Mangrove Conservation in Western Madagascar: a Vulnerability Assessment

Background

Madagascar’s mangrove ecosystems were identified during a 2008 national climate change vulnerability assessment and adaptation workshop as being particularly at risk of the effects of climate change. Rising sea levels, cyclones, changes in hydrological cycles and salinity intrusion all have the potential to harm these valuable ecosystems, and the species and local human communities that rely upon them. Following the national workshop, a multi-partner program was agreed upon to carry out feasibility studies and testing in priority ecosystem pilot sites to develop strategic and long-term climate change adaptation initiatives. In this sense, Conservation International, Wildlife Conservation Society and WWF have developed a joint project entitled “Climate change adaptation for conservation in Madagascar”. As part of this project, WWF is implementing a project focusing on the mangrove ecosystems in the Tsiribihina and Manambolo areas in western Madagascar, which are amongst the most expansive and developed mangroves in the country. The project will carry out a vulnerability assessment of the biophysical and socio-economic characteristics of these mangroves in the face of future climate change to inform restoration and conservation zoning activities. The project will also serve as a useful case study of mangrove vulnerability assessment that can be implemented elsewhere.

Objectives

Project overall goal

Build the key knowledge about coral and mangrove systems in Madagascar; develop effective approaches for building resilience in these systems and to work with the Malagasy government to incorporate that knowledge into conservation planning.

Project specific Objectives

• Gain an understanding of the historic and existing biodiversity characteristics of mangroves of this region by conducting a structural inventory and natural regeneration assessments to determine the status of these mangroves and cover change over time.

• Gain an understanding of the value of and dependency of local people on mangroves and also any perceptions of local people to climate change by conducting qualitative socio-economic assessments.

• Assess the vulnerability and potential resiliency of the Tsiribihina and Manambolo mangroves using results of surveys and the WWF climate witness approach through joint consultative sessions with local stakeholders.
• Produce mapping of the studied mangroves to indicate their vulnerability and to support the identification of key resilient areas and restoration zones.

Achievements

• Compiling scientific knowledge on mangroves in Madagascar.

• Gathering of biological and ecological data on Tsiribihina and Manambolo mangroves through structural inventory and natural regeneration assessments.

• Socio-economic surveys on the dependency of local people on mangrove ecosystem and their inherent vulnerability.

• Vulnerability assessment of mangrove ecosystems including a detailed methodology and maps of most vulnerable mangroves in the project area.

• Publication of 400 booklets on “mangroves ecosystems in western Madagascar: an analysis of vulnerability to climate change”.

Challenge

The project ended in September 2010 but fortunately WWF MWIPO secured a grant from the MacArthur Foundation to ensure that the data generated during this vulnerability assessment is used to develop climate change adaptation strategies in this area. Emphasis will put on the valorization of local knowledge and practices to enhance the resilience of local communities and that the mangroves continue to provide ecosystem goods and services to local communities. This new project will start in January 2011 and the major challenge will be the identification of two priority sites - through participatory process - for detailed vulnerability assessment and adaptation plans development.

Donor