

RIFS-Blogpost

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Autor*innen: Röschel, Lina]

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Towards Equitable Governance of Marine Carbon Dioxide Removal]



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A meeting of the parties to the London Convention and London Protocol in October 2024.

! Zum Aktualisieren der Textelemente, Zitation markieren und dann F9 drücken !

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The ocean absorbs around a quarter of human-made carbon dioxide (CO₂) emissions and plays a crucial role in buffering the world against even more severe climate change effects and impacts – placing it at the heart of the global climate system. As we near the 1.5°C climate threshold, new proposals are emerging to make more active use of the ocean for climate change mitigation, particularly through marine carbon dioxide removal (mCDR) technologies such as ocean alkalinity enhancement or biomass sinking. These approaches aim to enhance the sequestration and storage of atmospheric CO₂ in ocean systems. The so-called ‘negative emissions’ generated through mCDR could help countries to achieve carbon neutrality by mid-century. Indeed, the Intergovernmental Panel on Climate Change (IPCC) positions CDR as key element along the pathway of keeping within the 1.5 and 2°C targets set by the Paris Agreement.

The proposed mCDR activities are largely researched and developed in the Global North. In addition to their climate benefits, they could also have unintended transboundary impacts on the marine environment and related ecosystem services. Existing governance mechanisms have predominantly framed mCDR as a technical issue of environmental risk management, however, this framing may obscure deeper power relations, historical injustices and structural exclusions, inclusions and polarizations that shape participation in global ocean governance.

Marine carbon dioxide removal raises fundamental questions about environmental justice related to governance: Who gets to decide whether, where, and how we intervene in the ocean to address climate change? The technologies could have profound impacts on ocean ecosystems and the communities that depend on them, many of which are located in the Global South and are already



disproportionately affected by climate change. Governance of mCDR currently falls under fragmented international frameworks, such as the London Convention and Protocol, and is shaped by technical and risk-management discourses. This focus risks sidelining broader questions of justice – who participates in decision-making, whose knowledge and priorities are acknowledged, who benefits and who bears the risks?

At the Research Institute for Sustainability at GFZ, I have been given the opportunity to develop a transdisciplinary PhD project that investigates how equity can be placed at the centre of mCDR governance. This involves developing an analytical framework that brings together the many dimensions of justice (e.g., environmental, epistemic, and intergenerational) while remaining attentive to the lived experiences of those often excluded from decision-making.

This research adopts a transdisciplinary approach, engaging with policy actors, scientists, civil society, and Indigenous and Global South representatives to co-create understandings of what equitable governance for mCDR could look like. This research aims not only to critique existing governance processes but also to identify pathways toward more just and inclusive practices.

Though legally fragmented, the ocean is ecologically indivisible and decisions made about its use for climate mitigation will have far-reaching consequences. Ensuring that governance frameworks are equitable is not just a matter of principle; it is essential for the legitimacy, effectiveness, and the sustainability of ocean-based climate interventions.



