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The Coral Reef Breakthrough

An urgent call to action for 25% of life in our ocean

The Coral Reef Breakthrough aims to secure the future of at least 125,000 km² of shallow-water tropical coral reefs with investments of at least USD 12 billion to support the resilience of more than half a billion people globally by 2030. This will be achieved through a suite of actions:

- **Action point 1: Stop drivers of loss:** Mitigate local drivers of loss including land-based sources of pollution, destructive coastal development, and overfishing.
- **Action point 2: Double the area of coral reefs under effective protection:** Bolster resilience-based coral reef conservation efforts by aligning with and transcending global coastal protection targets including 30by30.
- **Action point 3: Accelerate Restoration:** Assist the development and implementation of innovative solutions at scale and climate smart designs that support coral adaptation to impact 30% of degraded reefs by 2030.
- **Action point 4: Secure investments** of at least USD 12 billion by 2030 from public and private sources to conserve and restore these crucial ecosystems.

Coral reefs exist in more than 100 countries and territories and, whilst they cover less than 1% of the seafloor, coral reefs support at least 25% of marine species; integral to sustaining Earth's vast and interconnected web of marine biodiversity and provide ecosystem services valued up to \$9.9 trillion annually¹. For more than one billion people, including vulnerable coastal communities, whose daily lives are inextricably linked with life below water, healthy coral reefs are sources of sustainable food, livelihoods and income generation, protection from

storm surge, medicinal properties, and significant cultural heritage. Coral reefs are essential to the security, resilience, and climate adaptation of many of the most climate-vulnerable nations on Earth, including low-lying island states. Yet the functional existence of these critical ecosystems is at stake due to the climate crisis and a myriad of other anthropogenic stressors. The window for protecting these ecosystems is closing rapidly, and scientists globally are calling on public and private actors to take action for the future of coral reefs.

The Coral Reef Breakthrough is grounded in science-based, measurable, and achievable goals for state and non-state actors to collectively conserve, protect, and restore coral reefs at the scale that is needed to secure the future of these vital ecosystems and the highly valuable contributions they provide to people.

It is a global vision aiming to convene and catalyse actions from all stakeholders (Indigenous peoples, coastal local communities, governments,

public and private financial institutions, science, philanthropies, the private sector) for scalable coral reef actions.

This will be achieved by catalysing public and private financial flows and supporting sustainable investments. These will activate and enhance proven solutions and mobilise actions to achieve the Sharm-El Sheikh Adaptation Agenda's Ocean and Coastal Impact System targets^A and the Kunming-Montreal Global Biodiversity Framework^B, adopted at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity.



All actions contributing to reach the targets of the Breakthrough should be in line with the following, as appropriate:

- **Conserve the integrity, functionality, and resilience of coral reef systems:** Strengthen our collective and collaborative efforts to conserve the integrity and resilience of coral reef ecosystems, particularly those most resilient to climate change. Such efforts require tackling greenhouse gas emissions in parallel to addressing local drivers of coral reef decline with concrete actions such as improving wastewater treatment, designing more protected areas as no-fishing zones, and managing run-offs from agricultural practices.
- **Employ best-practice, climate-smart guidelines for intervention:** Engage in targeted, strategic efforts to address coral bleaching, and repair degraded coral reef ecosystems, supporting natural recovery with innovative new techniques where appropriate.
- **Monitor strategically:** Track the local, regional, and global impacts of these efforts with Global Biodiversity Framework indicators to show progress on the delivery of the Breakthrough targets.
- **Mobilize sustainable financing:** Ensure that efforts to close the biodiversity finance gap include diverse sources of funding for coral reefs, including through sustainable and long-term financing and investment vehicles, and consideration of natural capital accounting and development of nature positive economies.
- **Consider local context:** Design conservation efforts and interventions focused on locally led adaptation and resilience building, in partnership with reef-adjacent communities, considering specific drivers of declines, connectivity with associated ecosystems, and social-economic perspectives to.
- **Prioritize reefs that have the greatest value for nature and people:** Actions should target reefs that are potential refugia from thermal stress of climate change, and those that have high economic, social, and cultural values for people.
- **Empower people:** Undertake all conservation, restoration, monitoring, and finance activities with the explicit support, engagement, and leadership of local communities, including Indigenous peoples, that live alongside coral reefs and/or depend on them for their food or economic security.
- **Equity and Inclusion:** Mobilize financing and technical support for reef communities, ensuring equitable local access to, and benefit from, efforts to conserve, protect, and restore reefs.

