



Strengthening Innovation and Technology Dissemination for Sustainable Development in Cereals, Cocoa and Coffee Value Chains in Western and Eastern Africa (SATIFFS)

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**Biannual Project Progress Report for Uganda for the Period of
July – December 2015**

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Outline of the report

This report covers the activity of the SATIFFS Project at Gulu University in Uganda for the period of July to December 2015 and it is the fourth in the series. The activities covered in the report includes:

- ✓ Selection of trainees for TOTs
- ✓ ToTs to support the ATs activities program
- ✓ Field trials organization and implementation

Accomplishments

1. Selection of trainees for ToTs

The trainees for ToTs were carefully selected among the students (undergraduate and graduate), staff and entrepreneurs (private sector). The composition of the ToTs includes, six (6) staff, four graduate students (one PhD and three MSc), two undergraduate students and three entrepreneurs (one artisan and two oxen operator).

2. ToTs to support the ATs Field Trials development and implementation program

Four areas of training have been identified to support the ATs Field trials activities. The areas of the training includes:

1. Training of Trainers in Operation and Maintenance of the field equipment (oxen drawn rice planter and oxen drawn rice weeder)
2. Training of Trainers (ToTs) in Food Quality Assessment and Management , including Food chemical risk analysis
3. Training of Trainers (ToTs) in Post-Harvest management. This was meant to happens in November
4. Training in Food Chemical Risk Analysis

2.1 Training of Trainers in Operation and Maintenance of the field equipment (oxen drawn rice planter and oxen drawn rice weeder)

CITED Gulu with approval from the Projection Coordination Unit at UNIMOL procured field equipment for field trials as identified in the baseline report. These equipment are

1. Seven ox-drawn rice planters
2. Seven ox-drawn rice weeders

Each project area (Gulu, Amuru and Nwoya) will receive two sets. One set of the equipment will be tried at CITED at UGU. For each district, two model farmers will be given a set of planter and weeder. The model farmers MUST have a pair of oxen. These model farmers will be trained in the use and maintenance of the equipment by the ToTs that will undergo the ToT training at CITED. When proven successful, these model farms will subsequently serve as farm field schools for training other farmers in the district for the use.



The training is conducted between 24-27th August, 2015 by Engineer Okiror Wilson, from coordinator approached Agricultural Engineering and Appropriate Technology Research Center (AEATREC-Namalere)



Ox-drawn planter



Ox-drawn weeder

Objectives of the training

The overall objective of the training was to give skills and knowledge on proper use of ox-drawn planters and weeders. The skill and knowledge would ensure sustainable use of the implements, build confidence on the technology and reduce operational costs. The specific objectives of the training were:

- a) Information on seed bed preparation, pre-requisites for planting /weeding using oxen
- b) Assemble all implements for Use.
- c) Make suitable yokes for planting rice, maize and sunflower
- d) Demonstrate and practice planting with oxen
- e) Demonstrate and practice weeding row planted crops
- f) Demonstrate proper daily maintenance of the implements

Training content

The training was conducted for three days effective from 24-27th August 2015. The approach used was a mix of theory, demonstrations and actual practices



Common tools used in the training

Activities:

1. Assembling of planters and weeders.

One planter and one weeder were assembled for training purposes. The rest of the implements were to be assembled by the participants.



Figure 1: Assembling of Planter and Weeder

2. Practice on making yokes

Participants were taken through the importance of yokes, identifying trees for making yokes and Planting/weeding yokes to make. Three yokes (ploughing, planting yoke for rice and planting yoke for maize were made (figures 1, 2 and 3).



Figures 2a-b: Making of Yoke

3. Demonstrating and practicing planting with oxen

The owner of oxen assured participants that the oxen were fully trained. Unfortunately as soon as the animals were yoked on the planter they became too wild. The training was immediately stopped. No other practices proceeded.



Figure 3: Oxen become wild

4. Demonstrating and practicing weeding row planted crops

This was demonstrated but still animals could not move in straight line. However, not much could be done.



Figures 4: Demonstration of weeding

5. Demonstrating proper daily maintenance of the implements

Participants were taken through procedure for daily maintenance of the implements. They also learnt fitting and changing of seed plates and fast wearing parts.

Recommendations

The oxen were not well trained. This resulted in poor demonstration of planting and weeding with oxen. It is therefore recommended that another intensive training be organized to enable participants gain confidence and more practices on using oxen for both planting and weeding. The training should involve training both farmers and their oxen on planting and weeding. Each farmer should come with his or her oxen for training at a community based selected open ground. The duration of the training should be not less than 3 weeks. The training is expected to cost UGX 10,160,000.00 approximately Euro 2,500

2.2 Training of Trainers (ToTs) in Food Quality Assessment and Management

The ToT in food quality assessment and management was a continuation of the training aiming at creating ability of CITED Gulu to monitor quality of grains (rice and maize) and other food in conformity to existing national and international standards. The training was attended by over 20 ToTs, majority are graduate students both MSc. & PhD

Training of trainers was conducted in August, 2015 (10th to 14th, 2015). The training was facilitated by Prof. Gianluigi Mauriello and his PhD student Dr. Annacharia from the University of Naples Federico II. The ToTs consisted of both teaching staff, laboratory technicians and students (undergraduate and graduate students).

The following important topics were covered

- An overview of microorganisms usually involved in food poisoning
- Microorganisms & food poisoning continue
- Principles of food safety (GMP, GHP and HACCP).
- Innovative technologies in food production to control food pathogens.
- Traditional technologies in food production to control food pathogens
- Microbiological analysis of foods: culture dependent and culture independent approaches.

ToTs were issued certificate of attendance, signed by the trainers and OUC SATIFFS project.



Prof. Gianluigi giving lecture



Closing ceremony: (Group photos of the ToTs holding the certificate of attendance)

2.3 Training in Food Chemical Risk Analysis

This training built on the previous training in mycotoxins analysis and food quality assessment and management. The training targeted mainly teachers and laboratory technicians in the Faculty of Agriculture and Environment and Faculty of Science. The training was conducted by Prof. Angelita Gambuti, from the University of Naples Federico II. The training took place in September, 2015 from 22nd to 25th. The training was lab based. It covered the following topics:

1. Analysis of Soluble solids and moisture content
2. Analysis of pH, Titratable acidity and food spoilage
3. Extraction of contaminants from foods and ethanol analysis
4. Analysis of total phenolics &
5. Sensory evaluation of food defects



Titratable acidity of milk



Prof. Angelita explaining the analytical procedures

3. Field trials organization and implementation

Model farmers already mobilized to receive the field technology (planter and weeders). Two farmers per district have been selected.

- Operation manual for the field equipment is being translated to local language
- Toolkits to be procured
- One graduate student is developing field trial methodology
- Another graduate student is conducting a study on aflatoxin prevalence in the project areas