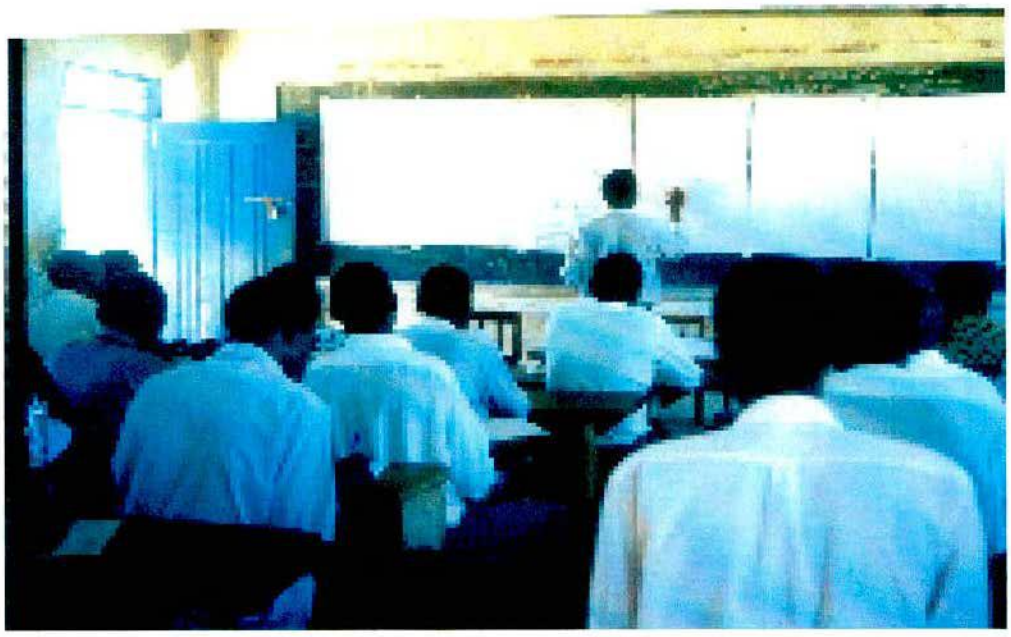
# CAPACITY BUILDING FOR FARMERS AND EXTENSIONI WORKERS IN THE EASTERN HIGHLAND DISTRICTS OF MBALE AND SIRONKO



By

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## 1. Introduction

### The goal and purpose of training

The goal of the training was to build capacity of agro-forestry farmers to grow and mange trees for commercial purposes on farmers' gardens. The purposes for which the training was organized included the following:

- Build capacity of the farmers to mobilize the community members for agro-forestry skills
- Build capacity of farmers to work in groups
- Build the capacity of farmers in the importance of gender in agro-forestry research and development activities
- Build capacity of farmers in the contribution of trees to food security and the economy
- Build capacity of farmers in seed collection and processing
- Build capacity of farmers in tree nursery establishment and management
- Build capacity of farmers in on-farm tree management

## 2. Activities planned

- Develop training modules
- Build the capacity of service providers in agroforestry extension
- Organize the meeting with service providers to harmonize the contents and agree on the approach to be used.
- Facilitate the service providers to build the capacity of farmers

## 3. Achievements

### *3.1. Development of capacity building modules and training of facilitators*

#### 3.1.1 Introduction

During the planning meetings with stakeholders farmers and extensionists farmers identified the following areas of capacity building.

⇒ Participatory research techniques
⇒ Seed collection and processing
⇒ Nursery practices
⇒ Plantation techniques
⇒ Tree improvement
⇒ Diversified tree uses and product improvement
⇒ Marketing of tree products
⇒ Processing of agroforestry products
⇒ Management of natural resources
⇒ Group dynamics and gender
⇒ Entrepreneurship and agribusiness
⇒ Time management

The following strategies were also proposed to solve the farmer's capacity building needs

⇒ Train the farmers in the above modules

⇒ Build the capacity of service providers in the above issues.

### 3.1.2 Activities

☞ **Review of the relevant literature to develop training materials**

After analysis of the farmers capacity building needs, FORRI staff in Mbale had a series of planning meetings in which it was suggested that the contents of the training modules be selected. Number of farmers and extensionists were consulted and the training contents drawn.

☞ **Training of facilitators and presentation of training materials**

A meeting was held in Mbale with selected facilitators and the draft documents for capacity building were presented.. After the meeting FORRI staff did the reviews of the modules and the final draft presented to the given to the facilitators at the sub-county level. Pre-testing was done and the facilitators provided with the necessary backstopping techniques as the trainings to farmers' proceeds. Facilitators were first identified at the sub-county with the help of sub-county officials.

Note: the training of service providers has been largely by participation. This is usually supplemented by a presentation of draft reference materials that have been developed by reviewing the necessary literature in a lecture form.

### 3.1.3 Achievements

✓ Six facilitators were identified (Table 1)

Table 1: Facilitators for capacity building of farmers

| No. | Name of facilitator | Profession /qualification | Paper |
|---|---|---|---|
| 1 | Mary WAMIMBI | Msc. Agric/ Agric officer | Farmer mobilization for agroforestry activities |
| 2 | Rose NABIRYE | BSc. Agric/Agric Officer | Gender in agroforestry research and development activities |
| 3 | Jowalia WANIAYE | BSc. Agric/Agric Officer | Contribution of trees to food security & the economy |
| 4 | Peter AYO | BSc. Agric/Agric Officer | Tree seed collection & processing |
| 5 | Moses Mutenyo | Dip. Forestry | Tree nursery establishment & management |
| 6 | James MWALYE | Dip. Forestry | On farm tree growing & management |

✓ The contents of five training modules developed and reviewed (Table 2). We discussed the most appropriate strategies and approaches that were used in the field and shared the experiences in working with farmers and implementation of developmental activities.

*Table 2. Capacity building modules developed for agroforestry farmers*

| RANK | MODULE | METHODOGY |
|---|---|---|
| 1 | Farmer mobilization | • SWORT<br>• Interviews<br>• Brainstorming<br>• Ranking<br>• Lecture<br>• Focus group Discussions<br>• Role play |
| 2 | Gender in agro forestry research and development | • SWORT<br>• Interviews<br>• Brainstorming<br>• Ranking<br>• Lecture<br>• Discussions<br>• Role play |
| 3 | Food security and the economy | • Focus group discussions<br>• Interviews<br>• Brainstorming<br>• Checklists<br>• Roles play<br>• Cards |
| 4 | Seed collection and processing | • Time trend<br>• Activity schedule<br>• Ranking<br>• Mapping<br>• SWORT<br>• Lecture |
| 5 | Tree nursery establishment & management | • |
| 6 | On farm tree management | |

✓ The methods and approaches of training the farmer representatives identified (Table 3).