A - Sharm-El-Sheikh Adaptation Agenda, 2022: [The global transformations towards adaptive and resilient development](#)
B - [Kunming-Montreal Global Biodiversity Framework](#)

Impact of the Breakthrough

Achieving the Coral Reef Breakthrough will mean preventing the functional extinction of one of the world's most threatened², yet most valuable, and most biodiverse ecosystems.

The target of 125,000 km² exceeds the 30% target set by the Kunming-Montreal Global Biodiversity Framework to highlight the urgency and priority for the world to save coral reefs. Targets from the Coral Reef Breakthrough will be instrumental in meeting Sustainable Development Goals,

particularly SDG14. Actions to conserve, protect, and restore 50% of the world's coral reefs could potentially generate over \$18 billion in tourism revenues annually³, preserve important fishing grounds and spawning aggregations for commercially important fisheries, and safeguard \$5.5 billion of coastal economic value through shoreline protection⁴. Securing the future of reefs identified as climate refugia would also provide hope for lasting recovery and potential to resist climate threats in the decades to come.

Annex 1: Action points in detail

Action point 1

Stop drivers of loss: Mitigate local drivers of loss including land-based sources of pollution, destructive coastal development, and overfishing.

The climate and biodiversity crises, compounded by local anthropogenic stressors, such as land and marine pollution, unsustainable tourism, and coastal development, overfishing and other harmful extractive activities, continue to pose an existential threat to coral reefs. However, mitigating these drivers of loss can lead to the recovery of coral cover and associated biodiversity, functions and services. For example, local reef management in the

Dominican Republic that integrates water quality treatment, restricts vessel traffic, and regulates fishing has led to improved reef health indicators⁵.

The Coral Reef Breakthrough will support efforts to mitigate and stop local anthropogenic stressors to coral reefs, particularly in coastal areas neighbouring active conservation measures of protection and restoration.

Action point 2

Double the area of coral reefs under effective protection: Bolster resilience-based coral reef conservation efforts by aligning with and transcending global coastal protection targets including 30by30

Target 3 of the Kunming-Montreal Global Biodiversity Framework calls for at least 30% of terrestrial and inland water areas, and of marine and coastal areas to be under effectively conserved and managed through ecologically representative, well-connected, and equitably governed systems of protected areas and other effective area-based conservation measures. The UNEP-WCMC estimates that ~60,000 km² of coral reefs are under protection, and the Coral Reef Breakthrough aims to secure a further 65,000 km² of coral reefs under conservation measures. Ensuring that the conservation measures in place are effective is of utmost importance. Existing and

new initiatives should focus on resilience of reefs and associated communities, and bolster capacity for coral reef ecosystems to adapt to changing conditions while still delivering important ecosystem services. Sustainable management should always respect and protect Indigenous and local knowledge and traditional perspectives, and when application with appropriate protections for the knowledge holders, integrate such knowledge and perspectives into sustainable management strategies. Reef areas identified as refugia from pressures of climate change should also be prioritised.

