



Economic Valuation of Climate Change Impacts, Vulnerability and Adaptation in Tanzania

“Securing long term climate change mitigation continues to be a global problem and the magnitude of the problem is very profound in developing countries where the majority is poor, confronted with food insecurity and highly natural resource-dependent” says Joseph Hella, Associate Professor at Sokoine University of Agriculture (SUA).

In Tanzania the average annual temperature is projected to increase by 2.2°C and rainfall to decrease by 100 mm by year 2100. As a result, many of its river basins are drying out thus reducing water flow from these basins.

In Tanzania, water basins have been able to supply water throughout the year providing opportunities for poor communities to grow crops for improved livelihoods.



Fishing in Pangani River

However, recently communities living in these areas have experienced a serious decline in the availability and quality of water. As a result, agriculture, which is dominated by small-scale farmers in these areas, has been seriously affected.

Scholars have pointed out that small scale farmers in developing countries fail to recover from climate change impacts because of low adaptive capacity.



Small holder farms along Pangani Basin catchment

A research project is implemented in Pangani Basin and Pemba with the aim of addressing the challenges mentioned.

The project title is “Economic Assessment of Climate Change Impacts, Vulnerability

and Adaptation in Tanzania”. It is being led by Prof. Joseph Hella who is working with other researchers from SUA, Dodoma University, the Pangani River Basin Authority, the Directorate of Meteorology, Arusha Technical College and the Second Vice President’s Office of the Zanzibar Government and in collaboration with the Norwegian University of Life Sciences (UMB).

The project is funded by the Royal Government of Norway through the programme Climate Change Impacts, Adaptation and Mitigation (CCIAM) programme.

Mitigating the effects of climate change has been quite an important agenda. The northern zone as well as the Isles of Tanzania are not spared from the effects of climate change which is now being felt in several areas of the once water rich zone.

Implementation of the project

The inception meeting was held the 1st week of August 2012 in Korogwe to discuss the implementation of the project. Baseline data from 11 villages (9 in mainland & 2 in Pemba) was collected.



Inception workshop in Korogwe, Tanga

The climate change scenario in Pangani Basin and Pemba is being clarified based on collected data. Two fact sheets have

been produced such that climate change impacts on and vulnerability of ecosystem services and livelihoods under REDD initiatives in Tanzania are better understood and documented. Also, three post-graduate students have been enrolled at SUA and are researching further the impact of climate change and vulnerability.



Tea growing and forest conservation in Usambara

Researching with farmers

Vulnerability of small scale farmers to the impacts of climate change in the established scenarios will be identified in order to establish farmers’ reactions to long term climate change mitigation measures.

SUA students (Master and PhD level) are also involved and base their degree thesis on work done for the project whilst the researchers train them as young professionals on this important topic.

In addition, capacity building on the use of the community-based Risk Screening Tool: Adaptation and Livelihoods (CRiSTAL) will be done.

This is a decision making tool in the context of climate change a scenario which is being carried out by researchers and

climate change experts. The tool integrates climate change adaptation into community-level projects, as well as identifies adaptation actions like good farming practices that can improve resilience to climate related hazards (i.e. droughts and floods).

This project will contribute to understanding climate change issues before embarking on long term mitigation measures.

Reaching the larger audience

The project will use the following means to disseminate its results:

- a) Production of post-graduate thesis/dissertations i.e. One PhD and two Master degrees- from three candidates enrolled at SUA.
- b) Testing the CriSTAL model which has been developed in Kenya. This will make the model available for use by others Pangani and other river basins.
- c) Policy briefs recommending mitigation measures which are appropriate for Pangani Basin and Pemba.

Project title:

Economic Assessment of Climate Change Impacts, Vulnerability and Adaptation in Tanzania: the Case of Pangani Basin and Pemba

For more information visit
<http://www.suanet.ac.tz/cciam/>

Written by
Andrew Msungu
Sokoine University Agricultural Library
June 2013