### 3.2 *Capacity building for agroforestry farmers'*

#### 3.2.1 Introduction

After the the development of training materials, FORRI facilitated the extensionists (facilitators) to build the capacity of selected agroforestry farmers. The approach used was to train facilitators for agroforstry capacity development, who would later train the selected farmers. The trained farmers are expected to build the capacity of their individual farmers. The chain of capacity building below illustrates the approach used:

**FORRI ⟶ FACILITATORS ⟶ LEAD FARMERS ⟶ INDIVIDUAL FARMERS**

#### 3.2.2 Activities

☞ **Leveling of expectations**

At the beginning of every training module, farmers were asked to give their expectations and the objective of the training was explained to the participates. The approach and timing of the training was also agreed upon.

☞ **Mobilization of the agroforestry farmers for training**

Invitation messages were sent to the Agroforestry farmers through the sub county officials

⇒ **Training of the groups leaders**

This was the main activity organized for the farmers at agreed sites and times with the facilitators.

#### 3.2.3 Achievements

A significant number (Table 3 AND APPENDIX 2) of the agroforestry farmers were trained from five sub counties in six modules as highlighted in Table 2 and appendix 1. The attendance was average for all the five sub counties selected for training

Table3: Number of participants in course level 1 training

| Sub County | Facilitators | Number of participants | |
|---|---|---|---|
| | | Male | Female |
| Bulaago | 6 | 40 | 6 |
| Busano | 6 | 17 | 4 |
| Bumbo | 6 | 18 | 1 |
| Bungonkho | 6 | 7 | 15 |
| Wanale | 6 | 18 | 1 |

## 4. Course evaluation

Evaluating the course content and the way it was delivered is essential for future adjustment and would provide a basis for the improvement of future course design for the training of trainers.

### 4.1 Module Evaluation

#### 4.1.1 Relevance of the modules

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 10 | 6 | 2 | 0 |
| Gender in agro forestry | 8 | 8 | 5 | 0 |
| Food security & the economy | 5 | 7 | 7 | 0 |
| Seed collection & processing | 6 | 6 | 3 | 0 |
| Nursery establishment and management | 8 | 7 | 5 | 0 |
| On-farm management | 7 | 6 | 7 | 0 |

#### 4.1.2 Course Illustrations (examples)

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 5 | 8 | 6 | 0 |
| Gender in agro forestry | 3 | 9 | 5 | 0 |
| Food security & the economy | 5 | 7 | 7 | 0 |
| Seed collection & processing | 3 | 4 | 8 | 0 |
| Nursery establishment and management | 3 | 9 | 5 | 0 |
| On-farm management | 5 | 7 | 7 | 0 |

### 4.1.3 Group exercises

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 5 | 5 | 10 | 0 |
| Gender in agro forestry | 4 | 9 | 7 | 0 |
| Food security & the economy | 6 | 6 | 8 | 0 |
| Seed collection & processing | 0 | 6 | 4 | 0 |
| Nursery establishment and management | 4 | 8 | 8 | 0 |
| On-farm management | 5 | 7 | 9 | 0 |

### 4.1.4 Course instructors

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 6 | 8 | 4 | |
| Gender in agro forestry | 5 | 10 | 7 | |
| Food security & the economy | 3 | 10 | 6 | |
| Seed collection & processing | 5 | 5 | 4 | 1 |
| Nursery establishment and management | 5 | 8 | 5 | |
| On-farm management | 4 | 11 | 5 | |

### 4.1.5 Presentation mode

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 5 | 11 | 4 | 0 |
| Gender in agro forestry | 5 | 9 | 7 | 0 |
| Food security & the economy | 1 | 7 | 12 | 0 |
| Seed collection & processing | 5 | 6 | 5 | 0 |
| Nursery establishment and management | 5 | 9 | 7 | 0 |
| On-farm management | 6 | 10 | 6 | 0 |

### 4.1.6 Timing of the course

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 1 | 6 | 12 | 0 |
| Gender in agro forestry | 4 | 5 | 9 | 3 |
| Food security & the economy | 3 | 3 | 11 | 2 |
| Seed collection & processing | 1 | 5 | 7 | 3 |
| Nursery establishment and management | 1 | 5 | 10 | 4 |
| On-farm management | 3 | 6 | 11 | 3 |

### 4.1.7 Course simplicity

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 3 | 10 | 6 | 1 |
| Gender in agro -forestry | 4 | 4 | 12 | 0 |
| Food security & the economy | 2 | 4 | 14 | 1 |
| Seed collection & processing | 2 | 4 | 6 | 2 |
| Nursery establishment and management | 4 | 5 | 9 | 3 |
| On-farm management | 3 | 3 | 11 | 2 |

### 4.1.8 Clarity of the course

| Topic | Excellent | Very good | Good | Poor |
|---|---|---|---|---|
| Farmer mobilization | 3 | 7 | 8 | 1 |
| Gender in agro forestry | 2 | 10 | 8 | 0 |
| Food security & the economy | 4 | 2 | 13 | 0 |
| Seed collection & processing | 5 | 4 | 5 | 1 |
| Nursery establishment and management | 1 | 5 | 10 | 4 |
| On-farm management | 3 | 6 | 11 | 3 |

## 4.2 Discussions on each Module

### 4.2.1 Farmer mobilization

- Late reporting of participants caused a lot of delay in the program and the training stated a bit late.
- Illustrations were not enough
- Need for skills in time management
- There is need for technical back stopping
- Time was not enough for group discussions

### 4.2.2 Gender in agro forestry research and development

- Need for technical backstopping
- Need for more time for group discussions
- More time needed
- Additional illustrations required

### 4.2.3 Food security and the economy

- This was one of the most important and therefore more training required and technical backstopping
- More time required
- Add more practical exercises and illustrations
- FORRI to sponsor the backstopping course

### 4.2.4 Seed collection and processing

- Participation was good
- Back stopping is required
- Consider sponsoring the travel and maintenance costs for the next course
- Participants may not have the capacity to practice what was trained unless with frequent follow-ups.
- The whole topic needs to be reviewed once again.
- Enrich the topic using real examples from the field.
- More time required for the topic
- Requires more clarity and simplicity

## 5. Lessons learnt:

- The course content was generally excellent. Though it requires some additional simplicity and illustrations
- The participants were very willing to make a contribution for the forth-coming courses.
- Although the course was delivered very well, most participants expressed the need for follow up i.e. backstopping.
- Group excises generally were of significant importance, although it needed more time and more examples
- Overall the course instructors were very good but they needed to clarify and make the topics simpler.

- The time allocated for the course was not enough, although time management was generally good.

