic security – has been estimated to reduce flood risk for over 15 million people and over $65 billion worth of property annually.

NOTE 1: this initiative is focusing on finance. While finance is one the main limiting factors, other means of implementation are needed to ensure successful mangrove restoration and protection, including capacity building, technology, and improved governance and

To date, the Mangrove Breakthrough is endorsed by the following initiatives

Please indicate your interest in joining the Mangrove Breakthrough by contacting :
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Annex: The Mangrove Breakthrough in detail

Next 7 years	USD Price per Ha	Goal in ha	Total	Source for Price | Notes
Halt Loss	382	16,800	6.4 million	Global potential and limits of mangrove blue carbon for climate change mitigation (Zeng et al 2021) Note this includes yearly maintenance costs at $25/ha
Restore Half	1,097	409,200	450 million	Su, J., Friess, D.A. & Gasparatos, A. A meta-analysis of the ecological and economic outcomes of mangrove restoration. Nat Commun 12, 5050 (2021). https://doi.org/10.1038/s41467-021-25349-1
Double Protection	382	6,100,000	2,330 million	Global potential and limits of mangrove blue carbon for climate change mitigation (Zeng et al 2021) Note this includes yearly maintenance costs at $25/ha
Ensure sustainable finance to existing mangrove extent	150	8,583,200	1,287 million	Global potential and limits of mangrove blue carbon for climate change mitigation (Zeng et al 2021) These hectares may not be at risk of loss or require additional protections, but this goal aims to ensure sustainable financing to existing protection and management regimes. N.B. Current extent (2020) per Global Mangrove Watch = 14.7 million ha. We subtracted the other goals from this to ensure no double counting with above lines on protection and halting loss.
		Total Hectares	15,109,200	
		Total needed investment	4.07 billion	Yearly investment need through 2030: 600 million

Annex:
The Mangrove Breakthrough in detail

Halt Loss

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

Rates of mangrove loss appear to have slowed in recent decades, and it is an opportune moment to set the challenge to halt further losses. While we can aspire to halt all losses, this target refers to direct, and therefore manageable, human driven loss. However, recognising that mangroves are dynamic ecosystems, we acknowledge the possibility of making further gains as mangroves naturally colonise new locations[1]. Any such gains should be seen to offer additionality to the gains made by halting losses of remaining cover.

Between 2010-2011 over, ~ 60,000 ha were lost, and we can estimate that 37,300 ha of this was due to direct human impacts. To bring such losses to zero by 2030 we need to start to reduce loss rates from now. Assuming a linear rate of reduction in human driven losses this would save approximately 16,800 ha by the end of 2030 compared to business as usual.

Restore Half

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

Over 1,100,000 ha of mangroves have been lost since 1996, the year that sets the baseline for our definition of "recent" loss; however, not all of these are restorable due to erosion or urbanisation. It is estimated that 818,300 ha of mangroves are considered "restorable" and the goal seeks to restore half of this area by 2030. This is a deeply ambitious goal. Although the target does not include areas which would be near-impossible to restore, the "restorability" even of the remaining areas is likely to be highly variable. Assuming science-based restoration practices are employed and result in long-lasting restoration restoring half of recent loss would be 409,150 ha by 2030 (~51k ha a year).

Double protection

Ensure long-term protection is increased from 40% to 80% of remaining mangroves.

With 41% of the world's mangroves currently in protected areas, mangroves are already well covered compared to many other ecosystems. However, fundamental to lasting reduction of loss and restoration efforts is ensuring that those efforts are not reversed, through the incorporation of mangroves into permanent forms of protection. These include traditional protected areas, but also Other Effective Area-based Conservation Measures (OECMs), which could encompass indigenous lands and areas of sustainable use where mangroves are protected from clear-felling and conversion. Given the current global mangrove area and what is already protected, the Mangrove Breakthrough aims to secure a further 6,100,000 ha under conservation measures.

Sustainable Financing

Ensure sustainable finance to existing mangrove extent

This metric is not included in the Global Mangrove Alliance's target. The hectares accounted for in this line are calculated by using the Global Mangrove Watch's 2020 extent and subtracts out the goals on doubling protection and halting loss. While these mangroves are not perceived as under threat or degraded, it is important to note that there is a cost to maintaining mangroves and ensuring sustainable finance flows is critical to ensure that they remain safe into the future. The Mangrove Breakthrough is including this metric to show the full cost to financing all mangroves across the world. The $25 per hectare is an average and will vary greatly across countries.

The Mangrove Breakthrough will ensure sustainable finance for existing mangrove extent in order to maintain and sustain existing coverage of 14.7 million hectares.

References: [1] D. Lagomasino, T. Fatoyinbo, S. Lee, E. Feliciano, C. Trettin, A. Shapiro, M.M. Mangora, Measuring mangrove carbon loss and gain in deltas, Environmental Research Letters 14(2) (2019) 025002. 10.1088/1748-9326/aaf0de. [2] P. Menéndez, I.J. Losada, S. Torres-Ortega, S. Narayan, M.W. Beck, The Global Flood Protection Benefits of Mangroves, Scientific Reports 10(1) (2020) 4404. 10.1038/s41598-020-61136-6. Note: this study is providing some indication of how such values play out, although current models are insufficient to determine more exact values from specific locations or restoration actions. [3] All mapping data comes from Global Mangrove Watch: https://www.globalmangrovewatch.org