



Aligning Marine Carbon Dioxide Removal Research with CBD Goals to Reduce Impacts on Marine Biodiversity

Position Paper for the Seventeenth Conference of the Parties (COP17) to the Convention on Biological Diversity (CBD)

Who are we?

This position paper is based on work by the UN Ocean Decade Project "Ocean Mitigation Impacts to Ecosystems and People" and the associated International Council for Exploration of the Sea (ICES) Working Group "mCDR Interactions with Ecosystems, Fisheries, and Aquaculture". This position paper rests on the contributions of Indigenous Peoples, coastal community members (particularly from fisheries and aquaculture), government and academic scientists, and policy experts working at the forefront of the intersection of mCDR and ecosystem provisioning services.

Why marine carbon dioxide removal research and why CBD?

Actions are needed to support healthy marine environments, ecosystem services, and coastal communities in the face of climate change. The Intergovernmental Panel on Climate Change (IPCC) has determined that carbon dioxide emissions must be drastically reduced and that negative emission technologies are needed to meet climate goals. Due to the ocean's potential to store large amounts of carbon for long periods of time, ocean-climate solutions such as marine carbon dioxide removal (mCDR) are being researched and show potential promise. If they are to be compatible with the protection of marine ecosystems and provisioning services, any proposed climate solution needs to be responsibly and safely researched to assess carbon removal efficacy and potential positive and negative impacts on environmental and ecological processes. Such actions are also necessary to meet CBD's four over-arching goals for 2050: reducing biodiversity loss, sustainable use, fair benefit-sharing, and adequate means of implementation. Ensuring ecological and environmental impacts, including conservation of biodiversity, are monitored and assessed is critical for proper evaluation of potential mCDR pathways; CBD has the unique role to ensure biodiversity objectives are factored into discussions of emerging ocean-climate solutions.

How does CBD relate to the interactions between mCDR and Indigenous Peoples and coastal communities?

Interactions between mCDR and Indigenous Peoples and coastal communities (including fisheries and aquaculture) align with the CBD COP17 theme "Taking Action for Nature" and call for ensuring that emerging ocean-climate solutions monitor and diminish environmental and ecological risks, consider interactions with ecosystem services, and center decision-making and benefits around Indigenous Peoples and coastal communities (Agenda Item 10). These goals align with the first Global Review (Agenda Item 9(a)) of progress under the Kunming-Montreal Global Biodiversity Framework (KMGBF) as well as recurring agenda items on marine and coastal biodiversity (Agenda Item 18c), biodiversity and climate change (Agenda Item 18a), and cooperation with other conventions such as UNFCCC and the newly-in-force Biodiversity Beyond National Jurisdiction (BBNJ) Agreement (Agenda Item 13). The Global Review offers an opportunity to address the cross-sector gap to link biodiversity recovery with climate stability (Target 8), sustainable use of marine ecosystems (Target 5, 9, 10) and implementation of rights-based conservation (Target 14, 21, 22). With the recent entry into force of the BBNJ Agreement, the high seas now have binding environmental impact assessment and area-based management tool provisions, which are mechanisms with relevance to mCDR research and deployment in the high seas and associated environmental and ecological impacts, including consultation of Indigenous Peoples and coastal communities.

What previous CBD decisions relate to mCDR?

CBD (like the London Convention/London Protocol, LC/LP) addresses ocean-based climate interventions primarily under the umbrella terms "geoengineering" or "marine geoengineering", with some decisions specifically referring to "ocean fertilization". Recent CBD decisions (XI/20, XIII/14) have similarly reaffirmed the non-binding prohibition (IX/16C) on climate-related geoengineering activities that could affect biodiversity, pending adequate scientific justification; IX/16C exempts only 'small-scale scientific research within coastal waters', while X/33 more broadly excludes small-scale, controlled research, subject to prior environmental assessment, from its scope. However, precautionary governance should differentiate among climate interventions according to mechanism, scale, reversibility, environmental impacts, and evidence base, which requires dedicated research to understand potential impacts of different mCDR techniques across aspects and perspectives.

How is the KMGBF relevant to the intersection of mCDR and Indigenous Peoples and coastal communities?

Target	Focus	Relevance to mCDR and Indigenous Peoples and coastal communities
8	Minimize the impacts of climate change on biodiversity and build resilience	Research is needed to assess mCDR impacts on biodiversity: Frames mCDR as a potential climate solution that may minimize ocean acidification impacts on small temporal and spatial scales, but research is needed to properly assess potential environmental and ecological risks and benefits
5, 9, 10	Sustainable, safe use and management of wild species, fisheries, and aquaculture	Collaboration can help ensure mCDR sites minimize impact: Highlights that mCDR siting, deployment, and monitoring must not compromise the safety, sustainability, or productivity of existing marine use
14, 21, 22	Mainstream biodiversity into decisions, ensure accessible knowledge, and increase participation and accessible justice	mCDR governance requires informed, participatory decision-making: Establishes the governance expectations for mainstreamed knowledge-informed, consent-based, and participatory processes with consultation, engagement, and inclusion from the onset of projects

What do we recommend?

We recommend clarifying how the KMGBF applies to mCDR research, including through technique-specific, evidence-based pathways rather than treatment solely under the a priori marine geoengineering grouping (IX/16C; XI/20; XIII/14). This clear, differentiated consideration is needed within relevant governance frameworks to collect scientific information through a precautionary approach that evaluates positive and negative impacts on environmental, ecological, and social interactions and includes engagement of Indigenous Peoples and coastal communities from the onset. Such an approach would strengthen the international commitment to a precautionary and science-focused approach to mCDR research and align the CBD with the LC/LP and other global frameworks, reducing the risk of regulatory fragmentation. Without the following recommended actions, we risk mCDR activities proceeding with insufficient research on environmental and ecological impacts and inadequate inclusion of Indigenous Peoples and coastal communities.

#	Recommendations	CBD Provision	COP17 Agenda Item
1	mCDR research: Ensure that legitimate scientific research on mCDR is responsible, ethical, and thoroughly considers environmental, ecological, and social interactions, with prior engagement of Indigenous Peoples and coastal communities, including fisheries and aquaculture farmers	Article 14 (impact assessment); IX/16C, para. 4, X/33, para. 8(w) (controlled scientific research)	18 (a), 18(c); 10(b)(i), Task 1.2
2	Data: Improve data by strengthening its in situ collection, transparency, consolidation, and ethical sharing, while respecting local and Indigenous Knowledge	Articles 7/17 (monitoring, information exchange); Article 8(j); Target 21 (free, prior, and informed consent, FPIC)	11; 12(b)
3	Decision-making: Elevate rights-based participation, including FPIC, co-development, and co-creation with Indigenous Peoples, coastal communities, and relevant coastal sectors	Article 8(j); Target 22 (participation and access to justice/information)	10; 10(b)(i), Task 1.2

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References: [IPCC, 2022 WG III](#); [ICES WkmCDR, 2025](#); [Grabb et al., 2025 ICES JMS](#); [Grabb et al., 2026, ICES JMS](#)