## 6. Conclusion/way forward/future plans

The course was generally well researched, compiled, focused, relevant and timely. All efforts were made by the facilitators to present it in the liveliest manner. FORRI has the technical capacity but in future it may have to dedicate more resources to the development of technical packages and facilitate the process of training. The participants need to be followed very frequently for technical back stopping. FORRI should seize the opportunity to facilitate the extensionist whose capacity has already been enhanced in the forth-coming activities.

APPENDIX 1: ATTENDENCE LISTS

## PAPER ONE: FACILITATION SKILLS AND FARMER MOBILIZATION FOR AGROFORESTRY ACTIVITIES IN EASTERN HIGHLANDS

*Prepared by Clet Wandui MASIGA and Presented by Mary WAMIMBI*

### I. FACILITATOR INFORMATION

- Facilitation involves organizational and group skills
- Facilitators must be aware of the overall program
- Generally, the facilitator is an advisor, but not a chairperson, a voting member, or an active member of any sub-committee
- The facilitator helps the group develop a work agenda, time lines, and means of coordination

### SUGGESTIONS

- Let the group know when discussion has strayed from the topic
- Ask for clarification or elaboration when needed
- Draw out ideas and feelings
- If someone has been cut off, get back to them to see if they had more to say
- If someone is monopolizing the conversation, ask them to summarize so others can have input
- State problems in a constructive way: don't place blame
- Present information, questions and problems for the group's consideration, not answers
- Make sure decisions to be made are clearly understood so time is not wasted
- Suggest procedures or ways to solve problems
- Break discussion items or problems into workable pieces and deal with each separately
- Suggest moving on when things get bogged down
- Periodically summarize what has been discussed
- Restate decisions that are made to be sure everyone understands and agrees

### DON'T

- Criticize individuals, their ideas or values
- Make decisions for the group without their agreement
- Push your own agenda

### 2 FARMER MOBILIZATION AND PARTICIPATION IN AGROFORESTRY

During group formation stages mobilization and participation is essential for the group members to deliberate on the way forward i.e. identify the forces that may retard the group/group dynamics, redefine the goals and objectives, streamline leadership and decide whether to register the group or not.

**Motivating People in Volunteer Groups**

Barriers to participation – forget about trying to recruit and motivate people:

- Learn how to avoid squelching their creativity.
- Motivation of others begins with your taking a hard look at what you now are doing that discourages people from participating, then making changes that support better group process.

In-group activities, there are both costs and benefits. If they perceive the costs outweigh the benefits, they become less active or drop out of the group—costs are barriers to participation!!

**Importance of mobilization**

- It increases people's awareness, knowledge and ability to organize for sustainability.
- A sense of ownership is created and the members gain confidence and take charge of development process.
- It enhances participation i.e. members realize their role and embrace it
- It leads to sustainable benefits in the community.
- It creates alignment and enrolment of members.
- It helps to pull scarce resources together for development.

**Factors that hinder/inhibit mobilization**

- Lack of involvement of the members/ community
- Using people who are unpopular in the community.
- Resource limitations
- Raising false/wild expectations
- Failure to create management teams
- Past community experiences e.g. failure of group enterprises before.
- Unfavorable political environment.
- Unskilled/incompetent mobilizers, no clear objectives of the exercise.
- Cultural/traditional beliefs.
- Communication barriers.
- Professionals dominating the process.

## PAPER TWO: THE RELEVANCE OF GENDER IN AGROFORESTRY RESEARCH AND DEVELOPMENT

*Prepared by Clet Wandui MASIGA and Presented by Rose NABWIRYE*

# 1.0 INTRODUCTION

## 1.1 Structure of the Paper

This paper will cover issues of gender and Agro forestry Research and Development

The structure of the paper is as follows:

- The introduction which consists of the structure and objectives
- The definitions of the two key words, gender and development
- A section on gender and development which focuses on development considerations, approaches, empowerment and planning
- Gender and agricultural development, analysing gender food security issues
- A conclusion of the paper
- Relevant case studies appear in between the sections while a list background reading comes at the end.

## 1.2 Objectives of the paper

The purpose of this paper is:

1. To show the relevancy of gender in agricultural development
2. To bring out the importance of gender planning in agricultural programs
3. To relate gender , women and food security

# 2.0 DEFINITIONS

## 2.1 Gender

Gender is a concept that refers to the social -cultural relationship between men, women and children (boys and girls) and the roles involved in that relationship.

## 2.2 Development

Development is defined as a widely participatory process of social change in a society intended to bring about both social and material advancement (including greater equality, freedom and other valued qualities) for the majority of the people through their gaining greater control over their environment "Rogers et al".

Development may also be simply taken as a positive change for the betterment of human life.

# 3.0 GENDER AND DEVELOPMENT

## 3.1 Gender considerations in Development

If we take the two definitions above, we find that there are many gender issues which need to be considered if we are to have a meaningful positive change and better human welfare. These are:

- The gender roles and needs of men and women.
- Access and control over productive resources and benefits of women and men
- Culture and external exposure of a given community

***External Exposure, Culture and Development***

*OFPEP (On-farm Productivity Enhancement Programme) identified the fuel energy crisis in Eastern Uganda as one of the factors, which hinder women from participating in development activities. The search for firewood is one of their major reproductive roles.*

*As a result, OFPEP embarked on sensitising the target communities on environmental protection. Improved mud stoves were being promoted in many communities where adoption took place; a 50% saving on fuel wood had been realised.*

*In Adhola land in Tororo, the Japadhola have a ceremony called "Ömuketo" performed to initiate a newly married woman into having an independent kitchen from her mother - in – law and moulding a cooking place is one of the marks. Because the ceremony is expensive, many women just put up 3 stones whenever they are separating the kitchens from their mothers - in - law. It was believed that if a cooking place is moulded without the ceremony, the wife would die*

*When the improved mud stoves were introduced in Mudodo, they could not be adopted because moulding was involved. Even the men trained could not risk building them in their homes. Culture dictated against the benefits of the stoves and development.*

*When an exchange visit was organised for the Mudodo group to visit another*

The development approaches are:

- WID - Women In Development
- GAD - Gender And Development

The GAD is actually a result of learning experience from the WID.

**WID**

The WID approach focuses solely on women and aims at pulling them out a marginallised group. It reduces the women's disadvantaged position by

- Broadening their opportunities
- Increasing their political power
- Improving economic security
- Reducing violence to women

However the WID approach does not challenge the status quo of gender division of Labour. Therefore, even if it aims at reducing the women's burden it might end up increasing it.

***Increasing the women's burden***

*An NGO in Seeta Mukono started a Heifer Project for women. One of the women who received a heifer, failed to cope with the increased workload. Because in addition to her traditional reproductive roles, she had to cut grass, fetch water and clean the shade for the animal.*

*Since men had not been involved in the project, the husband did not help his wife, and was*

GAD

It was realised that it was not enough to target women alone because they do not live in isolation, but in societies whose development should be a totality.

