



Non Timber Forest Products to deal with Climate Change in Tanzania

Over 20 million Tanzanians depend on Non Timber Forest Products (NTFPs) for their livelihood. One CCIAM project is looking into how NTFPs as part of peoples' livelihood strategy is connected to climate change, so that this information can be spread and forest dependent people can more easily adapt to the effects of climate change.

Importance of NTFPs to Livelihoods

In Tanzania the countries' natural resources are very important to the population: through agriculture, hunting, fishing and provision of forest products, both timber and non timber. Non Timber Forest Products (NTFPs) are very important for many, and products such as wild fruits and leaves, medicinal plants, honey and mushroom found in forests are often collected. This is especially when times are tough and it is the only source of food and medicine available, the latter especially in areas where modern health facilities are inadequate or not available.

The effects of climate change are becoming more and more obvious. Especially change in rain patterns have a severe negative impact for farmers, as crops fail due to too heavy, too little, or too late rainfall. As a result, people's incomes decrease and their livelihoods are jeopardized.

As a coping strategy many turn to the forest. But due to deforestation and forest degradation forest products are becoming more scarce. The use and availability of

NTFPs might also be affected. If people turn even more to NTFPs when their agriculture is negatively affected by climate change, this can cause serious degradation to these products. Also, the NTFPs in itself might be affected by climatic changes such as an increase in temperature or changing rain patters. This will make the situation even worse.

Researching NTFPs and Climate Change Adaptation

A research project, implemented by three collaborating institutions, i.e. Sokoine University of Agriculture (SUA), Ardhi University in Tanzania and the University of Life Sciences (UMB) in Norway, wanted to learn more about this relationship. Led by Dr Susanne Augustino from Department of Wood utilization at SUA the project is named "*Climate Change, Non-Timber Forest Products and Livelihood of Forest Dependent Communities: Impacts, Vulnerability and Adaptation in Tanzania*". Not only does the project want to see how livelihoods and NTFPs might be affected by climate change, but it also focuses on how these products can be used in a sustainable way

so that it can enhance the adaptive capacity of forest dependent communities' in this era of climate change.



A farmer helping to identify the different NTFPs plants during inventory in Iyondo Forest Reserve, Kilombero district

The project started in October 2010 and is expected to finish by the end of 2013. It is a project part of the larger CCIAM programme which is a research cooperation between SUA, Dar es Salaam University, Ardhi University, the Tanzanian Meteorological Agency and UMB focusing to develop and sustain adequacy in national capacity to participate in climate change initiatives and address effects and challenges of climate change with particular emphasis to REDD initiatives.

The NTFPs project is focused in two selected areas: Iyondo Forest Reserve in Kilombero district (Morogoro region) currently part of the Kilombero Nature Reserve and New Dabaga-Ulongambi Forest Reserve in Kilolo district (Iringa region). Both of these sites are within the Eastern Arc Mountains and were chosen because they have high levels of species diversity and the nearby communities rely heavily on these forests for livelihood sustenance.

Now into their third and final project year of implementation exciting results are emerging from the variety of project activities.

Full lists of all NTFPs species and other ecosystem services within the forests have been documented and NTFP inventory over the two forest reserves have been made. Having identified how the forest dependent communities are coping with effects of climate change in the context of NTFPs, a subsequent strategy in each district is planned to be developed.



A project researcher is involving communities to map areas where NTFP resources are harvested in Kilolo district

The effects of Climate Change on NTFPs

The local populations have also been asked how they use NTFPs during the current climate change and if this change in climate has affected the resources. The general perception is that the NTFPs are becoming scarce. For example, villagers say that due to the change in rain patterns mushrooms were nowhere to be found in the rainy season in Kilolo, even though they were collected in plenty 30 years ago. Also, some NTFPs which they previously could collect around the forest reserve, are

now not available and people need to go into far into the reserve to find them.

This poses a new problem. There is a trend in Tanzania of forests changing status from Forest Reserves to Nature Reserves to ensure proper management. This is the case for Iyondo Forest Reserve now under Kilombero Nature Reserve. This means a lot stricter rules and very limited access for neighbouring villages. Many of these villages then only remain with public land (or including forest reserves) to find the products they need. Since many of the products are becoming less available and in small quantity due to higher demands in these areas many are forced to still enter the Nature Reserves illegally to cater for their needs. As Dr Augustino, the Principal Investigator of the project, stated:

“So not only does climate change have an impact on livelihoods, but also processes like change in forest land tenure restricting access to NTFP resources will be adding to the burden”.

Strategies to deal with Climate Change, using NTFPs

One of the main ways in which the project suggest to deal with the challenges of less availability of NTFPs are to find alternatives to the lost products, for instance by domestication. This means that many of the NTFPs found within these reserves will be cultivated and planted in or around people’s homesteads. With the right facilitation and training people can plant fruit trees and or medicinal plants for use. In the Kilombero site where the highland communities are struggling to cover their energy needs due to few available forest resources, the project has

established two nurseries for agroforestry tree species. These nurseries are also getting assistance from village primary and secondary school students so that they can continue with the nursery even after the project is finished. When these trees have matured they will be distributed for planting at households as well as in special sites set by the villages.



One of the agroforestry tree nursery at Igima village in Kilombero district

In Kilolo the project has supported the establishment of two mushroom groups (i.e. Kidabaga and Magome villages). What the project is experiencing is that growing of mushrooms can provide both food and an added income. In addition and to ensure sustainability, these groups have been taught how to make mushroom seeds which can also be sold and which will facilitate others to also start growing mushrooms.



By using available local materials mushrooms can thrive and grow inside your home

Dissemination of results from the project

The results of this project can be very beneficial for the community and country at large, and the project is using many resources on sharing their results as wide as possible in national, international conferences and scientific workshops both within Tanzanian governmental bodies and abroad. Five papers have already been written and presented and processes are ongoing to publish the papers in relevant peer reviewed journals.

Also a manual on mushroom cultivation for climate adaptation has been made in Kiswahili and English. Mushroom groups from Kilolo participated in the annual Nane Nane farmers exhibition to showcase their project and let participating farmers share their experiences to fellow farmers. Hopefully then the positive outcomes and knowledge gained by this project can reach forest dependent communities all over Tanzania.

Project title: Climate Change, Non-Timber Forest Products and Livelihood of Forest Dependent Communities: Impacts, Vulnerability and Adaptation in selected districts of Tanzania

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

Written by
Cecilie Dyngeland
SUA Research Associate
February 2013

