TANZANIA: NAPA PROJECT PROFILE

TANZANIA

NAPA PRIORITY PROJECT 1

IMPROVING FOOD SECURITY IN DROUGHT-PRONE AREAS BY PROMOTING DROUGHT-TOLERANT CROPS

RATIONALE/BACKGROUND

Shinyanga, Dodoma and Singida regions are top in the list of drought stricken areas of Tanzania. Recent crop surveys have revealed that rainfall shortage has become an outstanding cause of crop failure, and in effect recurrent food insecurity has become rampant in a number of regions and districts. It has been reported that although Tanzanian farmers have on average been able to actively feed 100% of the country's population per annum, pockets of food shortages continue to exist in 37 districts (nearly one third of all districts) in an average of 8 regions (MAFSC, 2006)[1].

During the period (2001/02-2005/06), Tanzania was self-sufficient at different levels - the lowest level (88%) was recorded in 2003/04 while the highest (103%) was recorded in 2004/05. The lowest number of deficit regions (4) was recorded in 2002/03 while the largest number (14) was recorded in 2003/04. Over the same period the lowest number of districts showing pockets of food shortage (13) was recorded in 2002/03 while the highest number (62) was recorded in 2003/04. Currently 2006/07, while the country is 110% food self sufficient, 5 regions (50 districts) are earmarked as having pockets of food shortage.

These changes are particularly of interest when thinking of climate change causing a shift in agroecological zones thereby affecting crop calendar and performance. Understanding these changes is also important in understanding the poverty environment surrounding farmers' purchasing power, which is basically associated with management of food security at household level. Knowledge of these changes will also assist in policy decisions associated with improved management of agricultural practices as efforts are made towards raising farmers' income as a source of farmer incentive to invest towards increased productivity and production. It will also assist in appropriate policies to increase consumers' purchasing power and hence enhance everybody's food security.

In view of working towards these efforts it is hereby advocated that drought tolerant crops such as sorghum and millets may be most appropriate where adverse weather and degradation of soils are becoming an increasingly common feature. Consistent with this, deliberate efforts need to be made towards relocating agro-ecological zones, identifying appropriate crops for the zones, addressing water/moisture availability, and addressing fertilizer availability. The areas of failing agriculture which is probably attributed to negative effects of climate change include Shinyanga, Singida, Dodoma, Arusha, Tabora, Kilimanjaro and the northern part of Iringa region. If anything is to be done to address rampant and probably chronic food insecurity associated with negative effects of climate change these areas could provide an appropriate starting point.

DESCRIPTION

Objectives

General Objective

To promote use of drought tolerant food crops in drought prone areas of Shinyanga, Dodoma and Singida regions for sustainable food production.

[1] Ministry of Agriculture Food Security and Cooperatives (2006), AGSTATS for Food Security(Table 5)

Specific objectives

- To create awareness in local communities of the negative impacts of climate change on maize production.
- To ensure production and supply of food to local communities in the drought-prone areas by replacing maize with the relevant drought tolerant crops.

Activities

- Creating awareness of the negative impacts of climate change to local communities;
- Identification of suitable crops to climate change induced AEZ;
- Capacity building in terms of acquisition of typical crop varieties, input package, market availability and utilization of drought tolerant crops;
- Enhancing extension services relevant to the identified drought tolerant crops.

IMPLEMENTATION

Inputs

Human resources, financial resources and materials.

Institutional arrangement

The Project will be implemented under the leadership of Ministry of Agriculture and Food Security in collaboration with Local Government Authority, Tanzania Meteorology Authority, local communities, NGOs and CBOs.

COST

Activity-Indicative Budget

Total cost: USD 8,500,000

Activity	**Year 1** (USD)	**Year 2** (USD)	**Year 3** (USD)	**Total** (USD)
Project Planning and Appraisal	900 000			900 000
Farmer training and facilitation	1 800 000	900 000	900 000	3 600 000
Extension services and facilitation	1 200 000	800 000	800 000	2 800 000
Public outreach	400 000	400 000	400 000	1 200 000
TOTAL	**4 300 000**	**2 100 000**	**2 100 000**	**8 500 000**

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NAPA PRIORITY PROJECT 2

IMPROVING WATER AVAILABILITY TO DROUGHT-STRICKEN COMMUNITIES IN THE CENTRAL PART OF THE COUNTRY

JUSTIFICATION/RATIONALE

The government recognizes that water is an important component in the development of the country. This is proclaimed in various policies including: Vision 2025, the Poverty Reduction Strategy, the Agricultural Policy, the Environmental Policy, the Forestry Policy, and the Energy Policy. The Tanzania Poverty reduction strategy Paper recognizes the heavy dependence of the people on the environment (soil, water and forest).