Therefore, the GAD approach was proposed to bring about equal participation of men and women in development. It targets the whole community, from all different dimensions of development, for example decision making, project planning, marketing, maintenance of agriculture and rural development.

**GAD is a rationale for gender planning**

A summary of the comparison of the two approaches is shown in the table below:

**Table 1: The 2 development approaches (WID and GAD)**

| | WID (Women in Development) | GAD (Gender and Development) |
|---|---|---|
| Focus | Exclusively on women | Men, Women, children |
| Interactions / Strategies | • Making more resources available to women in an effort to<br>• Increase efficiency and participation | • Analysis of women's and men's roles and needs in an effort to<br>• Empower women to improve their position relative to that of men in ways that benefit and transform the society. |
| Achievements | • Practical gender needs | • Strategic gender needs |
| Sustainability | Problems<br>• Women's multiple roles were often not considered thus:<br>- Increasing their workload (HP case study)<br>- Widened the gap between women &men | Advantage<br>• Powerful motivation which works for equality and respect for human rights of all people<br>THOUGH<br>• Women 's efforts can be over shadowed if not well implemented. |
| Solution | Integrate into existing development process | Empower women and other groups (e.g. with disabled, aged, e.t.c. |

### 3.3 Empowerment and participatory Development

According to the gender and development glossary, empowerment of women means the social, economic, political and legal enabling of women to act by granting or reinforcing rights, abilities and access to facilities, resources and equal participation.

While discussing empowerment there is need to understand four issues:

- ***Power over:*** Actively based on socially sanctioned threats of violence and intimidation, it invites active and passive resistance and requires constant vigilance to maintain. Power over is a creation of simple dualities; good / evil, man / woman, rich / poor, black / white, etc.
- ***Power to:*** Is a creative and enabling, the essence of an individual aspect of empowerment. The person feels powerful to solve a problem, understands how something works or learns a skill.
- ***Power with***: Involves a sense of the whole being greater than the sum of the individuals especially when a group tackles problems together.
- **Power within:** Spiritual strength and uniqueness that resides in each of us and makes us truly human. It stresses self-respect, complementary rather than duality, recognition of the aspects of the others in us.

In a gender context, men and women are socialised differently and therefore have different experience, knowledge and perspective and priorities. One cannot necessarily represent the interests of the other and neither alone can fully represent their community. We therefore need to resist power over and promote the powers to, power with and power within men and women, if we are to develop.

Participatory development is an active process of collective involvement of people in their own initiatives in bringing positive change using available resources.

People (men and women) MUST be INVOLVED and they need power to, with and within to do so.

*Women empowerment is important*

*Every time we visited one of our target communities in Busia, I got concern about the women's involvement in the development activities. If it were training, they would appear at the end of the day: when they are serving thefood they have been cooking.*

*Unlike many women in Uganda, they were literate and could communicate in English.*

*On understanding that it is a cultural issue, we decided to sensitise the men (husbands) on gender, women empowerment and participatory development. At first there was resistance because they thought we wanted the women to have power over them, but they later fully understood the concept.*

*To date this is one of the most active communities where women participation is high. Our best rural gender trainers come from this group.*

*ONFARM Gender Specialist*

### 3.4 Gender responsive Development and Project Planning

***Gender responsive development***: is based on the conceptual rationale that, because men and women have historically played different roles in society, they often have different needs and face different cultural, institutional, physical and economic constraints. (Analysed in section 4.3) Since most development efforts or projects put a competing claim on the limited time for each of the roles, the women's time is therefore more constrained than that of men. Therefore in practical terms, gender development put more attention on ensuring women's participation. The best approach in tackling the issue is to involve both men and women i.e. using GAD.

Project planning involves an analysis of all the levels in the project cycle i.e. identification, designing, appraisal implementation, monitoring and evaluation.

The rationale of gender planning in projects is to:

- Broaden opportunities in human resource utilisation
- Encourage appropriate sharing of roles and benefits and access to all resources
- Create hormoneous social interaction within the community.
- Increase public awareness through sensitisation

> **Development means change of methods which means change of life styles**

**Check list to integrate gender into project planning**

- Is the target group adequately specified (including men / women / children)
- Has the situational analysis / needs Assessment included gender analysis?
- Have women and men in the area targeted?
- Does the intervention strategy take into account the different needs, roles, resources and constraints of women and men?
- Is there a need to train the staff involved in preparing the project people in gender analysis and planning skills?
- Are there means provided to reach men and women and other groups facing particular constraints?
- Are there people – level indicators gender disagreggated to allow adequate monitoring and evaluation?
- Are the roles of men and women specified and are they gender balance / sensitive? Was the allocation participatory?
- Are the women included in the decision-making? Do the outputs of the project show this?
- Is gender training required for implementation staff or target group provided for?
- Does the information collected allow for monitoring of project activities and benefits for women and men?
- Is it possible to further address strategic needs for women, increasing their own problems and reducing gender inequalities?
- Is the project sustainable?

## 4.0 GENDER AND AGRICULTURAL DEVELOPMENT

### 4.1 The goal and how it is achieved

The overall goal of agricultural development is increased productivity, which leads to food security, and better incomes at household and national levels.

Agricultural development involves a change to better or improved methods of farming / production, marketing and utilisation.

For example:

- Use of improved higher yielding seeds
- U8se of soil conservation and fertility improvement methods
- Use of better implements or machines that ease work
- Production of better quality marketable out puts
- Better methods of food utilisation to achieve balanced diets, hence healthier families

### 4.2 Pillars of food security

Put simply, food security means having enough food or is assured of enough food resources all year round.

There are three major pillars of food security:

- ***Food availability*** or adequate food production. Traditional extension put more emphasis on this but it cannot achieve ultimate food security.
- ***Economic access:*** to purchase foods not grown on the farm and other basic needs like clothing, shelter, etc.urban dwellers mostly rely on this. They are food secure if their incomes can provide them the basic needs.
- ***Nutritional security***: this is a very important pillar, which needs to be emphasised in extension. Unless families have the right foods and know how to utilise them, they will always exhibit signs of food insecurity, even when food is abundant. Nutrition security also depends on the availability of the non- food resources such as childcare, health care, clean water and sanitation.

### 4.3 Women as key producers

According to the food policy report, Washington DC 1995, Women play significant if not dominant roles in supplying all the pillars necessary to achieve food security. In Uganda "Statistics show that although women in Uganda constitute 70% to 80% of the agricultural Labour force, only 7% own land and only 30% have access to and control over proceeds" The national Gender Policy, 1997

Unfortunately the women play this important role of food production, in face of enormous social, cultural and economic constraints.

