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MANGROVES IN WEST AFRICA

A Policy Brief

Summary: This brief provides information and recommendations for policy makers, researchers, and practitioners in national governments and regional institutions in West African coastal countries on how to improve mangrove management strategies and strengthen links to climate change. It is based on the outcomes from the West Africa Regional Expert’s Workshop on Mangroves and Climate Change, held in Elmina, Ghana from May 18-22, 2014. The brief presents recommendations to improve national and regional mangrove-related networks, enhance engagement of policy makers, clarify institutional mandates, and identify priority research needs. In addition to discussing the need to better understand the role mangroves can play in climate change mitigation and adaptation strategies, the brief identifies a need to value the critical social and economic roles that mangroves play in West Africa and to integrate these roles in future strategies and projects. More information on the workshop is available [here](#).

WEST AFRICAN MANGROVES

Mangroves in West Africa represent 13 percent of mangrove forests worldwide and cover more than 2.4 million hectares in 19 countries¹, including Nigeria and Guinea Bissau – two of the world’s most mangrove-rich countries. West African mangroves provide or contribute to a wide range of environmental, economic, and goods and social services. In spite of these important roles, mangroves are experiencing deforestation rates of 1.7 percent per year.

About 14 percent of the region’s mangroves are located in protected areas and make up a complex ecosystem that supports a range of interdependent biodiversity. Mangroves provide critical habitat and food sources for plants and animals, including large numbers of fish and bird species, mollusks, crustaceans, and other invertebrates. They provide critical spawning areas for coastal, marine, and inland aquatic species. Mangroves play an essential role in West Africa’s coastal fisheries, which contribute \$400 million annually to the regional economy.



Young mangroves.

¹ West African countries with mangroves include: Angola, Benin, Cameroon, Congo, the Democratic Republic of Congo, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, the Ivory Coast, Liberia, Mauritania, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, and Togo. The West Africa Regional Mangroves and Climate Change workshop upon which this brief is based included participants from Cameroon, Ghana, Guinea, the Ivory Coast, Liberia, Nigeria, Senegal, and Sierra Leone.

Livelihoods and communities rely on mangroves for fuel wood for fish drying, timber and other building materials as well as non-timber forest products such as snails, honey, oysters, crabs, and traditional medicines.

COASTAL AND OCEAN VEGETATED HABITATS (INCLUDING MANGROVES):

- cover less than 0.05 percent of the sea bed but account for between 50 and 71 percent of all carbon storage in ocean sediments;
- comprise only 0.05 percent of the plant biomass on land but as much of carbon per year as tropical forests; and
- are being lost at an average rate of 2 to 7 percent/year.

Mangroves also play a vital role in climate change mitigation and adaptation. Ecosystems services related to climate change mitigation and adaptation include carbon sequestration at rates higher than terrestrial forest systems, a buffer against shoreline erosion, protection against extreme weather events through absorption and dispersion of tidal surges, and groundwater recharge. While estimates vary, many scientific studies have indicated that mangroves are among the most intense carbon sinks on the planet and that they sequester higher amounts of carbon than terrestrial forest ecosystems (Hutchinson et al., 2014). Given the amount of carbon that mangroves sequester (see text box) and the important socioeconomic benefits derived from mangroves, Reduced Emissions from Deforestation and Forest Degradation (REDD+) activities—including conservation, sustainable management, and the enhancement of carbon stocks—have great potential to contribute to climate change

mitigation efforts while providing economic development opportunities to this underdeveloped region. However, participants in the workshop overwhelmingly agreed that the potential for climate change mitigation and improved livelihoods is woefully underestimated and is not adequately addressed—if at all—in REDD+ strategies currently being developed in the region.

THREATS TO WEST AFRICAN MANGROVES

Many threats that contribute to the decline and degradation of mangrove ecosystems have been identified in the literature and during the workshop. West Africa's coastlines have some of the highest and most rapidly growing population densities. While many communities rely on mangrove wood as a primary fuel source for fish smoking and other purposes, urban expansion and intensifying demands for charcoal, fuel wood, and land are growing drivers of mangrove deforestation and degradation.

Agricultural expansion into mangroves and salt production also contribute to deforestation, while freshwater quality and availability to mangroves have decreased. This change has resulted in reduced mangrove productivity and has led to more rapid degradation. These factors—combined with rising sea levels, erosion from extreme weather, and increased storm surge—represent significant and growing threats to mangroves.



Mangrove fuel wood.

RECOMMENDATIONS FROM THE WORKSHOP

Workshop participants identified recommendations to promote sustainable mangrove management, enhance livelihood opportunities, and explicitly link to climate change mitigation and adaptation strategies.

Improve Mangrove-related Networks: Strengthen existing networks and hold additional national and regional forums building on the outcomes from this workshop in order to increase opportunities for knowledge and information exchange with and between practitioners, researchers, and policy makers. Launch a regional network for data, results, and best practices. Develop a sub-regional strategy and action plan on sustainable management of West African mangroves – likely led by the Economic Community Of West African States (ECOWAS). While the African Mangrove Network exists, it is not currently as strong or active in the West Africa region as it could be with additional support and resources. ECOWAS, the Mano-River Union, the Canary Current Large Marine Ecosystem and Guinea Current Large Marine Ecosystem, the Abidjan/Nairobi Convention, and the United Nations Environment Programme have existing networks that could be strengthened and/or integrated to raise awareness and increase action on mangroves.

Engage Policy Makers: Researchers and practitioners need to generate knowledge and engage and inform policy makers to build understanding of the complex dynamics and multiple values and benefits of mangrove systems, including for addressing climate change, and to influence them to undertake required REDD+ and other investments. Better integration of mangroves projects into national policies/programs is needed to address project sustainability.

Strategy Development: Policy makers, informed by practitioners and researchers, should support the formulation of national and regional mangrove strategies to prioritize areas for conservation and restoration. They should identify the locations and scales of priority mangrove forest landscapes in need of management intervention while taking into account factors such as species composition and the relative threat of deforestation or poor management. Mangroves must be thoroughly integrated into development plans and climate change strategies.

Clarify Institutional Mandates: Clearly define the agencies responsible for mangrove management and enforcement and involve them in strategic planning. In most countries of the region there are currently overlapping mandates that allow mangroves to “slip through the cracks” in climate change and REDD+ strategy development and other strategic planning efforts such as protected area management and agricultural development. Improved coordination and integration of efforts among regional networks and donors is needed.

Develop Knowledge Through Research: There are significant knowledge and data gaps (social, biological, economic, and management best practices) related to West African mangroves. There is also a critical need to better understand the current and potential role of mangroves in climate change and livelihoods to inform national and regional management and planning, including REDD+. Researchers should identify and seek support for focused studies and create collaboration and technical assistance



Workshop participants.

opportunities between researchers and project implementers. Standards and practices of mangrove data gathering, monitoring, and management must be established.

Carbon Stock Research and Modeling: While it is documented that mangroves have significant carbon sequestration capacity, mangrove systems and their carbon-carrying capacity is little understood. Additional field research is necessary to provide the basis for developing models to determine and quantify carbon stocks in different mangroves, as well as their fluctuation over time for the purposes of involvement in REDD+ market schemes.

CONCLUSION

The workshop allowed national and regional policy makers, practitioners, researchers, and development agencies to share information and experience about the constraints and opportunities for the sustainable management of mangroves within the context of climate change mitigation and adaptation policies and strategies. There is a strong need to strengthen information and knowledge-sharing on mangroves and to elevate the integrated economic, social, and environmental benefits mangroves provide within national and regional networks, institutions, and communities in West Africa.

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