



GLF CLIMATE HYBRID CONFERENCE | #GLFClimate



MAKING BLUE CARBON COUNT

MARKET OPPORTUNITIES FOR MANGROVE RESTORATION

11-12
NOVEMBER
2022



WHITE PAPER

Author:
CIFOR-ICRAF

© Bachellier Christian from Flickr



‘Blue carbon’ refers to the world’s carbon stores that are stashed in the plants and soil of coastal and marine ecosystems, such as mangrove forests, tidal marshes, algae and seagrass meadows.

As we straddle the [UN Decade on Ecosystem Restoration](#) (2021–2030) – and countries pursue means to meet the emission reduction targets stipulated in their Nationally Determined Contributions (NDCs) to the Paris Agreement on climate change – the quest to save and grow our blue carbon stores through restoration and protection is gaining increasing attention.

However, many blue carbon ecosystems are facing tremendous pressure from unsustainable economic activities, with far-reaching impacts for climate, biodiversity and livelihoods.

A magnifying glass on mangroves

Mangroves can store [four to six times as much carbon as tropical rainforests](#) through their combination of high productivity and secured mineralized soil carbon storage. Globally, they host around 1.6 percent of tropical forests’ biomass, while occupying only 0.6 percent of their area.

These salty powerhouses also slow coastal erosion and protect human settlements from flooding and big waves. They house an impressive range of biodiversity, including providing critical fish nurseries. As such, they make key contributions to nutrition, dietary diversity and food security for many coastal communities through the range and abundance of foods they provide, as well as a critical income opportunity for many community members. Coastal communities often also use these forests for timber, fuelwood, medicinal purposes, crafts and more.

Yet, **it is estimated** that at least 35% of the world's mangrove forests were lost between 1980 and 2000, and deforestation and degradation continue apace, particularly for other land use purposes such as aquaculture and agriculture, and to make use of their wood.

Restoring and conserving the world's mangroves could protect 18 million people from coastal flooding and boost the productivity of the planet's fisheries. But to do so, multisector and multilevel collaboration will be critical.

Indonesia's mangroves: A case in point

The Indonesian archipelago houses **about a fifth** of global mangroves; the largest extent of mangrove ecosystems in the world. Avoiding further emissions from the more than three billion metric tons of carbon they contain would provide huge market opportunities. The

World Bank **estimates** that these mangroves provide around USD 15,000 per hectare per year in benefits, with some providing benefits totalling nearly USD 50,000 per hectare per year.

As such, the high rates of mangrove degradation and loss in Indonesia pose significant threats to the country's economy and population. In this context, the Government of Indonesia has set ambitious strategies to develop a 'blue economy' and achieve a **Forest and Other Land Use (FOLU) Net Sink** by 2030, which includes a target to restore 600,000 hectares of mangrove forests by 2024.

To facilitate public-private partnership, where people are in the middle, a strong governance system is required to enable institutions and regulatory frameworks to be operationalized effectively. National government policies need to be harmonized with local government and community agendas in order to smooth out financial streams.

Blue carbon natural capital will receive public attention and attract investment when public policies recognize the rights and responsibilities of stakeholders in accessing information. Moreover, clear procedures and modalities can stimulate a range of financial mechanisms, including those that ensure fair and just benefit sharing.

To this end, **the Center for International Forestry Research–World Agroforestry Centre** (CIFOR-ICRAF) has been carrying out ground-breaking research on Indonesia's mangrove ecosystems and coastal communities for decades. It is currently in the midst of an ongoing collaborative effort with various Indonesian partners supported by **the US Agency for International Development** (USAID) under **the Sustainable Wetlands Adaptation and Mitigation Program** (SWAMP) and the **David and Lucile Packard Foundation's** project on **Restoring Coastal Landscape for Adaptation Integrated Mitigation** (ReCLAIM).

While generating new knowledge, these projects aim to support the Government of Indonesia – at local, provincial and national levels – to enhance recognition of blue carbon ecosystems by promoting evidence-based mangrove restoration for improved livelihoods, food security and nutrition benefits to coastal communities.

Through this process, the researchers have found that a multistakeholder approach – involving the private sector, the business community and local people – can help to inspire mangrove forest management that provides tangible benefits for livelihoods and development, whilst keeping these critical ecosystems intact.





#GLFClimate

GLOBAL LANDSCAPES FORUM

The Global Landscapes Forum (GLF) is the world's largest knowledge-led platform on integrated land use, dedicated to achieving the Sustainable Development Goals and Paris Climate Agreement. The Forum takes a holistic approach to create sustainable landscapes that are productive, prosperous, equitable and resilient and considers five cohesive themes of food and livelihoods, landscape restoration, rights, finance and measuring progress. It is led by the Center for International Forestry Research (CIFOR), in collaboration with its co-founders UNEP and the World Bank and Charter Members.

Charter Members: CIAT, CIFOR-ICRAF, CIRAD, Climate Focus, Conservation International, Crop Trust, Ecoagriculture Partners, The European Forest Institute, Evergreen Agriculture, FAO, FSC, GEF, GIZ, ICIMOD, IFOAM - Organics International, The International Livestock Research Institute, INBAR, IPMG, IUFRO, Rainforest Alliance, Rare, Rights and Resources Initiative, SAN, TMG-Think Tank for Sustainability, UNCCD, UNEP, Wageningen Centre for Development Innovation part of Wageningen Research, World Farmer Organization, World Bank Group, World Resources Institute, WWF International, Youth in Landscapes Initiative (YIL)

Funding partners

