**Annex 7**

MALAWI GOVERNMENT

# CHIKWAWA CADECOM
# DIOCESE OF CHIKWAWA

# ORANGE FLESHED SWEET POTATO PROJECT REPORT-MARCH TO SEPTEMBER 2011


***Chikwawa CADECOM***
***P. O. Box 162,***
***Chikwawa***
***Tel: (265) 01 420 284***
***Fax: (265) 01 420 221***
***E-Mail: ckcadecom@malawi.net***

## 1.0 INTRODUCTION

CADECOM-Chikwawa with funding from the International Potato Centre (CIP) is implementing Orange Flesh Sweet potato Project (OFSP) in three Extension Planning Areas (EPAs) - **Mitole** in Traditional Authorities *Mlilima, Katunga, Kasisi and Maseya*; **Mbewe** in Traditional Authorities *Chapananga, Lundu and Ndakwera* and **Livunzu** in Traditional Authority *Makhuwira* EPAs. The OFSP is in its second year of implementation and it is undertaken in collaboration with Chikwawa District Agriculture Development Office and Bvumbwe Agriculture Research Station. The project goal is ***To improve vitamin A and energy intake for 2027 vulnerable households in 3 EPAs of Chikwawa district with emphasis on pregnant women and young children using orange-fleshed sweet potato. Its specific objectives are; To establish Decentralized Vine Producers in all sweet potato producing areas in Chikwawa district; and To evaluate which OFSP varieties perform and taste best to local producers and consumers in Chikwawa***

Main activities during this period were community mobilization to create awareness on Zondeni sweet potato variety so that more people plant it; annual review and planning meeting, distribution of sweet potato vines using voucher system and follow up visits to sweet potato fields after vine distribution.

The communities in the impact areas rely much on cereal crops such as maize, millet, rice, and sorghum. Production of such crops is mostly through summer cropping. Sweetpotatoes, vegetables, maize are also grown through winter cultivation taking advantage of residual moisture after the rains. Other households are also able to produce sweetpotatoes and other crops using treadle pumps and other forms of irrigation.

## 2.0 PROJECT CONTEXT

Malawi is one of the world's most densely-populated and least-developed countries. It is a small, landlocked country bordered by Mozambique, Zambia, and Tanzania. Malawi has remained below the United Nation's average human development index score of sub-Saharan Africa countries due to a combination of slow economic development, poor infrastructure, the catastrophic public health effects of HIV/AIDS, and chronic child malnutrition. The 2008 UNDP Human Development Report ranked the country 164th out of 177 countries in factors such as average life expectancy of 46.3 years, adult literacy (64 percent) and GDP per capita (US$667). According to National Nutritional Policy for 2008, a total of 48% of under fives are stunted, 22% of under fives are under weights and 5% of the under fives are wasted. In addition to this, many babies are born with low birth weight. The country suffered a series of severe droughts over the last decade that led to widespread famine during 2002 and 2006. The situation changed for the better from 2008/2009 where the average yield per unit increased at national level in that the country scored 500,000 tones as surplus food. This increased to 1.2 million tons in 2009/2010.

Even though the situation was that at national level, communities in Chikwawa district did not harvest much per unit area. Most of the food harvested could only last for a period of 5 to 6 months before the next harvest. This resulted into serious food shortage at household level hence increased malnutrition cases at Rehabilitation Centres at hospitals and Health Centres.

It is estimated that 13 percent of children in Malawi die before the age of five, and that at least one-third of these deaths are related to acute malnutrition. Over half of all children suffer from stunting (48%) and 22% percent of children under five years old are underweight for their age. Despite two years of bumper harvests, malnutrition is still a problem in Malawi with Chikwawa inclusive that had food shortage for three years due to frequent droughts. The scale of the malnutrition problem in Malawi with Chikwawa inclusive is still large and calls for immediate action (UNICEF).

According to UNICEF micronutrient deficiencies, which are often referred to as hidden hunger, are also very high in the district. Malnutrition is characterized by key indicators, such as the number of underweight children and levels of stunting, wasting and micronutrient deficiencies. Micronutrient deficiency to the low nutrient content in local diets, which are based mainly on cereals, roots and tubers and said diets needed to be supplemented with micronutrient-rich foods like fish, meat, eggs, and milk and dairy products. But in a country where over half the people live on less than US$1 a day, it is a toll order for most households to manage more than a meal a day.