### 4.4 Constraints of women in achieving food security

#### a) Constraints at Production

Despite the women's importance in food production, they usually have less physical and human capital than men do. Therefore they are more constrained than men as per list below are:

i. Reproductive roles: This effects the time available for on-farm activities.

ii. Limited or less access to land rights: Although it applies to all those without land rights, it affects the women more than men.

**Women's Limited access and control over Resources**

1) *In Iyolwa – Tororo, a group of women failed to adopt grass strips to control soil erosion because the men who were the landowners thought it was spoiling "Their" land.*

2) *An impact assessment of Animal Traction technologies done by ONFARM in Tororo and Busia revealed that the women's participation was limited. The reasons given were that:*

iii. Limited access to common property resources e.g. forests

iv. Lack of capital to purchase the necessary tools and use improved technologies.

v. Limited contact with agricultural extension financial institutions

vi. Lower educational levels

***Illiteracy as a constraint***

*For many rural areas, if you cannot communicate in the local language it means you will not communicate to the women.*

*During training in Mudodo – Tororo, the participants who did not know English were mostly women. Attempts were made to translate but there was no single language that could be used.*

### a) Constraints at Economic Access level

Since in rural homes women are more involved in growing food for consumption, they have less cash than men do or none at all.

In most rural homes in Uganda, men control the funds. World-wide women are less involved in income generating activities or paid employment. On the other hand, women's businesses have more management problems because of their intensive involvement in reproductive roles.

### b) Constraints at the Nutrition Security

Adequate availability of food is not necessarily nutritional security.
For example:

- The food may be plenty but not of the same nutritional requirement e.g. maize or rice or matooke (plantain).
- The food may be plenty but the families are ignorant about appropriate utilisation.
- Other non food resources such as child care, health care, clean water, and sanitation education may not be available
- Food allocation within household may be distorted e.g. where eating chicken for female is prohibited.

Ensuring nutritional security through a combination of food and non-food resources is mostly left to women.

Women are involved in agriculture, child bearing and care of household members. The time allocated to each of these is very important. For example care affects nutritional security through feeding practices (like breast feeding, weaning and through health and hygiene practices (like bathing and washing of hands).

The women who are entrusted with the nutritional security of the families are many times ignorant of the food values, therefore may not put balanced diets into considerations.

## 4.5 Recommendations for removing the constraints

### a) At the Production Level

Women's ability to fulfil their roles as food producers can be enhanced by improving women's access to resources, technology and information.

i. Reducing the women's burden may be achieved by either involving the men in some of the reproductive roles; or introducing appropriate technologies which do so e.g. energy conservation and water harvesting technologies.

ii. Ensuring women's right to land through non-discriminatory legislation and fair allocation within clans.

iii. Guaranteeing a sustainable use of natural resources by women so that there is continued use.

iv. Introducing innovative credit programmes which require non-traditional forms of collateral.

v. Provision of effective extension services to women as farm managers is essential to increasing the adoption of new technologies and realising productivity gains in agriculture.

vi. Women extensionists should be encouraged to work at grassroots level or male ones trained to deal with women farmers.

vii. The messages should be appropriate to women farmers.

viii. Girls' education should be increased to ensure the next generation of human capital. Boys and girls should always be given equal opportunities to education.

**b) At the Economic Access Level**

Men need to be sensitised to get more involved in growing of food crops and women's ability to generate and control income is increased.

Strategies should be set to enable women to be involved in more remunerative work, though this should not be at the expense of their time, their children's welfare or their own health and nutritional status.

The strategies can include:

- Technologies to reduce time spent on traditional roles at home, like using improved stoves.
- Education and training is very crucial, especially to those who do not have physical assets.
- Family planning programmes to reduce on family burden and increase their involvement in farm work and businesses.

**c) At the Nutritional Security Level**

- Variety of foods should be grown or availed to the family.
- The families, especially women should be sensitised about food values and different ways of utilising the food.
- Food allocation in homes should be balanced.
- Programs, which ensure other non-food resources, like safe water and sanitation, need to be encouraged. For example Ruwasa.
- Programs to improve and protect women's lives are important e.g. Family Planning.

## 5.0 CONCLUSIONS

Since balanced development is for the people and involves the same people who are men, women and children, it is inevitable to focus on their socio-cultural relationships, roles and responsibilities.

There is need for all development workers in all sectors, including those in agriculture, to be equipped with gender analysis and planning skills so as to formulate and implement gender sensitive programs.

In agricultural development, where the major goal is food security, the common gender issues that arise are the constraints of the women farmers who are the key producers. Therefore, interventions to address the constraints need to be identified and implemented, if we are to empower women and ensure sustainable food security.

In conclusion a focus on gender issues is very relevant to agricultural development programs, at the academic, planning and implementation levels.

**Background reading**


Carolina T and Leach B, 1997. **IPS Gender and Development Glossary**

Katrine A. Daphne S, 1997. **Developing Agricultural Extension for women farmers.** World Bank Division.

Luzobe N. B, 1997. **Gender and Food Security**. An OFPEP training of Trainers Manual

Luzobe N. B, 2000. **The relevance of Gender in Cassava trials, multiplication and material distribution.** A paper presented at a NAARI/FAO Cassava Workshop at Coline Hotel-Mukono

Suzanne W. Seed J. and Mwau A, 1994. **The Oxfam Gender Training Manual**: Published by Oxfam (UK and Ireland)

**Notes from various gender workshops attended by the author over the years.**

## PAPER TREE: CONTRIBUTION OF TREE GROWING TO FOOD SECURITY AND THE ECONOMY

**Prepared by Hillary Agaba, Clet Wandui MASIGA, and Gerald ONGONDIA**

**Presentation layout:**

- Background to food security
- Manifestations of food insecurity
- Contribution of tree growing to food security
- Challenges to achieving food security
- Approaches to achieving food security through tree growing
- Conclusions

**Background**

- Food security is the outcome of complex interactions among natural resource management and political, social, and economic factors.
- To be food secure all people must have a supply of, and access to, a reliable and sufficient quantity and quality of food that allow them to lead healthy and active lives.
- Food security is very much dependent on environmentally responsible, and sustainable, use of the world's forests. This link however is rarely reflected in national development programs

**Who are the people most affected by food insecurity?**

They are the world's poor:

- The forest dwellers
- Subsistence farmers
- Landless families
- Livestock herders

*Manifestation of food insecurity*

- Poor nutrition due to insufficient and poor meals
- Perpetual hunger and starvation
- High prevalence of disease due to lack of essential meal components
- Inability to work effectively
- Poor concentration especially of children in school
- Unnecessary stress on women in finding food for the family