Large areas of the country are water scarce areas and do not enjoy adequate supplies of water resources all year round. Rivers are dry half of the time in the larger part of the internal drainage basin. The high temporal and spatial variability in rainfall has resulted in endemic drought in some part of the country particularly the central regions. As a result these regions are frequently hit by extreme droughts posing a major challenge to water availability in these communities. This situation has lead to frequent food insecurity and aggravated poverty in respective communities thereby increasing their vulnerability to the adverse impacts of climate change. Rainfall in these regions is very erratic, unimodal and unreliable. Recurrence of frequent drought in these areas has lead to extreme weather events and rainfall has been reduced to a minimum of 400mm per year. The rainfall period is usually short and is followed by a long dry season of six to eight months. This is coupled with water scarcity problems as the little amount of water available in these regions is unsustainably utilized through poor and inefficient traditional irrigation practices, lack of storage facilities and degradation of water catchments by human activities.

In view of the above, the challenge of ensuring adequate availability of water for various uses in these regions remains very daunting. Interventions are needed in order to enable the communities to adapt and cope with the magnitude of water scarcity in the regions. It is against this background, interventions in this envisaged project are being proposed mainly to improve water availability in these communities for sustainable livelihood.

DESCRIPTION

Overall objective

To provide water and ensure sustainable utilization of water in the drought-stricken areas.

Specific objectives

- Ensure water availability to all communities in drought-stricken areas;
- Ensure sustainable use of available water;
- Ensure that communities participate in conservation and management of catchment's areas.

Expected Outcomes

- Improved water harvesting techniques and storage facilities;
- Well established water reservoirs and increased utilization of underground water sources;
- Improved sustainable utilization of water for various purposes;
- Increased participation of communities in conservation and management of water catchments.

Activities

- To establish water harvesting and storage techniques;
- To develop reservoirs and underground water abstraction;

- To promote community-based catchments conservation and management;
- To promote sustainable utilization of water in small-scale traditional irrigation practices.

IMPLEMENTATION

Institutional arrangement for project implementation

The project will be implemented by Ministry of Water in collaboration with Prime Ministers Office- Regional Administration and local Government, Ministry of Natural Resources and Tourism, Ministry of Agriculture and Food Security, Ministry of Lands and Human Settlement Development, local communities and NGOs/CBOs.

COST

Activity-Indicative Budget

Total cost: USD 800,000

S/N	Activity	Costs (USD)
1.	Promotion of water harvesting and storage techniques	200 000
2.	To develop reservoirs and underground water abstraction	300 000
3.	To promote community-based water catchments conservation and management	100 000
4.	To promote sustainable utilization of water in small-scale traditional irrigation practices	200 000
	GRAND TOTAL	800 000

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NAPA PRIORITY PROJECT 3

SHIFTING OF SHALLOW WATER WELLS AFFECTED BY INUNDATION ON THE COASTAL REGIONS OF TANZANIA MAINLAND AND ZANZIBAR

RATIONALE/BACKGROUND

The five coastal regions of mainland Tanzania encompass about 15% of the country's land area and are home to approximately 25% of the country's population. Recent estimates indicate that the population of the five coastal regions now number about 8 million, with a growth rate ranging between two and six per cent. A doubling of the coastal population is expected in as little as twelve years. That could mean 16 million people will be living on the coastal areas by 2010, which is about 110 people per square kilometre.

Despite this huge number of the population on the coast, due to its potential aesthetic value and other unique natural resources which have attracted such a big number of people, coastal areas are most vulnerable to climate change due to the anticipated rise in sea level, floods and other consequences. Unfortunately, the effect of sea level rise is already being experienced in the Bagamoyo District of the Coast region. In this region sea level rise has resulted in inundation of some traditional water sources.

This process has resulted in salinization of shallow water wells, the only source of domestic water supply. As a consequence, the process has caused both social and economic problems associated with lack of reliable safe drinking water to rural communities.

These problems include:

i. Women have to walk very long distances to fetch water. This consumes a lot of their time which could be spent on other productive activities. The burden is more on women and school children particularly girls who seem to be the main water courier; and

ii. In some households, they have to set up a budget for buying water which is about USD 0.2 for 20 litres. Considering the poverty levels of these communities, normal African family of about 8 people, consumes the minimum amount of about 200 litres of water per day which is equivalent to USD 0.8. For a poor family living under USD 1 a day the budget for water is a challenge. As a result people are forced to avoid some productive activities such as animal keeping by zero grazing and farming of cash crops that needs irrigation.