Farming Early Warning System Network (FEWSNET) August 2011 report indicate that the poor have experienced food consumption deficits for the past four consecutive years due to food production deficits brought on by prolonged dry spells. Poor and vulnerable households cope by doing casual labour, small scale businesses, and support from relatives, and work for asset programmes undertaken by the District Council, relief food to chronically ill, orphans and the elderly persons from government and other non-governmental organizations. CIP support for CADECOM and the Government Ministry of Agriculture to implement the OFSP could not have come a better time. Activities implemented are supporting the communities in Chikwawa to improve their nutritional status through the production of orange fleshed sweet potato at household level that is rich in Vitamin A content. The project aims to contribute towards combating hunger and vitamin A deficiency in Chikwawa district through providing backstopping services to existing extension efforts to integrate significant nutrition awareness and demand creation components into existing programs and projects in the district and designated areas with market access of such product.

## 3.0 PROJECT GOAL AND SPECIFIC OBJECTIVES

### 3.1 PROJECT GOAL

To improve vitamin A and energy intake for 2027 vulnerable households in 3 EPAs of Chikwawa district with emphasis on pregnant women and young children using orange-fleshed sweet potato.

### 3.2 SPECIFIC OBJECTIVES

- *To establish Decentralized Vine Producers in all sweet potato producing areas in Chikwawa district.*
- *To evaluate which OFSP varieties perform and taste best to local producers and consumers in Chikwawa.*

**4.0 SUMMARY OF GENERAL PROGRESS AND ACHIEVEMENTS (Impact/outcomes)**

- ✓ Additional 12 decentralized sweet potato vine multipliers received 400 bundles of Zondeni sweet potatoes from Bvumbwe Research Station at an average rate of 33 bundles per household. The bundles ranged from 4-5 Kgs each.
- ✓ The 12 decentralized sweetpotato multipliers established 1.2 hectares of land for Zondeni Multiplication.
- ✓ Another 99 farmers received sweetpotato vines at a rate of 4 Kgs each for production in April.
- ✓ 7 clubs were issued with treadle pumps to accelerate the watering and production of sweet potatoes in Mitole EPAs.

**5.0 STRATEGIES / PERFORMANCE & IMPLEMENTATION (***Inputs, activities, outputs, mgt and coordination, lessons*).

***SO1: To establish Decentralized Vine Producers in all sweet potato producing areas in Chikwawa district.***

**5.1 IDENTIFICATION OF ADDITIONAL DECENTRALIZED SECONDARY VINE MULTIPLIERS**

In collaboration with the Ministry of Agriculture and Food Security, a total of 8 additional sweetpotato vine multipliers were identified for the season. The EPAs identified the farmers based on water availability and treadle pumps since seed multiplication had to be done through winter cropping. The following additional farmers were identified and are in these locations:

| No. | Name of Participant | Village | EPA | Traditional Authority |
|---|---|---|---|---|
| 1 | Steven Chimkango | Mpasu | Mbewe | Ndakwera |
| 2 | Kennedy Brown | Mpasu | Mbewe | Ndakwera |
| 3 | Robert Greyson | Medramu | Mitole | Katunga |
| 4 | Exford Dimo | Mtondeza | Mitole | Katunga |
| 5 | Baton Mapepa | Sande | Mitole | Maseya |
| 6 | Justice F. Goba | Nkadyamwano | Livunzu | Makhuwira |
| 7 | Frackson Thengulo | Matabwa | Livunzu | Makhuwira |
| 8 | Elizabeth Chilomo | Mfunde | Livunzu | Makhuwira |

**5.2 FARMER TRAINING FOR DECENTRALISED SWEET POTATO VINE MULTIPLIERS**

The course was conducted by both Chikwawa CADECOM and Ministry of Agriculture and Food Security. The course was attended by 7 decentralized sweet potato vine multipliers from Mitole, Livunzu and Mbewe EPAs. The course was aimed at imparting knowledge and skills on rapid sweet potato vine multiplication and sweet potato production.


*Participants to decentralized sweet vine multiplication training*

*Participants listening attentively during training*

**5.2.3 COURSE CONTENT**

The course was conducted in a participatory manner and the following was covered on the day:

- Importance of sweet potato as a crop.
- Sweet potato varieties and yield potential.
- Criteria for sweet potato site selection.
- Land preparation.
- Recommended sweet potato varieties and selection procedures
- Selection and preparation of planting materials.
- Planting procedures
- Field management.
- Sweet potato diseases and their management
- Harvesting of sweet potatoes.
- Seed multiplication procedures.
- Site selection for sweet potato multiplication.
- Sweet potato vine harvesting procedures.
- Management of the sweet potato planting materials.

The participants to the course indicated that land preparation in readiness for decentralized vine multiplication was under way. Some of them indicated that they had already prepared land around 0.1 of a hectare per household. The decentralized farmers that attended the course are the ones that have land with water sources available. Treadle pumps will be used to water the vines whenever required. The participants also requested for seed support so as to start planting as soon.

