

São Tomé and Príncipe: Strengthening climate information and early warning systems for climate resilient development and adaptation to climate change.

Issues:

The small archipelago state of São Tomé and Príncipe (STP) is particularly vulnerable to climate-related hazards such as floods, coastal/river mouth flash floods, storms and drought episodes, and their impacts on sectors such as agriculture, fisheries, as well as infrastructures (mostly located in the coastal zone). Nearly 20 percent of the nation's workforce is employed in artisanal fisheries (about 2,000 people directly and an additional 18,000 indirectly), the majority of the villagers are small-scale farmers, fishermen or related to fishing activity.



Figure 1: Coastal communities in São Tomé and Príncipe Islands are vulnerable to climate-related hazards such as coastal/river mouth flash floods and droughts, affecting farming and fisheries, the basis of their livelihoods.

Historically established in the vicinities of flood-prone river deltas, the communities of Neves, Ribeira Afonso, Malanza, Santa Catarina and Sundry (in Príncipe Island) have been considered as the most vulnerable locations in the country. All these coastal sites share a common feature of recurrent climate related hazard of overlapping storm surges and torrential rains and community livelihoods based on artisanal fishing and small scale agriculture. The resilience of these communities has been further undermined by past unsustainable sand extraction practices and increasingly weakened by stronger and overlapping

coastal storms and torrential rains. The confluence of such hazards in 2008-2010 has resulted in widespread flooding across all communities. Houses remain the most affected assets. The most common reported impacts are illnesses, temporary evacuation or abandonment of houses, and livelihood losses (due to work interruptions and losses of crops). Reported deaths are mostly of fishers perished at sea.

Project Summary

- Country: São Tomé and Príncipe (STP)
- Project Budget: \$4,000,000
- Project Funding Source: GEF/LDCF
- Project Co-Financing: \$40,295,000
- Project Period: 2013-2017
- Implementing partners: The Ministry of Public Works, Infrastructure, Natural Resources and Environment (MPWINRE)
- Target area: Neves, Santa Catarina, Malanza and Ribeira Afonso in São Tomé Island and Sundry in Príncipe Island.

Actions:

Working in these five flood prone and poor coastal sites this project is reducing the vulnerability of local fishing and farming communities to flash flooding, stormy weather and develop resilience to drought episodes. At district level and country level, the project is strengthening the monitoring capacity of weather and hydrology sectors, as well as the skills of technical staff, planners and policy makers.

Enhanced capacity of national hydro-meteorological (NHMS) institutions to monitor extreme weather and produce sector tailored weather forecasting

Critical infrastructure required to build and/or strengthen the climate-related observational network for weather, climate and hydrological monitoring will be procured, installed and/or rehabilitated. This will include installing Automatic Hydrometric Stations (AHSs) and Automatic

Weather Stations (AWSs) as well as rehabilitating existing manual and automatic stations in priority districts and catchments. Capacity development will be undertaken to sustain the enhanced observation network during and beyond the implementation phase of the LDCF project. At the national level, the capacity to analyze and process integrated forecast information will be strengthened through training in tailored Weather Forecasting and Special Warning Packaging, investments into equipment including advanced workstations, computer soft- and hardware, and, very importantly, through improving the communication system of dissemination and data relation back to the end user. Therefore, through a set of integrated actions directed to enhance capacities of relevant national level partners, the project will enable the establishment of a national Early Warning System.

Reduced vulnerability of local fishing and farming communities to climate change extreme events of flash flooding and drought episodes

The coverage of spatial variability that exists will be enhanced through the establishment of Integrated Community Based EWS (ICB-EWS) network of 5 pilot sites, Neves, Ribeira Afonso, Malanza, Santa Catarina and Sundy (in Principe Island). This is especially for promoting local based rainfall and river monitoring scheme, with direct participation of Women Associations and youth groups, by providing training, equipment and technical assistance. Therefore, the project will work at village level, to assist the fishing community and small-scale farmers to strengthen resilience of local fishermen against climate change impact, by delivering sector tailored forecasts and provision of a set of small-scale adaptation initiatives. The warning dissemination capacity of the communities will be strengthened by: developing the capacity of Community Radio stations and provision of FM-SW radio sets to the fishing communities in pilot sites to enable reception of warnings while at sea.

Improved National knowledge on climate change impacts and response capability

At national level, the project will promote systematic storage and integration of climate and weather data, to strengthen the National capacity and inter-sectoral framework for: mainstreaming weather and climate information into national development planning policies, district disaster preparedness and management, specifically targeting the communities of Neves, Santa Catarina, Malanza, Ribeira Afonso and Sundy districts.

This information will be used to analyze agricultural land-use planning in flood- and drought prone areas and develop alternative land use plans for different climate scenarios. Based on the results of this analysis of climate, risk projections will be integrated into a comprehensive national database for flooding and drought hazards and vulnerabilities to be established by the project. This information will also enable to developing of an online agricultural advisory forecasting service to support cocoa & coffee farming against “Harmattan” impact.



Figure 2: In São Tomé and Príncipe Islands, women make the majority of fishmongers and small-scale farmers vulnerable to climate-related hazards such floods and droughts.

Expected impacts

The project is in its inception phase. It anticipates that the future EWS will provide means for more accurate, reliable and frequently updated weather and hydrological forecasts; will strengthen the dissemination of forecasts and warnings and will provide means for the fishing community to access information while at sea, ultimately reducing the risk of disasters and possibly casualties. In this way, the project will affect nearly 10,000 rural coastal dwellers, assisting more directly to around 1,400 fishermen and 1,700 fishmongers who will benefit from improved weather forecast and warnings.

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