# FACT SHEET

PLANNING FOR RESILIENCE IN EAST AFRICA THROUGH POLICY, ADAPTATION, RESEARCH AND ECONOMIC DEVELOPMENT (PREPARED) PROJECT

FEBRUARY 2018

VALUING ECOSYSTEM SERVICES OF SANGO BAY–MINZIRO FOREST ECOSYSTEM IN UGANDA AND TANZANIA

# THE SANGO BAY-MINZIRO FOREST ECOSYSTEM

The Sango Bay–Minziro Forest Ecosystem is a large, biologically rich, transboundary landscape that expands across the wetland system in southwest Uganda (55,100 hectares) and the Minziro National Forest Reserve (MNFR) in northwest Tanzania (25,700 hectares). It is in the transition zone between the East African (Afromontane) and West African (Guinea-Congolian) floral and faunal zones.

The landscape has multiple land uses and management authorities. In Tanzania, the MNFR is a protected area, while in Uganda some of the wetland is designated a Ramsar site and official Important Bird Area, while other areas are managed by communities. The Sango Bay–Minziro Forest Ecosystem is home to rare and endemic flora and fauna. The *Pseudagrostistachys ugandensis,* a small branched tree, has only been recorded in Sango Bay, Uganda, and Democratic Republic of Congo. Wild coffee (*coffea canephora*) is considered rare but found in several locations in Minziro. The endangered African elephant, black and white colobus monkey, and the restricted-range blue monkey all reside in this transboundary landscape. Sango Bay alone contains 1,000 species of plants, 78 species of mammals, 431 species of birds (including the rare and vulnerable blue swallow and shoebill), 31 species of amphibians, 44 species of fish, 279 species of butterflies, and 67 species of dragonflies. The Minziro Forest Ecosystem is home to almost 250 bird species, 56 of which have only ever been seen in Minziro.



# **ECONOMIC VALUE STATISTICS**

In 2014 the USAID funded Planning for Resilience in East Africa through Policy, Adaptation, Research, and Economic Development (PREPARED) Project completed an economic valuation of ecosystem services provided by the Sango Bay–Minziro Forest Ecosystem. The assessment responded to a request from the Tanzania Ministry of Natural Resource and Tourism for help to make a strong case for conserving the transboundary ecosystem. The basic aim of valuation is to facilitate more equitable, sustainable, inclusive, and better-informed decision-making.

A 10-step approach was used to complete the ecosystem services assessment. It started with scoping and designing the study, then collecting and analyzing data, and finally, communicating the findings to decision makers to make the case for conservation.

The assessment valued 15 ecosystem services that represent the products, raw materials, primary productivity, and vital life support services that are critical to human well-being and a functioning economy. The study focused only on "wise use of resources" and therefore excluded resource uses that are illegal or known to be biologically or ecologically unsustainable.



The estimated value of the ecosystem services in the transboundary landscape is USD \$235,904,137 per year-49.4 percent of which is derived from Sango Bay and 50.6 percent from Minziro. The values of the services are summarized below.

Ecosystem service	Total value Sango Bay	Total value Minziro Forest	Total value Sango Bay– Minziro Forest
Provisioning services: supply goods, such as food, water, timber, and fiber			
Capture fishery and other aquatic organisms	USD 7,021,939	USD 4,623,400	USD 11,645,339
Wood energy and construction material	USD 21,844,848	USD 8,944,800	USD 30,789,648
Water for domestic use	USD 1,696,247	USD 1,116,587	USD 2,812,835
Water and grass for livestock production	USD 9,323,845	USD 10,324,573	USD 19,648,418
Crop farming, irrigation, and mulching	USD 4,027,705	USD 2,096,000	USD 6,123,705
Other non-wood and non-fish wetland products	USD 17,432,911	USD 1,167,368	USD 18,600,279
Regulating & supporting services: governs climate, rainfall, and soil formation that underpin growth and production			
Soil fertility and moisture	USD 6,689,300	USD 11,004,563	USD 17,693,863
Pollination, seed dispersal, and pest control	USD 3,095,500	USD 5,092,405	USD 8,187,905
Water storage and recharge	USD 11,400,500	USD 18,754,955	USD 30,155,455
Regulation of water quality	USD 18,965,600	USD 31,200,296	USD 50,165,896
Flood attenuation	USD 2,476,400	USD 4,073,924	USD 6,550,324
Carbon storage and sequestration	USD 588,900	USD 968,799	USD 1,557,699
Habitat/refugia	USD 6,628,900	USD 10,905,199	USD 17,534,099
Pharmaceutical value	USD 22,650	USD 37,262	\$59,912
Cultural services: covers the beauty, inspiration, and recreation that contribute to spiritual welfare			
Nature-based tourism and cultural values	USD 5,436,000	USD 8,942,760	USD 14,378,760
GRAND TOTAL	USD 116,651,246	USD 119,252,891	USD 235,904,137

### Table I. Results of Economic Values from the Sango Bay-Minziro Forest Ecosystem (2014)

# JUSTIFICATION FOR CONSERVATION

The rapid economic valuation of ecosystem services shows that Sango Bay–Minziro Forest Ecosystem significantly contributes to local, national, and even global economies. The provisioning services that communities rely on for sustenance and shelter have an estimated value of **USD 89,620,224 per year.** The regulation and supporting services, which govern climate, rainfall and production, are estimated to be worth about **USD 131,905,153 per year.** 

The majority of the 422,420 people living in the transboundary ecosystem (219,788 in Uganda and 202,632 in Tanzania) depend heavily on the ecosystem services provided by the wetland to support their economic well-being and survival. For example, the Sango Bay ecosystem has a significant value for supporting livestock production by providing fodder for grazing, especially during the dry season. Livestock farmers expressed deep concern about the depleting resource caused by overgrazing, which is leading to increases in diseases.