Looking at this trend, there is an immediate need to take action to curb the situation, otherwise if unchecked; people living along the coast will be forced to migrate to other areas, something which may cause social conflicts and other environmental degradation due to overpopulation and utilization of resources. This will be impairing the targets of the Johannesburg Plan of Implementation (JPOI) especially the target to cut by half the population without reliable access to safe and clean drinking water by 2015; and the UN millennium Development Goals 1,2,3,4, 6 and 7 on poverty eradication, achieving universal education, gender equality, reducing child mortality and improving maternal health, combating diseases (water borne diseases in this case), and environmental sustainability respectively.

DESCRIPTION

Overall Objective

The overall objective of this project is to construct new water wells to enable people to have reliable access to safe and clean drinking water and for other development processes.

Activities

- Awareness for the communities on the cause and impacts and exploration of their adjustments to the problems faced due to climate change impacts;
- Training on the sustainable use of water and methods of water harvesting;
- Conducting a survey to identify wells that have been inundated with sea water along the coast. The task of surveying wells will be conducted by the SSN adaptation team in Tanzania;
- Chemical testing of salts in wells that have been inundated with sea water to verify the extent of the problem. This task will be conducted by SSN Tanzania team in collaboration with other higher learning Institutions, particularly the University of Dar es Salaam;
- Survey of water source alternatives for communities that need new water sources; e.g. other places for bore holes or the possibility of gravity water supply. To achieve this task, water supply experts will be consulted and contracted;
- Rehabilitation of the traditional wells not yet inundated with sea water intrusion;
- Implementation of new water sources and supply. Bore holes drilling agents, and water supply companies will be consulted and contracted to complete the final stage of achieving adaptation goals;
- To reduce pressure on Coastal resources, promotion of alternative income generating opportunities;
- Promotion of good practice in land management.

Short term output

- The communities at Bagamoyo District are able to express a basic understanding of current climate change impacts and adaptation options available;
- Shallow wells are relocated and new wells are being used;
- Shallow wells which have not been polluted are being used sustainably.

Long term Output

This intervention will contribute to poverty reduction in the following ways:

- The coastal community will have reliable access to safe and clean drinking water and thus reduce their valuable time and energy spent on fetching water. This time will be devoted to other productive activities such as Small and medium Enterprises (SMEs), cultivation of cash crops, etc;
- Provide more time for school children to attend schools and acquire at least the universal primary education which is essential for every child;
- The cash spent on buying water will be used for other activities probably investing in Small and Medium Enterprises (SMEs);
- People will be able to grow and irrigate some small vegetable garden for extra income.

In general this intervention will compliment the efforts and objectives of the international communities especially the MDGs and the Johannesburg Plan of Implementation.

IMPLEMENTATION

Institutional arrangements

The project will be implemented under the leadership of the Ministry of Water in collaboration with Ministries of Natural Resources and Tourism, Ministry of Agriculture and Food Security, Local Government Authority, Local Communties, NGOs/CBOs.

COST

Activity-Indicative Budget

Total cost: USD 3,300,000

Activity	**Year 1** (USD)	**Year 2** (USD)	**Year 3** (USD)	**Total** (USD)
Project planning and appraisal	300 000			300 000
Facilitation of farmers	600 000	300 000	300 000	1 200 000
Establishment of tree nurseries	300 000	300 000	300 000	900 000
Establishing alternative income generating activities	300 000	300 000	300 000	900 000
Total	1 500 000	900 000	900 000	3 300 000

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NAPA PRIORITY PROJECT 4

CLIMATE CHANGE ADAPTATION THROUGH PARTICIPATORY REFORESTATION IN KILIMANJARO MOUNTAIN

RATIONALE

Glacier retreat and change of vegetation on the slopes of Mt Kilimanjaro have made the latter one of the climate change hotspots in Tanzania. This has been recognized in the Initial National Communications to the UNFCCC and the NAPA. In the past dense forests around the mountain used to cause water flows in a number of rivers that originated from the mountain eventually forming the large Pangani river basin comprising Nyumba ya Mungu, Hale and Pangani hydropower stations. The livelihood of surrounding communities depended on the ecosystem over the mountain. Reliable water, forest products (like fuel, timber building material), rain-fed and irrigatable agriculture as well as livestock manifested the paradise of Mt Kilimanjaro ecosystem.