**DEMONSTRATIONS ON SWEET POTATO VINE MULTIPLICATION**

This exercise was then followed the farmer training for the decentralized sweetpotato vine multipliers. The demonstrations took place at all the EPAs. These were aimed at reminding the participants on how to establish nurseries and planting sweet potato following rapid sweet potato multiplication processes. This targeted those who attended the training on rapid sweet potato multiplication.

## 5.4 FARMER TRAINING ON CIP RECORD KEEPING

### (a) Introduction

The course was attended by decentralised sweet potato vine multipliers that were identified during the first and second year of the project from Livunzu, Mbewe and Mitole EPAs. A total of 11 men and 1 woman attended the training. The course was facilitated by the Ministry of Agriculture and Food Security in collaboration with CADECOM Chikwawa CADECOM.


***CADECOM Secretary opening a course on CIP record keeping at Chikwawa TDC***

### (b) Course Objectives

The objectives of the course were to:

- Impart knowledge on how to keep records for their sweet potato multiplication enterprises as business.
- Remind farmers on quality sweet potato vine multiplication.
- Impart knowledge on the use of vouchers and their monetary accountability.
-

### (c) Course Content

The course covered the following areas:

- Definition of record keeping.
- Types of record keeping such as physical records, daily records, farm inputs records, monthly records, individual records for sweet potatoes, casual labour records, home consumption, financial record and their types.
- Importance of record keeping for business enterprises.
- Types of financial records or books such as farm inventory valuation book, cash book, sales book, purchase book, creditors book and debtors' book.
- Credit limits in business.
- What information business records can provide on daily basis.
- Quality sweet potato vine multiplication

***Participants listening attentively during training session***

**5.5 <u>SENSITISATION MEETING TO DISTRICT STAKEHOLDERS</u>**

CADECOM Chikwawa in collaboration with Chikwawa District Agriculture Development Office conducted a daylong meeting to sensitise stakeholder at district level on orange fleshed sweet potato project with funding from International Sweet Potato Centre (CIP). The meeting was attended by **27 men and 7 women.**

The objective of the meeting was to brief Chikwawa district stakeholders so as to be aware and knowledgeable of the Orange Fleshed Sweet Potato Project being implemented by Chikwawa CADECOM and Ministry of Agriculture and Food Security. This was also aimed at enabling stakeholders top appreciate and assist in up-scaling the project when they are carrying out similar activities outside the project area.

The CADECOM Secretary and Mr.Lipenga from the Ministry of Agriculture and Food Security made presentations covering CIP activities in Chikwawa district from last season todate.

**5.6 <u>SWEET POTATO VINE MULTIPLICATION</u>**

CIP Office at Bvumbwe Research Station procured and distributed Zondeni sweet potato vines to Chikwawa. A total of 400 bundles were delivered to the district for further distribution to 12 decentralized vine multipliers at Mitole, Livunzu and Mbewe EPAs. These were distributed to famers as follows:

| No. | Name of participant | Village | EPA | Area Developed (Hectare) | Bundles Distributed per head |
|---|---|---|---|---|---|
| 1 | Frandson Thengulo | Matabwa | Livunzu | 0.1 | 33 |
| 2 | Elizabeth Chilomo | Mfunde | Livunzu | 0.1 | 33 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Justice F. Goba | Nkadyamwano | Livunzu | 0.1 | 33 |
| 4 | Nazaliyo Kampira | Mangulenje | Mbewe | 0.1 | 33 |
| 5 | Steven Chimkango | Mpasu | Mbewe | 0.1 | 33 |
| 6 | Kennedy Brown | Mpasu | Mbewe | 0.1 | 33 |
| 7 | Batoni Mapepa | Sande | Mitole | 0.1 | 33 |
| 8 | Martin Maseya | Mafunga | Mitole | 0.1 | 33 |
| 9 | Exford Dimo | Ntondeza | Mitole | 0.1 | 33 |
| 10 | Eliyo Leonard | Maganga | Mitole | 0.1 | 36 |
| 11 | Robert Greyson | Medramu | Mitole | 0.1 | 33 |
| 12 | Y.O. Tembo | Salumeji | Mitole | 0.1 | 34 |
| | Total | | | 1.2 | 400 |

**5.7 DISTRIBUTION OF TREADLE PUMPS AND EXTRA SWEET POTATO VINES**

CIP Project office procured and distributed **7 money maker treadle pumps** to farmers in Mitole EPA who applied for the service. These will go to clubs in the EPA especially to those who have water sources for irrigation. This rose from the supervisory visit by Laura and Dr. Abidin Erna Putri who came to the area to see the progress of sweet potatoes production through summer cropping. During this visit the communities requested for treadle pumps and sweet potato vines to Fombe Section. An approval was made on the day and a request for 99 farmers to benefit from sweet potato vines was made thereafter. This consignment was bought from Mr. Exford Shukudu Dimo within Mitole EPA. The vines were meant for production and multiplication through nursery establishment. Each one of the farmers received 4 Kgs of sweet potato vines.