One of the important services provided by the Minziro Forest Ecosystem is support to crop productivity through pollination, seed dispersal, and pest and disease control. The Minziro Forest Ecosystem contributes to the maintenance of soil moisture and fertility that contributes to agricultural productivity. The loss of the ecosystem would have dire consequences for the food security of the many households living within and adjacent to the landscape.

The loss of the Sango Bay–Minziro Forest Ecosystem would jeopardize spiritual, sacred, and historic sites. Sango Bay contains a Stone Age site that is of archaeological and religious importance and a significant tourist attraction. The area, internationally known as the Sangoan archaeological site, is located both in wetland and woodland forest areas and includes tools that were used approximately 200,000 years ago.

The Sango Bay–Minziro Forest Ecosystem is under stress from increasing demands for resources from the rapidly growing human population. The transboundary ecosystem is suffering from overexploitation of forest products such as fuelwood, timber, medicinal plants, construction materials, and bushmeat. Heavy dependency on subsistence agriculture, encroachment for settlement and agriculture, poor land management, grazing, and fire constitute the main threats to the ecosystem services. If appropriate measures and activities to conserve the area are not undertaken, many goods and services provided by the forests and wetland will not be available to future generations.



Sango Bay

## ACTIONS NEEDED TO CONSERVE SANGO BAY-MINZIRO FOREST ECOSYSTEM

The economic value of the Sango Bay–Minziro Forest Ecosystem is a strong justification to design, finance, and implement plans and activities that ensure conservation and sustainable management of the landscape. To this end the PREPARED Project worked with key stakeholders in Uganda and Tanzania to develop Conservation Invest Plans (CIPs) for Sango Bay in Uganda and Minziro Forest Ecosystem in Tanzania.

The CIPs are a resource mobilization document that the governments of Uganda and Tanzania can use (separately or together) to solicit funds for conservation activities. The CIPs were developed using a multi-stakeholder, participatory approach and draw from existing management plans or strategies.

The CIPs prioritize four bankable investment packages for each landscape. The total cost of the conservation activities for Sango Bay is USD 9.57 million and for Minziro Forest Ecosystem USD 6.02 million (Figure 2). The cost of implementing the CIPs is significantly less than the value of the ecosystem services provided by the Sango Bay–Minziro Forest Ecosystem each year, demonstrating the value of conservation.

# **CONSERVATION INVESTMENT PACKAGES (2016)**

Sango Bay, Uganda Conservation Investment Plan	Minziro Forest Ecosystem, Tanzania Conservation Investment Plan	
<b>Preserve key natural species and habitats.</b> This investment package aims to maintain the flow of valuable ecosystem services. It consists of five projects with a combined cost of USD 2.33 million.	Foster collaborative approaches to natural resource governance and law enforcement. This investment package aims to safeguard key transboundary species, habitats and ecosystems in the Sango Bay–Minziro landscape. It consists of three projects with a combined cost of USD 1.7 million.	
<b>Enhance sustainable livelihood opportunities</b> . This investment package aims to strengthen local development prospects. It consists of five projects with a combined cost of USD 2.97 million.	<b>Integrate biodiversity and sustainable livelihoods at the local</b> <b>level</b> . This investment package aims to improve economic and envi- ronmental conditions for all sectors of the community. It consists of three projects with a combined cost of USD 2.7 million.	
<b>Promote ecotourism market development</b> . This investment package aims to build new green jobs and income sources. It consists of four projects with a combined cost of USD 2.98 million.	<b>Build community-public-private ecotourism partnerships</b> . This investment package aims to enhance revenues, business opportunities and returns from non-extractive land/resource uses. It consists of five projects with a combined cost of USD 0.96 million.	
<i>Facilitate research, monitoring, and evaluation</i> . This investment package aims to enable better-informed conservation and development decision-making. It consists of five projects with a combined cost of USD 1.29 million.	Strengthen information generation, dissemination and aware- ness. This investment package aims to enable more sustainable, effec- tive, and inclusive conservation and development decisions. It consists of four projects with a combined cost of USD 0.66 million.	

NOTE: Although the valuation study presented above covered the transboundary Sango Bay-Minziro Forest Ecosystem, separate CIPs were prepared for each site because there is no overall management plan for the landscape, but management plans exist for each site.



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The rapid economic assessment of Sango Bay – Minziro Forest Ecosystem was conducted by Land Trees and Sustainability (LTS) Africa Ltd. through the USAID Kenya and East Africa (KEA) PREPARED Project. The rapid economic assessment was completed through a participatory process involving government and non-government actors from Tanzania, including Office of the Vice President of Tanzania, the Ministry of Natural Resources and Tourism, the Tanzanian Forest Service, and Uganda, including the Ministry of Water and Environment and Wetlands Department, as well as other regional, national and local stakeholders. The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.