In the recent past, water shortage, failing agriculture, depletion of forest stocks and general unreliability of rainfall has been experienced and in view of persistence of this negative feature it has been attributed to climate change. The negative effects of climate change have been exacerbated by increasing population pressure and poverty. In the project area the agricultural land has been inadequate and the communities have encroached the formally catchment forest area and river valleys for agricultural purposes. Therefore, a considerable amount of forest has been cleared for coffee and banana planting in subsistence farming. The current land tenure system, where family heads distribute the available land as an asset to sons, has led to the allocation of the catchment areas and river valleys as farming land. Under this increasing pressure from human settlement and resource use the need for intervention becomes inevitable.

This project intends to address protection and conservation, together with promoting afforestation programmes to adapt to climate change impacts. This will involve restoration of vegetation cover on the degraded areas and making available forest products to communities living in the area.

DESCRIPTION

General objective

The main objective will be to improve the livelihood of communities around Mt Kilimanjaro by providing alternative sources of income and food through replanting of trees and economic diversification.

Specific objectives

- To restore degraded areas around the Mt Kilimanjaro ecosystem;
- To enhance community participation in tree planting.

Activities

- To create awareness on climate change adaptation, biodiversity conservation and afforestation through community participatory efforts;
- To strengthen community participation through CBOs, schools, churches, youth groups, womens groups in conservation activities;
- Establishing nurseries and replanting trees in the degraded areas;
- Support alternative sources of livelihoods.

Expected Outputs

Major outputs will include among others:

- Capacity building in CBOs, schools, churches, youth groups and women groups on climate change adaptation and biodiversity conservation with a special focus on conservation of damaged river valleys;
- Rehabilitated degraded areas;
- Awareness for local communities on climate change issues enhanced;
- Livestock and agricultural production improved, and the negative impacts on biodiversity and degradation of environment around the project areas reversed;
- Enhancement of alternative income sources.

IMPLEMENTATION

Institutional arrangements

Ministry of Natural resources and Tourism will play a leading role in the implementation of the project. Other collaborating ministries/institutions to be involved are Ministry of Energy and Minerals, Local Government Authority, Academic and Research Institutions, local communities, Local NGOs/CBOs.

COST

Activity-Indicative Budget

Total cost: USD 3,300,000

Activity	**Year 1** (USD)	**Year 2** (USD)	**Year 3** (USD)	**Total** (USD)
Project planning and appraisal	300 000			300 000
Facilitation of farmers	600 000	300 000	300 000	1 200 000
Establishment of tree nurseries	300 000	300 000	300 000	900 000
Establishing alternative income generating activities	300 000	300 000	300 000	900 000
Total	1 500 000	900 000	900 000	3 300 000

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NAPA PRIORITY PROJECT 5

COMMUNITY BASED MINI-HYDRO FOR ECONOMIC DIVERSIFICATION AS A RESULT OF CLIMATE CHANGE IN SAME DISTRICT

JUSTIFICATIONS AND RATIONALE:

The assessment carried out in the Luguru village recognizes that due to climate change the livelihood of the community have been affected by lack of woodfuel and other forest products that have been supporting the livelihood in the community as a source of income for households. Wood fuel has been the main dependable source of energy to these communities and other forestry products. As a result of this, the community have been very vulnerable and the household income has been very unreliable contributing to poverty and increase in the vulnerability.

Thus installation of electricity to the community as an alternative source of energy in Lugulu Village will not only provide a predictable source of energy but will also enhance the income generating activities by providing an avenue for the alternative sources of livelihood that will reduce the pressure on the use of natural resources and therefore improve their adaptation to the adverse impacts of climate change. Some of the alternative income generating activities that will be triggered by the availability of electricity will include entrepreneurship in small-scale agro-processing industries, services like battery charging stations, refrigeration, water pumping etc.

The establishment of the community-based Mini-hydro will involve installation of a turbine with a capacity of 75KW at the Yongoma River in the Luguru village. The site is suitable since there exist some structures such as canal and access road and therefore the installation will be done on the already existing structures that will need minor modifications or improvements.

DESCRIPTION

Overall objective

The main objective of this initiative is to reduce the vulnerability of the local communities by provision of a more predictable source of energy.

Expected Outcomes

- Reduced pressure on the use of forest and forestry products;
- Availability of opportunities for investment in alternative sources of livelihood;
- Increased number of households and centres connected to electricity generated from the power plant.

Activities

Among others, Participatory Rural Appraisal (PPA) should be carried out to identify projects that will generate income for the community in Lugulu Village.