**5.8 QUARTERLY REVIEW MEETING**

(a) Introduction
CADECOM in collaboration with Chikwawa District Agriculture Office conducted a CIP Review meeting that took place at ILLOVO Human Resource Development Centre. The objective of the meeting was to:

- Review progress of activities to-date.
- Review of Annual work plan.

The meeting was attended by 10 men and one lady from both CADECOM and the Ministry of Agriculture and Food Security.

**(b) PROGRESS OF ACTIVITIES**

The EPAs made presentations on the progress of CIP activities in their respective EPAs as at that time:

**I. Livunzu EPA**

There were 64 secondary vine multipliers identified in the area. These were encouraged to plant for production and not for multiplication. Livunzu received 941 vouchers for beneficiaries to receive 4 Kg packs of sweet potato vines for both production and multiplication. The EPA established 10 hectares of

sweet potatoes for both primary and secondary multipliers. In addition to this, the EPA conducted 2 farmer field days at Mtendere and Liphangwi Sections and these were attended by 343 farmers.
The programme met several challenges such as:

- Dry spell that affected production.
  Few farmers doing well in that many lost their seed due to drought that hit the EPA.
- It was encouraging to note that there were vines available at a decentralized farmer amounting to 0.1 hectare. The vine multiplier was able to irrigate his land using treadle pumps. Other farmers were able to source vines at K300 per 50 Kg bag. In the EPAs Zondeni production was noted to be low if use of residual moisture. Production was, however, higher if grown under irrigation i.e. Mapelera Section.

### II. Mbewe EPA

Mbewe EPA has 2 decentralized farmers. They were able to sale 15 bundles of good quality sweetpotatoes vines at K160 each. The EPA identified 658 farmers to benefit from seed multiplication but only 557 received the sweetpotato vines for multiplication through the voucher system. The EPA established 5.5 hectares of sweetpotatoes. The EPA conducted farmer field days on Orange-Fleshed Sweet Potato production and multiplication at Mangulenje and Malemia. The attendance was as follows:

| EPA | Section | No. of Field Days | Attendance | | |
|---|---|---|---|---|---|
| | | | Men | Women | Total |
| Mbewe | Mangulenje | 1 | 43 | 67 | 110 |
| | Malemia | 1 | 82 | 63 | 145 |
| Total | | 2 | 125 | 130 | 255 |

Challenges
Some of the challenges the EPA met included:

- Drought that affected the area that most of the vines got scorched especially areas in the upper land.
- Fuel shortage that made supervision and follow-ups difficult.

### III. Mitole EPA

The EPA targeted 600 farmers on sweetpotato vine multiplication sensitization. There were 529 farmers that received seed vouchers from CIP. The vouchers were issued to 282 men and 247 women. The EPA established 5.0 hectares of sweet potato vines. In addition to this, 99 farmers in Fombe area received sweet potato vines for multiplication. The area also established 2 nurseries for sweet potato vines.

The EPA also conducted 2 farmer field days on sweetpotato multiplication. This was attended by 63 men and 156 women. One of the decentralized farmers, Mr. Dimo, was able to sale vines to various organizations. He realized around K200, 000. With other organizations buying from the decentralized

farmers, it was essential to follow-up on the farmers that eventually received the vines as part of the multiplier effect of the OFSP.

**Challenges**
Dry spell that affected the area hence low yields per unit area and loss of sweet potato vines.

**RESEARCH TRIALS**

- **Mitole EPA**

Research trails at Mr. Dimo's Farm was undertaken. Yields for Zondeni were very low as compared to other orange varieties. The research findings might help provide some recommendations on Zondeni variety production.

- **Mbewe EPA**

Research trials at Mbewe were under rain and had also low yields per unit area. Trials were shifted to irrigation sites. Results not yet established.

- **Livunzu EPA**

The AEDC reported that weighing of the research trials was not done. It was also said that the Yield Sub-Plots were already demarcated at Nankhwazi Section where Mr. Goba is the host farmer.

### (c) REVIEW AND REPLANNING OF CIP ACTIVITIES

As funding was received late, CADECOM reviewed some of the activities and replanned to ensure that much of what was planned in the year should be implemented.

Secondary decentralized vine multipliers from the EPAs were as follows:

| EPA | No. of Secondary Multipliers |
|---|---|
| Livunzu | 3 |
| Mbewe | 2 |
| Mitole | 3 |
| **Total** | **8** |

Farmers with permanent water sources treadle and water pumps to manage the seed multiplication processes were ideal.
Training on nutrition (Item 1:13) and farmer training on sweetpotato processing, storage and marketing (Item 3:9) were to be combined.