*Contribution of tree growing to food security*

- Trees help maintain favourable and stable conditions needed for sustained agricultural productivity
- Trees prevent soil erosion, enhance soil fertility and maintain soil moisture
- Deep-reaching tree roots can help mobilize nutrients far below ground level for use by food crops
- Windbreaks and shelterbelts protect crops from drying, damaging winds
- Nearly 240 million pastoralists around the world depend mainly on tree fodder to feed their animals

- Trees provide shade for livestock, important to their health and productivity in hot, dry areas
- Trees and forests play an important role as storehouses of biodiversity, potentially very important in future crop breeding and pest and disease management programs
- Forests regulate the volume and fluctuations of streamflows and provide a shaded riparian environment favourable for the development of smaller life forms which fish feed on (good fish catch enriches protein-deficient diets and generates household income)
- Trees/forests provide edible fruits, seeds and nuts, leaves, tubers and roots, fungi, gum and sap which add diversity, flavouring and essential nutrients to diets
- During seasonal or emergency periods of food shortages, forests provide "hunger foods" which bridge the gap between sufficiency and famine
- Forests are the habitat for wildlife which are hunted for food and cash
- Trees, in the form of fuelwood and charcoal, are the most important source of energy in developing countries, mostly used for domestic cooking.
- Trees provide essential nutrients and medicines that can increase the nutritional impact of other foods, thus maintaining the health of rural people.

**Challenges to achieving food security**

- Isolated interventions which do not address the complexities of the root problems which underlie food security i.e. lack of interdisciplinary, intersectoral thinking and action.
- Heavy reliance of rural economies on a few economic activities making them vulnerable to downward shift in economic fortune
- Lack of supportive infrastructure in processing, transportation and accessing appropriate markets for agricultural and forest products.
- Cutting down of forests to provide land for shifting agriculture, pasture or for other uses. This removal of productive forestlands is not conducive to sustainable development -neither neither for agricultural practices nor for natural resource conservation.
- Diminishing soil productivity due to inappropriate farming practices
- Loss of local knowledge of traditional foods and medicinal plants due to forest disappearance or dependency on purchased foods.

**Approaches to achieving enhanced food security through tree growing**

- Agroforestry
- Policy
- Socio-economics
- Institutional strengthening
- Multidisciplinary approaches

**Agroforestry** - An interdisciplinary approach to addressing food security that deliberately integrates trees and shrubs into crop and livestock production systems

- improve soil structure and fertility by incorporating the tree biomass into the soil as a green manure
- improve microclimates of farms and pastures through the increased shade and shelter that trees offer
- increase farm productivity with greater yields of fodder, fuelwood, sawn timber, building materials restore degraded lands to productive, profitable use
- enhance the environment through watershed protection and soil conservation

- reduce pressure on remaining forests and grazing lands by increasing the productivity of lands truly suitable for long-term agriculture
- through use of multipurpose trees provides a variety of products and services

**Policy** - The political will must exist to eliminate policies that undermine forestry initiatives supporting food security

- Enabling legislation is required to:
- ➢ recognize long-term land use and forest and tree tenures for rural communities
- ➢ institutionalize free access to forests for forest-dependent communities
  recognize non-monetary as well as monetary value of forests

**Socio-economics** - An urgent need exists to support the diversification of rural economies by expanding the level of forest-based economic activities in particular:

- ➢ Establishing small-scale, forest-based industries
- ➢ Supporting improved marketing of non-wood forest products
- ➢ Compiling and disseminating traditional knowledge on forest foods and medicines

**Institutional strengthening**

- training of more extension workers and service providers to deliver the technologies to farmers through innovative forestry and food-related programs
- an improvement in the collaboration between scientists and development practitioners involved in food security and forestry issues
- developing resource monitoring systems for natural resources linked with forest foods and products

**Multidisciplinary approaches**

- No sector can work in isolation when addressing food security issues. The coordinated inputs of agronomists, pharmacists, nutritionists, foresters, economists and planners are needed: Research should be conducted in the following:
- Impact of forestry practices on food security and nutrition
- nutritional content of common forest foods;
- Identification of tree species which provide foods at times of greatest need
- Multiple use management techniques
- Integration of resource management programs to reconcile conflicting needs

**Conclusions:**

- Trees must be considered as an integral part of food security among rural communities and Agroforestry will particularly have to play a role in meeting the daily 'physical' and 'economic' access to food
- Concentrated, innovative, interdisciplinary effort will improve the urgent need for food security in the developing world

## PAPER FOUR: TREE SEED COLLECTION AND PROCESSING

*Prepared by Clet Wandui MASIGA and Presented By Peter AYO*

### CONTENTS

Seed production

Collection of seed

- Locating seed supplies
- estimating maturity of the seed crop
- harvesting the seed

Processing the seed

Storage of seed

Seed testing

Trade and distribution of seed

## PAPER FIVE: TREE NURSERY ESTABLISHMENT AND MANAGEMENT

*Prepared by Clet Wandui Masiga, Hillary Agaba & Gerald Ongondia and Presented by Moses Mutenyo*

### 1. A nursery

Definition

It is a place where seedlings are raised with special care and at minimal costs until such a time when they are ready for planting out.

For any planting programme, a decision must be made whether or not to establish a nursery and this will depend on size, type and location of the nursery. It is important to know the principles, which guide the choice of a new nursery site.

### 1.1. Nursery types

There are two types of nurseries namely temporary or flying nurseries and permanent nurseries.

- A temporary or flying nursery – is used to supply seedlings for a short period of about 2 – 3 years.
- A permanent nursery – is used to supply seedlings from year to year for a long period of time.

### 1.2. Major Factors to consider in Nursery Establishment

- Number of plants required per year
- Period of time for which the demand of seedlings is to last.
- The road network for transportation of seedlings within the area.
- Presence of other nurseries in the area depending on the primary objective for establishing the nursery

### 2. Selection of the Nursery Site

A good nursery site should provide for optimal seedling growth while minimizing the establishment and operational costs. When selecting a nursery site, two broad factors have to be taken into consideration and these include factors important for seedling growth and factors important for Nursery Management.

### 2.1 Factors important for seedling growth

- Water – a reliable and adequate water supply all year round

- Soil – a good soil material suitable for the seedbed and potting
- Topography – gently sloping, free draining land is suitable to avoid water logging and erosion. The following areas should particularly be avoided; heavy clay soils, which are difficult to work, swampy valley bottoms and hilltops exposed to desiccating winds.
- Materials – it is convenient to have sand or fine gravel forest soil or grassland soil, and Humus close to the nursery for making soil mixtures. Poles and sticks should also be available for fencing, and shading at the nursery site.