Action point 3

Accelerate Restoration: Assist the development and implementation of innovative solutions at scale and climate smart designs that support coral to impact 30% of degraded reefs by 2030

Target 2 of the Kunming-Montreal Global Biodiversity Framework calls for the effective restoration of at least 30% of degraded terrestrial and inland water areas, and of marine and coastal areas; and for the restoration efforts to enhance biodiversity and ecosystem functions and services, ecological integrity, and connectivity. The Global Coral Reef Monitoring Network estimates that ~ 35,000 km² of coral reefs have been lost since 2009 (GCRMN 2020). Meeting Target 2 would thus require the restoration of 10,500km². Under that target, the term “restoration” recognizes a broad range of interventions aimed at repairing degraded reef structure and function and boosting the potential for coral reefs to adapt to future conditions. This is an ambitious but necessary goal as the total area of restored coral reefs globally was still under 1 km² as of 2020⁶.

Achieving the ambitious target of the Coral Reef Breakthrough requires simultaneously protecting

what we have and rebuilding what we have lost. Effective restoration of coral reef ecosystems should prevent reefs from becoming dominated by algae, prevent loss of biodiversity, allow reefs to maintain structural rugosity, and keep pace with warming oceans and sea level rise. Restoration programs and projects should (a) be supported at multiple scales, (b) integrate local stress mitigation (e.g., fishing and pollution regulations), (c) boost corals' ability to adapt to a warming ocean, and (d) actively include and engage local stakeholders. Programs and projects in reef-rich, low-income nations should be prioritized. The exchange of knowledge and technical capacity between developed and developing reef nations should also be supported (e.g., via the Coral Restoration Consortium). The Coral Reef Breakthrough should support funding for research and development to increase the scale at which reefs can be restored with resilient and heat-adapted corals.

Action point 4

Secure investments of at least USD 12 billion by 2030 from public and private sources to conserve and restore these crucial ecosystems

The Coral Reef Breakthrough will work with existing financial mechanisms to secure up to at least USD 12 billion for at least 125,000 km² of coral reefs by 2030. This investment will enable more effective coral reef management including water quality management, coastal management, and local and regional regulations. Unlocked investments should strive for capital flows at the scale needed and allow equitable distribution of funding. There should also be a diversification of funding opportunities, particularly private funding with the potential to scale up existing efforts in space and time.

Data gaps in coral reef conservation finance only allow for estimates of required investments to be drawn from global ocean studies of needs and funding gaps^{7,8}. The target of USD 12 billion by 2030 illustrates that radical commitments are necessary given the dire state of coral reef health worldwide, and ocean conservation at large is chronically underfunded⁹. This Coral Reef Breakthrough should help support the funding for studies to properly estimate the coral reef funding data gap and elucidate the cost of effective coral reef conservation in the face of climate change.



Annex 2: Target Calculations

Spatial Target

The spatial target of 125,000 km² was calculated based on the global dataset developed by the [World Resource Institute \(WRI\)](#) estimating a total global coral reef area of 249,713 km². This dataset has a resolution of 500m is widely used for other global products (e.g., [GCRMN](#), [TNC Mapping Ocean Wealth explorer platform](#)).

The choice of securing 50% of the global coral reef area was based on Target 3 of the Kunming-Montreal Global Biodiversity Framework that calls for the effective conservation and management of at least 30% of terrestrial and inland water areas, and of marine and coastal areas. With coral reefs projected to the ecosystem most at risk of collapse in the face of climate change, and an estimate from the UNEP-WCMC that ~60,000 km² of coral reefs are under protection, experts agreed that this Coral Reef Breakthrough should make the ambitious statement to secure at least 50% of global coral reefs by 2030.

Funding Target

The funding target was calculated based on "The cost of saving our oceans – estimating the Funding gap of sustainable development goal 14" study published by Johansen and Vestvik (2020) evaluating the costs of meeting SDG14 at USD 174.5 billion/year⁷, and widely used to describe the funding gap in ocean conservation⁸. The Coral Reef Breakthrough funding target of USD 12. billion was calculated as 1% of that target for 7 years (2023-2030) on the basis that coral reefs cover ~1% of oceans.



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