### 5.9 FARMER TRAINING ON SWEETPOTATO PRODUCTION

The three EPAs conducted farmer training on sweet potato production for 90 selected farmers. The training sessions were conducted at EPA levels the AEDCs and their members of staff. The aim of the training was to impart knowledge to farmers on how to produce Zondeni sweet potatoes either through summer cropping or irrigation system.

The course covered the following areas: Importance of sweetpotato as a crop, sweetpotato varieties and yield potential, criteria for sweet potato site selection, land preparation, recommended sweet potato varieties and selection procedures, selection and preparation of planting materials, planting procedures, field management, sweet potato diseases and their management, harvesting of sweetpotatoes, seed

multiplication procedures, site selection for sweetpotato multiplication, sweetpotato vine harvesting procedures and management of the sweetpotato planting materials.

Find below the attendance during the training:

| EPA | No. of Training Sessions | Attendance | | |
|---|---|---|---|---|
| | | Men | Women | Total |
| Mitole | 1 | 26 | 4 | 30 |
| Mbewe | 1 | 23 | 7 | 30 |
| Livunzu | 1 | 25 | 5 | 30 |
| | | | | |
| **Total** | **3** | **74** | **16** | **90** |

The participants to the training promised to work hard and make the programme a success. Hey all requested for seed support since most of them do not have vines available.

***SO 2: To evaluate which OFSP varieties perform and taste best to local producers and consumers in Chikwawa.***

## 6.1 SWEET POTATO EVALUATION PROGRAMME

### a) Introduction

The sweet potato evaluation programme took place at Fendeja Farm for Mr. Exford Dimo at Mtondeza 2 Village. The evaluation was attended by staff from CADECOM, Chikwawa RDP, Bvumbwe and Kasinthula Research Stations. The communities from Simbi, Mtondeza 1 and Mtondeza 2 attended the sweet potato evaluation. A total of 28 men and 19 women attended the evaluation programme.

### b) Programme Objective

The objective of the programme was to evaluate the 7 orange fresh and 8 white promising sweet potato varieties. Both Messrs Lipenga from the RDP and Nyasulu from Bvumbwe research explained what to be done in the process of sweet potato evaluation. It was further explained that the orange sweet potatoes are sources of Vitamin A that is good for development and vision especially to children we have.

### c) Evaluation Methodology

The evaluation process was participatory in the sense that both staff and farmers took part in the selection of sweet potato varieties. To begin with, the participants were requested to vegetatively select both orange fresh and white promising sweet potato varieties. Thereafter, all the 15 trials of sweet potatoes were harvested following the scientific method of harvesting from the net plot and leave out the boundary ridges and ridge margins to avoid yield influence. The tubers were counted and weighed from each net plot. Weighing was also done for the vines realized from each plot.

### d) HARVESTING RESULTS

**1 Orange Fleshed Sweetpotato Varieties**

| Sweet Potato Variety | No. of Tubers Harvested | Weight for tubers (Kgs) | Weight for vines (Kgs) |
|---|---|---|---|
| 252 | 72 | 18 | 20 |
| 428 | 66 | 18 | 13.5 |
| Kenya | 16 | 2 | 16 |
| 527 | 80 | 15 | 6 |
| Cordiner | 88 | 8 | 9.5 |
| Zondeni | Nil | Nil | 13 |
| 257 (Nyamatanga) | Nil | Nil | 41 |

**2 White Varieties**

| Sweet Potato Variety | No. of Tubers Harvested | Weight for tubers (Kgs) | Weight for vines (Kgs) |
|---|---|---|---|
| 0056 | 51 | 20.5 | 12 |
| Semusa | 103 | 17.1 | 6 |
| 432 | 62 | 9.4 | 84 |
| 137 | 110 | 19 | 12 |
| 016 | 80 | 26 | 8.5 |
| Kenya | 61 | 3.4 | 8.5 |
| 258 | 68 | 19.9 | 15.5 |
| 0299 | 76 | 16.7 | 20 |

**SELECTION AFTER HARVEST**

After the harvesting programme, both staff and farmers were requested to make a second round of selection for the promising orange fleshed and white sweet potato varieties. The three varieties were selected from each type of sweet potatoes. The selection process was participatory. Both staff and farmers selected sweet potatoes of their choices based on the weight realized from each net plot. The varieties selected are listed below in order of priority:

**1.1 Orange Fresh varieties**

- 252
- 428
- 527

**1.2 White Varieties**

- 00258
- 016
- 0056

*428 clone (orange fresh sweet potato variety)*

*Farmers doing vegetative selection of sweet potatoes*

*00258 ( white sweet potato variety)*

*Kenya sweet potato variety*

**Research Representative**

The research representative Mr. Nyasulu from Bvumbwe Research encouraged farmers to grow sweetpotato both for nutrition but also as a business venture based on their preferences.