## 2.2 Factors important for Nursery Management

- Location – should be close to the planting area to minimize transport costs.
- Accessibility – should be accessible at all times preferably close to the road and near the supervisor's living quarters for close supervision and security.
- Ownership – the nursery location should preferably be on public land (owned by government or the community) for free decision making by management.
- Size – the size of the nursery area will depend on:
  - ⇒ the number of seedlings required for planting
  - ⇒ time taken to produce seedlings of the desired size and species in the nursery.
  - ⇒ size of the containers used

## 3 Basic Nursery facilities

- Access roads and paths – to allow for delivery of nursery materials, lifting and dispatch of the stock/ seedlings.
- Fencing – to avoid trespassers, browsing and trampling animals. Local material such as thorny branches and poles can be used for fencing and the fences have to be atleast 1.5 m high. For permanent nurseries, live fences/hedges are suitable.
- Shelter for tools, materials and workers – this is important for the workers and to keep the tools and materials in a dry and safe place. This can be in form of a simple hut constructed from locally available material such as bamboo, poles, mud etc
- A soil dump – this is important for the storage of soil materials before mixing and pot filling.
- Seedbeds – should be 1 m wide with a 60 cm path between the beds. The surface of the should be level with a low earth embankment along the edges of the bed to prevent the irrigation water from running off and washing away soil and seed.
- Pot beds – beds 1 m wide and 5-10 m long are most convenient. If they are wider, weeding and watering the centre is more difficult. On terraces, beds must be along the contours. Between the beds, access paths about 60 cm wide should be left to permit movement and the use of wheelbarrows.

- Shading and shelter from sunshine, hail and heavy rain – all seedlings need to be sheltered from intense sunshine, heavy rain and hailstones when they are still very young and delicate. Dense shading is important where intense sunshine, heavy rain and hailstones are prevalent. Shades can be made from locally available material such as sorghum or millet stalks, bamboo, grass, mats e.t.c. The shades should be easily removable because they are only temporary. Shading material should allow about half the sunlight to pass through for faster seedling growth.
- Windbreaks – Where strong and desiccating winds prevail, windbreaks should be planted. The windbreaks can be one but preferably two rows of shrubs and one row of trees planted along the nursery side facing the main wind direction. The trees should be far enough from the beds to avoid tree crowns extending over the beds when the trees have grown.
- A working shade – to protect the workers, potting soil and seedlings from sunshine and rain during pot filling and pricking out.

## 4. Nursery Layout

### 4.1. Shape

A nursery should be square shaped if possible to ease movement and location of buildings and other service centres in the nursery. For small-scale nurseries, a rectangular shape is suitable with buildings and other service centres offsetting some of the space in the longer sides of the nursery.

### 4.2. Size

The size of the nursery is determined by the area required for production (i.e. potbeds, seedbeds and reserve beds) and for roads, paths, buildings, fences and area for possible future extension. However, actual nursery layout that can be adopted, is determined by the shape and size of the site/available land.

## 5. Preparation of the Nursery Site

Steps taken in preparation of a new Nursery site may include the following:

Felling all the trees on he proposed site, removing stamps and burning any unnecessary plant material out side the nursery site.

Thoroughly destroying any termite mounds and removing any clay clods around the site.

Thoroughly ploughing or digging and removing any plant roots and stones on the site

Constructing a fence around the nursery site to protect against stray animals.

## 6. Standard Nursery Operations

Are those nursery operations, which are common to several different techniques of production in the nursery e.g. standard soil mixture i.e. seedbed and transplant bed mixtures.

### 6.1. Standard seedbed mixture

The commonest mixture for a seedbed is usually

- 50% sieved top forest soil/grassland soil (usually elephant grass)
- 50% coarse sand

The mixture must be sieved to remove all plant roots, stones and soil lamps/clods. This is usually done when the soil material is dry. Sieving also helps produce a very porous textured soil, which allows good root penetration of the germinating seed.

It is usually not necessary to add fertilizers to the seedbed mixture because this is only used as a medium for germination. Top forest soil/grassland soil gives a sufficient moisture retention to promote good seed germination.

### 6.2. Transplant bed mixture

This may highly vary between nurseries in different locations. However the recommended percentage mixtures by volume are:

- 60% unsieved top forest soil
- 10% sand
- 10% clay
- 10% manure (kraal manure, peat or compost)
- 10% gravel (small stones under 1cm)

Sand and stone are added to give good root penetration and drainage characteristics to the soil; clay is added, if necessary, to increase the soil binding characteristics round the roots, improve the soil moisture and nutrient retaining qualities; and manure is added to supply organic matter and nutrients to the soil.

## 7. Method of sowing seeds

For species that germinate well and almost at the same time, direct sowing into pots is more suitable, for example, *Acacia* species. For species that germinate with difficulty or seed, which are rare and expensive, sowing into a seedbed is preferable.

For sowing in pots, place a number of seeds in each pot depending on the germination rate. For seedbed sowing, seeds can be sown in reels running across the bed for easier weeding. The seeds should be placed at the right depth, about one or two times their diameter under the soil surface. For small seed like Eucalyptus, mixing with sand must first be done to ensure even distribution of the seed during sowing. The seeds are then covered with sand or soil and gently pressed. The seedbeds or pots are watered using cans with fine nozzles and finally covered with shading material.

### 7.1. Seed Pre-treatment

Some seeds germinate only after a long time if they are not pre-treated. The simplest pre-treatment is to soak the seed in cold water for two days. Some species like *Acacia* and *Cassia* have to be treated with hot water. For hot water treatment:

- Heat water to boil (about 20 l for every 5 kg of seed)
- Take the water off the fire

- Immerse the seed into the hot water
- Allow to cool overnight
- Rinse the seed with clean water

For pre-treatment of other species, ask for advice from Forest services or seed centres.

### 7.2. Time of sowing

The time of sowing usually depends on the time of the main planting season in particular areas and the time the seedlings of a particular species take in the nursery before attaining the right size for planting out. However it can be done between February and March then August and September.

## 8. Care and tending of seedlings in the nursery

Care and tending of seedlings comprises five basic activities namely:

a) Watering
b) Weeding
c) Shading
d) Prevention and control of pests and diseases
e) Root pruning

### 8.1. Watering

Watering is very important and should be done properly and frequently by use of watering cans or a hose. Too much water can also be harmful, therefore observe the following:

a. Water twice a day for the first weeks after germination because the roots do not reach deep enough into the soil.
b. Water only once a day but thoroughly later on and ensure the water soaks the pots to the bottom
c. Before watering, check some pots in the bed and if the soil is still sufficiently moist, do not water.
d. Water in the evening so that less water can be lost through evapouration
e. Use watering cans or sprinklers with fine nozzles so as not to wash the soil out of the pots.
f. Make sure that all parts of the bed are watered evenly.