- Awareness creation to the local communities on the adverse impacts of climate change and their vulnerability;
- Promotion of community-based mini-hydro management;
- Enhance community-based conservation of water catchment areas in the village;
- Construction/upgrade of access road to the mini-hydro station;
- Construction of power house and water ways;
- Modifications and reinforcement of the exiting canal;
- Installation of machinery;

- Construction of transmission and distribution network.

Institutional arrangements

The project will be implemented under the leadership of Ministry of Energy and Minerals in collaboration with Local Government Authority, Ministry of Natural Resources and Tourism, local communities and NGOs/CBOs.

COST

Activity-Indicative Budget

Total cost: USD 620,000

S/N	Activities	Cost (USD)
1.	Awareness creation to local communities on the adverse impacts of climate change and their vulnerability.	30 000
2.	Promotion of community-based mini-hydro management	30 000
3.	Enhance community-based conservation of water catchment areas in the village.	40 000
4.	Construction/upgrade of access road to the mini-hydro station.	210 000
5.	Construction of Power House and waterways.	100 000
6.	Modifications and reinforcement of the exiting canal.	20 000
7.	Installation of machinery (Turbine).	40 000
8.	Construction of transmission and distribution network.	150 000
	GRAND TOTAL	**620 000**

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NAPA PRIORITY PROJECT 6

COMBATING MALARIA EPIDEMIC IN NEWLY MOSQUITO-INFESTED AREAS

JUSTIFICATION/RATIONALE

Malaria pandemic is one of the leading causes of death in many regions of the country ranging from 24% of deaths in Rukwa to 48.9% in Dare es salaam. Currently, a malaria problem is evident from national level to the grassroots level of malaria endemicity. Recently, there has been observed increased trends in the occurrence of malaria in non-traditional areas found in highlands such as Kilimanjaro, Arusha, Tanga and Kagera regions. In these areas malaria was not very pronounced in the past and this recent trend has been attributed to global warming.

It is well evident that global warming exerts impacts on malaria ecosystems in Tanzania. Recent studies done in these areas have revealed the relationship between increase in temperature and occurrence of malaria incidence on these areas. Microclimate changes as a result of global warming such as temperature, rainfall and humidity contribute to the changes in the epidemiology of the disease and this leads to the extension of the disease to new non-traditional malaria areas. Change in climate may have short and long-term impacts on disease transmission as these vectors and species have the potential to redistribute themselves to new climate-driven habitats. Recent studies show that vector species have adapted to ecosystems ranging from humid forests to dry savannahs.

Several initiatives to combat malaria have been put in place at national and local level, most of them have been concentrated on traditional malaria areas. This leaves the non-traditional malaria areas to be more vulnerable to the impacts of malaria as most of the local communities are not well adapted to the disease since the disease was not prevalent in these areas before. Strategic initiatives targeting these areas need to be put in place in order to assist the communities in increasing their adaptation to the effects of Malaria thereby reducing their vulnerability. Cognizant of this fact and bearing in mind the deadly effects of malaria to human kind, the proposed project seeks to address the vulnerability of the communities to malaria in the non-traditional malaria areas and to strengthen their capacity to adapt to this condition.

DESCRIPTION

Objectives

- Ensure community awareness on malaria in newly-malaria infected areas;
- Ensure capacity building for local medical practitioners and selected health centers;
- Ensure increased use of available alternative methods in combating menace of malaria.

Expected Outcomes

- Increased awareness and understanding on malaria epidemiology to local communities;
- Increased availability of trained local medical practitioners in the newly-malaria infected areas;
- Improved capacity of selected health centers in early diagnosis of malaria;
- Increased use of local herbs in combating malaria.

Activities

- To strengthen awareness and education programmes in newly malaria infected areas;
- Strengthen training programmes to local Medical Practitioners;
- Strengthen the capacity of selected health centers for early diagnosis of malaria;
- To promote the use of traditional herbs in combating malaria.

IMPLEMENTATION

Institutional arrangement

The project will be implemented by the Ministry of health and Social Welfare taking a leading role. Other collaborating institutions will include Prime Ministers Office – Regional Administration and Local Government, Ministry of Education and Vocational Training, NGOs/CBOs and Media.

COST

Activity-Indicative Budget

Total cost: USD 650,000

S/N	Activity	Costs (USD)
1	To strengthen awareness and education programmes in newly malaria infected areas	100 000
2	Strengthen training programmes to local Medical Practitioners	150 000
3	Strengthen the capacity of selected health centers for early diagnosis of malaria	300 000
4	To promote the use of traditional herbs in combating malaria.	100 000
	GRAND TOTAL	**650 000**