### 6.2 FIRST BVUMBWE FIELD DAY

#### a) Introduction

The field day was organized by International Potato Centre for Sweet Potato. This took place at Bvumbwe Research Station. The field day was attended by staff and farmers from: Dedza Concern Universal, Mulanje Mountain Conservation Trust, and Millennium Village in Zomba, Chikwawa CADECOM and RDPs such as Zomba, Phalombe, Chikwawa, Dedza and Mulanje. A total of 42 men and 10 women attended the field day. The main speakers at the field day were Dr. Abidin, Dr. Felistus Chipungu and Mr. Kazembe.

**Field Day Objectives**

The objectives of the field day were to:
Conduct participatory evaluation/selection of sweet potato and maize interplanting treatments.
Promote the production of sweet potatoes as food and a cash crop.

## Viewing of Treatments

The field day participants were taken to plots where various treatments for sweet/maize interplanting were established. The treatments were:

Treatment 1: 2 Rows sweet potato to I Row maize (SC 627).
Treatment 2: 1 Row sweet potato to 1 Row maize (SC 627).
Treatment 3: 1 Row sweet potato to 2 Rows maize (SC 627).
Treatment 4: Intra planting 3 plants sweet potato and 1 plant maize (SC 627).

## Planting methodology

The plots were replicated 3 times. The plot size was 22 Ridges of 6.6 metres each. The planting distances between plants was 30 cm and between ridges was 75 cm.
The sweet potato variety used was **LU06/0428** (OFSP promising variety). The planting of both sweet potato and maize (SC 627) were done on 19/01/11. The maize only was applied with 23:21:0+4s and urea. Both 23:21:0+4s and urea fertilizers were applied at basal dressing at a rate of 2:1.

**Discussion**

Each one of the participants was requested to choose the treatment of his choice depending on the situation where he/she came from and performance of the treatment chosen. This could be based on:

- Land holding size.
- Farmers crop preference during that year.
- Economic preference of the farmer during the year.

**Crop performance on the plot**

The research team circulated questionnaires to each one of the participants so as to choose only one treatment of his/her choice based on its performance. These were submitted for their analysis based on the choices made. The farmers were also requested to implement the choices they made as back home plan.

It was noted that where there was need to make business out of sweet potato production, Treatment number 4 could be right for the farmer because of the high production of sweet potatoes per plot ( Intra planting 3 plants sweet potato and 1plant maize (SC 627). To those who prefer maize as a main crop during a particular season, Treatment 3 could be right (1 Row sweet potato to 2 Rows maize (SC

627). In case of a 50:50 food requirement, Treatment 2 could be right (1 Row sweetpotato to 1 Row maize (SC 627)).

The hosting team also provided a hypothetical gross margin analysis of the four treatments. This will act as a basis for comparison with the hypothetical gross margin analysis. The participants proposed that there should be another field day after harvest so that results for each one of the treatments are presented. The participants said that this will assist to confirm their choices or make changes based on the results to be presented.

**SECOND BVUMBWE FIELD DAY**

**Introduction**

The CIP field day took place at Bvumbwe Research Station. This was attended by staff from both Ministry of Agriculture and Food Security and NGOs such as Chikwawa CADECOM, Concern Universal from Phalombe, Mulanje and Dedza; Millennium Village in Zomba and farmers from all the districts mentioned. The objective of the field day was to harvest and evaluate the Zondeni sweet potato and maize interplanting trials that were vegetatively selected during the previous field day. The field day processes were led by Dr. Abidin Putri, Dr. Felistus Chipungu, Mr. Kazembe, Obed Mwenye and Ndovi.

**Screening House**

Before harvesting of the sweet potato trials, the participants were taken to the sweet potato screening house where issues of crop sanity are very important. In this house, the sweet potato plants are being developed after germinating them from the test tubes at the laboratory. It was said that the sweet potato seedlings are hardened off before being taken to the field for planting. This process is done for a period of one month. It was further said that the sweet potato screening was done in Kenya and plantlets were sent to Malawi for further multiplication. The plantlets do not stay for long in the laboratory. When the Zondeni sweet potato vines have been affected by diseases, there is need to call for the screening process so as to avoid further spread of diseases.

