West Africa Coastal Areas Management Program

WORLD BANK GROUP

KNOWLEDGE SHEET 3

Managing Coastal Risks in West Africa

Coastal erosion is a naturally occurring process that is accelerated by human impact. The The artificial stabilization of shorelines, deterioration of natural formations, construction of infrastructure, extraction of materials, and proliferation of dams deprive fragile coastal areas of important sediment deposits, which leads to erosion. Degradation of the shoreline reduces the natural protection of coastal areas to storm surges, which, together with heavy precipitation, exposes low-lying areas to flooding.

Both flooding and loss of land from erosion are adding to the physical, ecological/biological, and socioeconomic stresses already affecting the West African coastal zone.

Challenges

The coasts of West Africa are exposed to a variety of natural and potentially damaging events. High tides, storms, and heavy precipitation are responsible for both "slow" but permanent processes (such as erosion) and rapid but temporary phenomena (such as coastal and riverine flooding).

Rapid population growth, urbanization, coastward migration, and development have contributed to erosion along West Africa's coast, which is particularly vulnerable because of its soft and sandy coastline. Poor land use planning, lack of storm water drainage infrastructure, changes in the natural paths of rivers and lagoons, blocked or poorly maintained drainage systems, and the location of settlements in low-lying areas all increase the risk of coastal and fluvial (riverine) flooding.

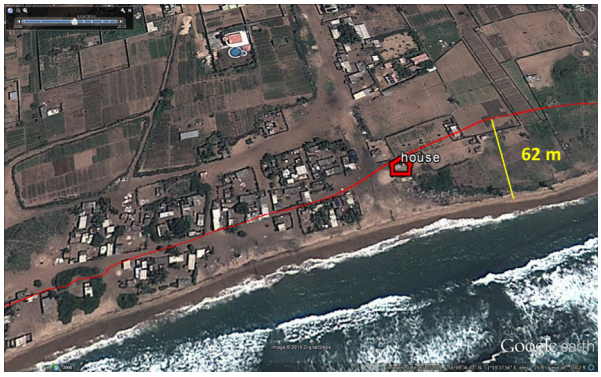
Erosion has caused severe loss of land and major damage over the past several decades (photos 1 and 2). Hundreds of buildings have been destroyed, thousands of hectares of agricultural lands are disappearing, beaches and other tourist assets are being lost, and infrastructure is continuously in need of repair or replacement (the international road in Togo has already been rebuilt twice).

Climate change is projected to increase the severity of erosion and flooding, putting millions of people and billions of dollars of assets at risk.

PHOTO 1 Erosion has destroyed houses in Baguida, Togo

Flooding affects about half a million people a year in West Africa (World Bank 2012). It threatens coastal environments and ecosystems, including beaches, low-lying coastal plains, swamps, islands, mangrove forests, wetlands, estuaries, and lagoons. It also poses a threat to transportation, infrastructure, agriculture, water resources, tourism, and livelihoods (especially in fishing, aquaculture, and agriculture), wreaking enormous economic damage and endangering human health. All of these problems disproportionately affect the poor, who often live in low-lying areas and lack access to infrastructure that could help them adapt to or mitigate the risks associated with flooding.

PHOTO 2 The shoreline of Baguida receded by 62 meters between 2011 and 2015



Climate change has a complex effect on shoreline dynamics, but projections suggest that it will have at least two highly undesirable effects: the direct impact of sea-level rise on coastlines and indirect impacts from the exacerbation of the effects of storm surges on coastal flooding. By 2100 the global sea level is projected to rise 26–63 centimeters in low-emission scenarios and 33–82 centimeters in high-emission scenarios (IPCC 2013)—and the increase is expected to be even larger in West Africa. Uncertainties in climate change projections require that adaptation plans be flexible, in order to adapt to new knowledge and conditions, and robust, in order to respond to a range of different future conditions.

Solutions

The Sendai Framework for Disaster Risk Reduction 2015–2030—the first major agreement of the post-2015 development agenda—establishes four priority recommendations to help countries manage their risk, all of which are relevant in West Africa:

- Better understand risks, in order to inform policies and plans and design cost-effective risk-reduction solutions.
- Strengthen disaster risk governance, by developing clear plans and guidance, building capacities, and coordinating within and across sectors.
- Invest in disaster risk reduction, through structural and nonstructural solutions, combining hard infrastructure with ecosystem-based solutions (such as mangrove preservation) and proper land use planning, moving from a purely "holding the line" strategy to consideration of accommodation and managed retreat.
- Be prepared. Efficient and effective early warning systems and contingency plans help reduce exposure to people and assets and mitigate adverse consequences. It is also vital that postdisaster recovery systems be developed before disasters strike.

Given the transboundary nature of the region's ecosystems, the potential downstream effects of infrastructure, and the importance of the coastline for all sectors, optimal solutions to reduce the risk along West Africa's coasts can be reached only through multisectoral action and multinational cooperation. Every national and regional development plan in West Africa should take coastal risks and adaption to climate change into consideration.

REFERENCES

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The West Africa Coastal Areas Management Program (WACA) is a convening platform that aims to assist West African countries to sustainably manage their coastal areas and enhance socio-economic resilience to the effects of climate change. The program also seeks to facilitate access to technical expertise and financial resources for participating countries.

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