

crumbly.

Step 6: Drying

Spread the pressed cassava mash thinly on a clean black plastic sheet on a gentle slope in full sun. Ideally, the plastic sheet should be raised off the floor. Dry until the moisture level is below 12%. At this level of moisture, cassava chips will crack when handled. Cover with netting to keep away flies and birds. Solar, stove and hot-air dryers are more expensive, but the drying process is more reliable and higher quality.

Step 7: Milling

Mill the dried cassava mash with a hammer mill (village kinu mill) to make flour.

Step 8: Sifting

Use a sieve to sift the milled flour to remove fibrous materials and lumps. This is important to obtain high-quality free-flowing flour, free of fibre and with a good particle size.



Example of value addition on cassava crops

Step 9: Packaging and storing

Pack sifted cassava flour in airtight moisture-proof black plastic bags. Seal the bag using a burning candle and label with date of manufacture and expiry date (after twelve months). Pack bags in a carton to protect them from light. Store the cartons in a well-ventilated, cool and dry place. The packaged flour will keep for about twelve months. Farmers can sell 1bag of sifted cassava flour (for about 100,000Tsh) compared with 1bundle of raw cassava which sales for (60,000 Tsh.) this is (67% increase) in market value. In addition, the cassava value added process help farmers to be bore resilient to climate change as they can store and sell their products for up to 12 months after harvest.

The Planning for Resilience in East Africa through Policy, Adaptation, Research and Economic Development (PREPARED) Project, the central component of USAID Kenya and East Africa's PREPARED Program, works to strengthen the resiliency and sustainability of East African institutions, by targeting three key development challenges of East Africa that are likewise high priority areas for the U.S. Government (USG): climate change adaptation, biodiversity conservation, and sustainable access to water supply, sanitation and hygiene (WASH).

A USAID contract implemented by Tetra Tech ARD



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This Project is made possible by the generous support of the American People through the United States Agency for International Development (USAID). The contents of this flyer are the sole responsibility of its authors and do not necessarily reflect the views of USAID or the United States Government.



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ADAPTATION TO CLIMATE CHANGE

Introduction

Adaptation is the principal way to deal with the impacts of a changing climate. It involves taking practical actions to manage risks from climate impacts, protect communities and strengthen the resilience of the economy. E-link Consult Ltd with support from USAID Kenya and East Africa, conducted a community climate change adaptation assessment (C3A2) in four communities in Butiama districts. The results of the C3A2 indicated that agriculture is the most important sector to support climate change adaptation strategies and specifically horticulture, fruit tree planting and value addition processes.

Horticulture

Horticulture is the science of producing different varieties of fruits, vegetables, flowers ornamental plants and herbs. In Tanzania horticulture is the fast growing non-traditional crops sub-sector, which contribute significantly to food security, nutritional improvements and economic growth. However, increasing temperature and changes in rainfall amounts, distribution and intensity has caused challenges



Greenhouse nursery at Nyabange village
in Butiama District

in horticulture farming. As the effects of climate change become more evident, it is essential that farmers develop their businesses to adapt to these changes, maximizing the opportunities and minimizing risks. Using greenhouse's to support horticulture farming is a good adaptation strategy because it is cost effective and it migrates both climate and non-climatic risks such as regulating sunlight, soil quality, insects and pests. All fruits, vegetables and flowers can grow in greenhouses, and these houses can be constructed out of different materials such as glass, plastic or netting.

Fruit Tree Planting



Planting fruit trees help diversified livelihoods, provide environmental protection by lessening the effects of extreme weather events such as droughts, heavy rain and strong wind, and promote biodiversity. As fruits are valuable sources of food and income in many rural communities, people are motivated to plant them around homesteads and cultivated fields. Climatic conditions around the Lake Victoria Basin fertile soils, warm temperatures and adequate rainfall, favor growth of various types of fruits trees including papaya, avocados, mangoes and oranges.

Value addition

The majority of farmers sell crops in their raw form which is the lowest price point in the market. Value addition plays a significant role in improving livelihood of small-scale farmers by providing opportunities for higher earnings, generating employments and diversifying livelihoods. Value addition includes activities such as drying, freezing, grading, preserving, processing, packaging and branding of fruits, vegetables and other crops. In the Lake Victoria Basin cassava is a staple crop that farmers can easily add value by the following steps:

Step 1: Selecting roots

Use healthy, mature, firm, unbruised, freshly harvested cassava roots. The flesh should be white (for white varieties) with no cracks and few fibrous roots.

Step 2: Peeling

Peel with a sharp knife, removing the stalk, woody tips and fibrous roots. After it is dried, cassava peel can be used for animal feed or making compost. Peelers and graters should be washed before and after use.

Step 3: Washing

Wash peeled cassava roots with clean water twice to remove dirt, sand, soil, leaves or other impurities.

Step 4: Grating

Use a mild steel or stainless steel grater to turn cassava roots into a fine mash.

Step 5: Pressing

Pack the grated cassava mash into a clean bag such as a jute or sisal sack that will allow extra water to escape. Press the sack using a screw press, hydraulic jack or other process to remove excess water until the cassava is