*Sweet potato plantlets in a screen house*

*Participants in the in the screen house at Bvumbwe Research*

**a) Harvesting of Sweetpotatoes**

The participants to this field day were taken to the field for taking part in the harvesting of sweet potato/maize interplanting trials. It was found that the harvesting process had already started by the research staff. The harvesting results were as follows:

| Trial Number | Trial Design | Sweet potato Harvesting Results | |
|---|---|---|---|
| | | No. of Large Tubers | No. of Small Tubers |
| 1 | 2 rows Zondeni sweet potato and 1 row SC 627 maize | 460 | 384 |
| 2 | 1 ridge Zondeni sweet potato an 1 row SC 627 maize | 284 | 420 |
| 3 | 1row Zondeni sweet potato and 2 rows SC 627 maize | 270 | 158 |
| 4 | 1 planting station maize followed by 3 planting stations sweet potatoes on the same ridge | 490 | 240 |

***Treatment No. 1 (Trial Number)***

***Treatment No. 2 (Trial Number)***

***Treatment No. 3 (Trial Number)*** ***Treatment No. 4 (Trial Number)***

Weighing of the sweet potatoes was not done at the same time. It was agreed that the weighing results will be sent to participants in due course. In addition to this the following harvesting results for maize crop were presented by research as follows:

| Trial Number | Trial Design | Sweet potato Harvesting results | | Maize harvesting Result ( Kgs) | | |
|---|---|---|---|---|---|---|
| | | No. of Large Tubers | No. of Small Tubers | 1St Harvest | 2nd Harvest | 3rd Harvest |
| 1 | 2 rows Zondeni sweet potato and 1 row SC 627 maize | 460 | 384 | 15.8 | 18 | 11 |
| 2 | 1 ridge Zondeni sweet potato an 1 row SC 627 maize | 284 | 420 | 29 | 31.4 | 14.5 |
| 3 | 1row Zondeni sweet potato and 2 rows SC 627 maize | 270 | 158 | 35 | 83.5 | 13 |
| 4 | 1 planting station maize followed by 3 planting stations sweet potatoes on the same ridge | 490 | 240 | 11 | 13 | 11 |

**Comments**

- Dr. Chipungu said that the maize crop interplated with sweet potatoes is normally affected by competition for plant food.
- It was further said that large quantities of sweet potatoes cannot be kept at one pit for storage but only a small quantity.
- If one has tender for sweet potatoes it is better to plant it under irrigation to avoid production effects of weather that could be on under summer cropping.
- Planting for sweet potatoes should be staggered so as to have sweet potato harvest throughout the year.
- Finally, participants were requested to make written requests for sweet potato vines.
- They were also told that communication is important whenever there is need.

**b) Food Processing Equipment**

The teams to the field day were issued with 2 sweet potato chippers to assist in the sweet potato processing programmes.

*Chikwawa staff receiving sweet potato slicers*

## 7.0 THE SECOND SWEETPOTATO SUPPORT PLATFORM MEETING FOR SOUTHERN

The CADECOM Secretary, Mr R.Chimsale attended the Second Sweetpotato Support Platform Meeting for Southern Africa was held at the Institute of Agricultural Research of Mozambique (IIAM), Maputo from 23-24th June 2011 at the invitation of the International Potato Centre (CIP) in Maputo. Mr Chimsale participated in the 2 days meeting to represent partners in Malawi on the Sweetpotato for Health and Profit Initiative (SPHI). Logistical support was facilitated by the CIP office in Malawi. The objective of the meeting *was* ***to review progress being made under the SPHI, exchange information and plan for any additional activities that may be undertaken*** . Participants to the meeting were drawn from Kenya, Zambia, South Africa and the hosts, Mozambique that also presented papers at the meeting. A full report was produced and circulated to OFSP partners in Malawi. It was a great honour and previlage to participate in such an imprtant meeting. The report provides a highlight on the issues and technologies shared. Special thanks are due to Dr Erna Putri and Dr Felistus Chipungu for their input in the paper presentation and all staff at CIP office in Lilongwe that facilitated my travel.

## 8.0 MINITORING OF CIP ACTIVITIES

### 8.1 A visits by CIP Team and Irish Aid

The CIP and Irish Aid team comprised of Dr. Abidin Putri and Mr Kazembe, Laura Lalor and Botha, visited Chikwawa District so as to see the progress of sweet potato multiplication and production. The team visited Mr. Exford Shukudu Dimo where they saw sweet potato trials. A total of 7 plots were for orange fleshed sweet potato varieties and 8 were white varieties. These were being administered by Ministry of Agriculture and Food Security, Kasinthula Research Station, CADECOM and Bvumbwe Research Station. In addition to this the team saw the Zondeni Multiplication plots within the Farm.