Too much water reduces root growth, favours fungal growth and makes the shoots of the seedlings long and soft. This should be avoided. Yellowing of leaves and a cover of mosses on the tops of the pots are signs of excessive water.

### 8.2. Nursery shade

The shade can be constructed using a framework of durable poles called 'uprights'.

Uprights are erected from the ground, 20 cm into the soil, about 3-5 cm in diameter, 120 cm long for the front of the bed and 90 cm long for the rear of the bed. The intervals between uprights should be about 2-3 m along the length of the bed.

### 8.3. Shade orientation

For maximum effect of shades, the beds should be put in the East-West direction except on slopes where they should run along the contours

From March to September the shades should slope towards the North direction because the sun is in the Northern Hemisphere and from September to March, the shades should slope to the south because the sun is in the Southern Hemisphere.

### 8.4. Control of pests and diseases

Small organisms like fungi, bacteria and viruses or animals like nematodes and insects can cause damage to seedlings in the nursery. A very common disease in the nursery caused by a group of fungi is called "Dumping-off". It causes the seed to rot before germination, roots to decay before the shoot appears or the shoot to become thin at its collar and collapse

Dumping-off can be prevented by:

- Changing soil in the seedbed after some years;
- Immediately removing plants/seedlings infected or attacked by pests and burning or burying them;
- Avoiding excessive watering;
- Allowing for good drainage (sand in seedbeds);
- Ensuring good air circulation;
- Removing the weeds and reducing the density of seedlings in the beds;
- Reducing the manure levels and not applying fertilizers

### 8.5. Root Pruning

This is done to prevent roots from penetrating into the ground beyond the standard soil mixture, which is available for plant use. Root pruning also produces plants with compact root systems that will be easier to handle during lifting and planting. For potted plants, root pruning can be done by merely lifting and this is called "shocking". If the roots are already too strong then they have to be cut with pruning shears or sharp knives. Root pruning should be done repeatedly rather than waiting until the roots have grown too deep into the soil.

## 9. Culling

A cull is a plant that is rejected because it is small, weak, damaged or has a poor shoot or root system. Culling goes on throughout nursery work and the nursery workers should be supervised to make sure that only the best plants are planted.

## 10. Hardening off

This process where seedlings are made to adapt to the harsh field conditions particularly a reduction in the regular water supply. This is achieved by exposing the seedlings to full sunlight and gradually reducing the frequency of watering starting one or two months before planting out. Hardening off will make the stems hard and woody, the crown relatively short but vigorous and the root system compact and well developed. The plants have to be carefully watched during this process and if signs of wilting appear, then the plants have to be watered and the reduction has to be done more slowly.

## 11. Tools required for nursery establishment

For working the soil:

- Pick axe – used to break up hard and stony ground

  Traditional hoe – used for loosening the soil

  Rake – used for breaking up and leveling the soil

  Shovel – used for mixing, sieving and moving soil

For layout:

Tracing line – can be made of a string about 10m long attached to 30-50cm long pegs at both ends. It is used for tracing straight lines like borders of seedbeds or potbeds.

For preparation of potting soil and pot filling:

Sieve – used for removing large soil particles, stones and pieces of wood from seedbed and potting soil. It is usually made of a 1.5 cm wire mesh fitted to a wooden or metal frame.

Funnel – used for pot filling. It speeds up the process of pot filling.

Scoop – used for filling and compacting soil in pot during pot filling.

Pot cutting roll – used to rapidly cut tubes into pots of standard lengths (15, 20 or 30cm). This can be locally made from roundwood.

For watering:

Watering can – used for applying water to young plants. This can be made of plastic or metal and fitted with a fine sprinkler or rose to avoid damage to young plants denudation of roots form splashing water.

For transporting within the nursery:

Wheelbarrow – use for transporting all kinds of materials in the nursery.

For tending of seedlings:

Knives, shears, trowels or flexible steel wire – can be used to prune the roots that grow out of the pot into the pot bed ground.

Machete/Panga – can be used for cutting fence posts, removing woody weeds, trimming live fences and for chopping left over seedlings for composting.

Pointed stick, piece of wire hammered flat at one end and bent at the other to make a handle are useful for weeding potbeds and potted seedling stock.

Small shovel or flat piece of wood – are used to lift germinated seedlings for transferring into pots without damaging their roots.

## 12. Seedbed and transplant bed labels

This may be made of wood or metal and writings can be made using indelible ink. They are fixed soon after sowing. They show species, quantity sown, date sown, origin of seed date germinated and date pricked out etc.

## 13. Nursery Records

Nursery records provide information about the performance, cost and productivity of the nursery and to improve planning and future operations. The most important nursery records that must be kept include the following:

- Delivery reports;
- Plant development records;
- Nursery inventories

Delivery reports show the number of seedlings of each species that was dispatched from the nursery, their quality, date of delivery, recipient of the seedlings and to what site they were delivered. Later then, survival of the seedlings can be followed up.

Plant development records are used to keep track of performance of the nursery. They show:

- How long it takes for a species to grow to the right size of planting;
- How much seed is required to produce the required number of seedlings;
- How long it takes for the seeds of a particular species to germinate and whether it all germinates at the same time or over a longer period of time;
- Which species need more or less watering and shading, special precautions against pests and diseases.

Nursery inventories are used to establish the number of seedlings of the different species that are available for planning and preparation of the planting work. This information can be collected monthly or every two months of nursery production.

## PAPER SIX: ON FARM TREE ESTABLISHMENT AND MANAGEMENT

***Prepared by Clet Wandui Masiga & Presented By James MWALYE***

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1. SITE SURVEY AND SELECTION
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6. WEED CONTROL AND TENDING OPERATIONS
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11. SEED ORCHARDS

## APPENDIX 2: LIST OF PARTICIPANTS FROM THE SUB COUNTIES

### a) BUSANO SUB COUNTY

| NAME OF PARTICIPANTS | M/F | VILLAGE | PARISH |
|---|---|---|---|
| 1. Shibutta George | M | Bungwanyi | Buyaka |
| 2. Doroti Kibeti | F | Bwikonge | Buyaka |
| 3. Masaba Godfrey | M | Bunandutu | Buyaka |
| 4. Paul Nabusoba | M | Bwikhonye | Buyaka |
| 5. Aidah Wamakale | F | Bungwenyi | Buyaka |
| 6. Rex Mabonga | F | Nasasa | Buyaka |
| 7. Simon peter Mutama | M | Buyaka | Bumutsopa |
| 8. Paul Masaba | M | Bungunyi | Buyaka |
| 9. Makyeme Leo | M | Bwikonje | Buyaka |
| 10. Hosea Mushikoma | M | Bufooto | Buyaka |
| 11. Namanda Geoffrey | M | Bungwanyi | Busano |
| 12. Sam paul Walalawa | M | