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# Blue carbon pilot project in South Africa

**Improving framework conditions and measures to contribute to the conservation of biodiversity, functioning ecosystems and carbon storage.**



## Framework conditions

One of the most valued ecological roles of marine ecosystems is carbon storage and sequestration, the naturally stored carbon is known as “Blue Carbon”. As climate change continues to escalate, it is unlikely that emissions reductions alone will be sufficient to curb the current trends in global warming – and therefore enhancing CO<sub>2</sub> removals will be necessary. As a signatory to the Paris Agreement, South Africa has made commitments through its Nationally Determined Contribution and Adaptation Communication towards reducing emissions, while still aiming to achieve a just transition towards a resilient society and low-carbon economy. While the largest sources of CO<sub>2</sub> emissions in the country are from the energy sector, the land sector has the largest potential to contribute towards CO<sub>2</sub> removals, and this could include up to ~57.2 Gg CO<sub>2</sub> associated with active restoration in blue carbon ecosystems, estimated conservatively, by 2050. Additionally, South Africa actively implements Ecosystems-based Adaptation and coastal sector responses to adapt to frequently occurring extreme events like storm surges and slow onset impacts of climate change such as ocean acidification. The National Biodiversity Assessment

(2018) led by DFFE, shows that wetlands and estuaries are the most threatened ecosystem types in South Africa, with the least protection. Healthy blue carbon ecosystems also provide additional valuable ecosystem services, such as providing a nursery function for fish and coastal protection.

In 2021, a GIZ supported “Scoping Study for a Blue Carbon Sinks Assessment in South Africa” led by its partners, the national Department of Forestry, Fisheries and the Environment (DFFE), was carried out to provide information on the carbon storage and sequestration potential of blue carbon ecosystems in the country, and identify climate change mitigation opportunities with adaptation co-benefits from these ecosystems. This information is needed if blue carbon ecosystems are to be included within South Africa’s national greenhouse gas (GHG) inventory as part of the Agriculture, Forestry and Other Land Use (AFOLU) sectoral ambitions. This information also supports the response planning guided by the National Climate Change Adaptation Strategy for the environmental sector, including vulnerable coastal communities, infrastructure and threatened ecosystems. The

scoping study for a Blue Carbon Sinks Assessment has served as a critical step towards ensuring blue carbon ecosystems in South Africa are secured for the critical ecosystem services that they provide, as well as for their opportunity to be mainstreamed into climate change mitigation and adaptation strategies.

A nature-positive recovery is an economic recovery plan that fosters stimulus programmes aimed at meeting economic and social targets, while having a positive impact on climate protection and the conservation, restoration, and the sustainable management of ecosystems. As a result of the COVID-19 pandemic deepening the economic crisis in South Africa, the government developed an Economic Reconstruction and Recovery Plan (ERRP) that is aimed at stimulating equitable and inclusive growth. The global project “Design and Implementation of the New Global Biodiversity Framework” (BioFrame), funded through the International Climate

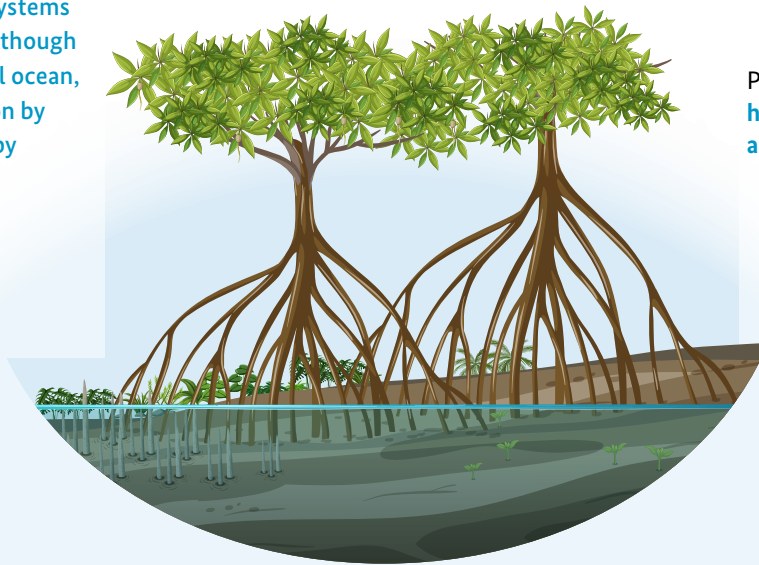
Initiative (IKI) of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), responds to this through supporting key stakeholders in Indonesia, Costa Rica, and South Africa towards a nature-positive recovery following the COVID-19 pandemic.

### Project approach in South Africa

In South Africa, the IKI BioFrame project sets out to create practical evidence for a nature positive recovery through the restoration of blue carbon ecosystems. It provides an opportunity to take further the work on Blue Carbon ecosystems in South Africa by supporting the Department of Forestry, Fisheries, and the Environment (DFFE) with the prioritization of Blue Carbon ecosystems for design and implementation of restoration measures as part of operationalizing the Kunming-Montreal Global Biodiversity Framework.

## Benefits of healthy and intact blue carbon ecosystems

Carbon stored in marine ecosystems is known as “Blue Carbon”. Although it covers only 2% of the global ocean, 50% of total CO<sub>2</sub> sequestration by ocean sediments is captured by coastal habitats.



Positive impact on **human, environmental and economic health.**



Improved **flow and tidal exchange** along the estuary.

Up to **1,160** ha of blue carbon ecosystems can be **restored by 2050** leading to CO<sub>2</sub> removals of ~ 57.2 Gg CO<sub>2</sub>e.



Increased **awareness** and **data availability**, better ecosystem management.



Improved **water quality.**

### Salt marsh

Salt marshes constitute **67%** of the total national blue carbon stock of **4000 Gg C**.

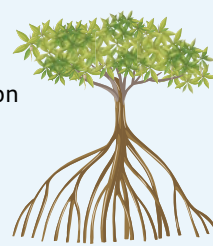
**14,713** ha



### Mangroves

Mangrove ecosystems have the greatest carbon storage per unit area (**253 – 534 Mg C/ha**).

**2,087** ha



### Seagrass

With 1,700 ha, seagrass covers the smallest area.

**1,700** ha





In addition, the IKI BioFrame project will also support a pilot project, focused on the implementation of scalable habitat restoration. As well as a case study and knowledge-sharing documentation to create an evidence base that showcases how blue carbon habitat restoration initiatives can be implemented at a local scale to improve livelihoods, benefit biodiversity, foster climate resilience, as well as capture opportunities to scale up from local scale implementation.

## Activities and outlook

Main activities from the pilot will include implementing rehabilitation interventions, training workshops, and stakeholder consultations with local businesses, local community members, and Responsible Management Authorities (RMAs) inclusive of government stakeholders. These activities are to be carried out in close cooperation with other local organisations. Outcomes of the interventions will be restored ecosystems, improved ecological functionality and services of ecosystems, a monitoring framework for blue carbon data collection and a guideline on integration into institutional planning and monitoring tools, as well as improved local awareness about the opportunity for nature positive recovery. A case study and knowledge products created from the



pilot will provide policy support for the DFFE and provide evidence for the international community about restoration for climate and biodiversity benefits in the run up to the implementation of the Kunming-Montreal Global Biodiversity Framework. Furthermore, it will seek to identify sustainable business opportunities for micro, small and medium enterprises (MSMEs), fishers and farmers in the tourism sectors and, therefore, contribute to a nature positive recovery.



## Sources

- [Nature-positive Recovery | Internationale Klimaschutzinitiative \(IKI\) \(international-climate-initiative.com\)](#)
- [Biodiversity relevant jobs | Internationale Klimaschutzinitiative \(IKI\) \(international-climate-initiative.com\)](#)
- [Climate Support Programme IV: Climate Support Programme IV | Internationale Klimaschutzinitiative \(IKI\) \(international-climate-initiative.com\)](#)

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