***Sweet potato evaluation trial at Fendeja Farm (left) and Visitors at Zondeni sweet potato multiplication plot (Right).***

The team also visited other famers such as Mr. and Mrs. Anthuachino and Mrs. Deliya Taulo close to Fendeja Duzi Farm within Mtondeza Village. This visit was aimed at assessing the progress of Zondeni production at individual level. The team also visited Mr. Adilecki Biliati at Chikaluma Village before addressing the farmers at Nasawa School.

A representative to the CIP team addressing farmers at Chikaluma Village (Left) and the CIP team at the Zondeni plot for Mrs. Deliya Taulo ( Right)

While at his village, the communities requested for sweet potato vines and treadle pumps. Dr. Abidin assured the farmers that she would consider the request.

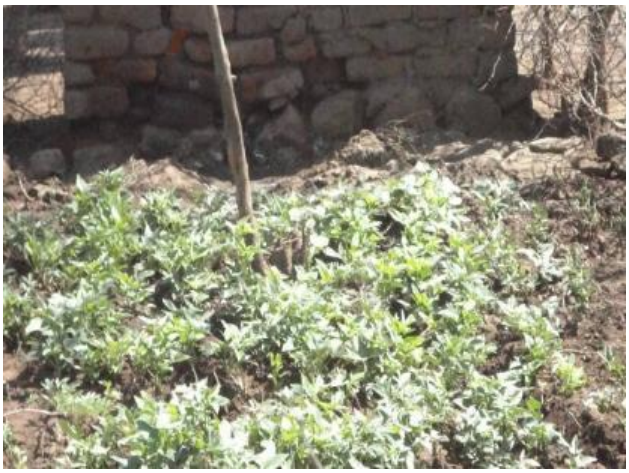
**8.2 EPA Monitoring Programme**

The team comprised of staff from both CADECOM and Chikwawa RDP visited Livunzu. Mitole and Mbewe EPAs. The programme was aimed at monitoring the progress of Zondeni sweet potato production and multiplication. The following is what was noted at each one of the EPAs.

Mitole EPA.

The team visited Chikaluma Village in Fombe Section. Sweet potato vine production and multiplication is done through summer cropping since the area does not have water for irrigation. It was noted that the

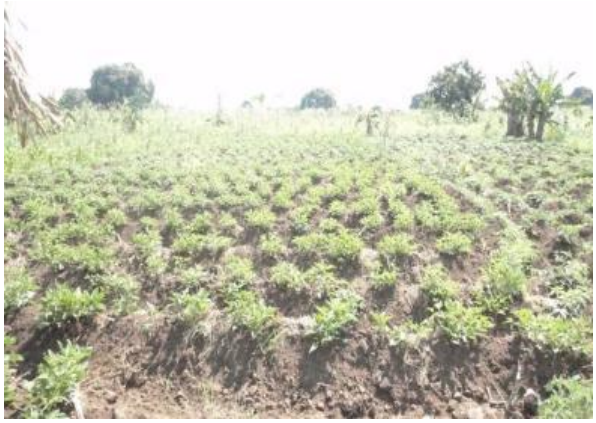
sweet potato vines they received from CIP are being multiplied through the group and individual nurseries in the village. It was also noted that some of the farmers who received vines from CIP lost them because of the drought that the area experienced. Communities were advised to rogue the sweet potato vines that were attacked by diseases such as Alternaria and mosaic. They were also advised to share the vines since some lost their crop due to dry spell.

Staff and farmers at a group sweet potato nursery (Left) and an individual sweet potato nursery (Right) at Chikaluma Village in Fombe Section.

**Livunzu Section**

The team also visited Livunzu EPA so as see the progress of sweet potato production and Multiplication. In their briefing it was noted that most of the farmers who planted summer cropping lost the seed due the drought in the area. Those that were along the wetlands sustained the sweet potato vines. The team visited one of the decentralized vine multipliers and noted that the seed was sustained and that land preparation was underway for vine multiplication. The farmer was advised to work hard so as to have seed available in the area.

***Mr. Goba the decentralized vine multiplier (Left) discussing with staff and an individual Zondeni plot at Livunzu EPA***

**(a) Mbewe EPA**

The programme continued to Mbewe EPA a visit was made to check the establishment of plots for vine multiplication. The team visited Mr. Aaron Damiano who established land amounting to 0.02 hectare for production through winter cropping. The farmer used the recycled seed from the first lot of sweet potato vines that were issued at the beginning of the project. It was noted that the farmer mixed the sweet potato varieties where Mugamba and Salera could be seen within the plot. The farmer was advised to prepare another land along the river where Zondeni alone should be planted. In so doing the seed/vines could be sustained in the area.

The team went on to visit two decentralized vine multipliers at Mpasu Village. These are Messrs Kennedy Brown and Steven Chimkango. The two had prepared land of less than 0.1 hectare per head. They were advised to extend the land since the vines to be provided could be more than the plots that were already developed.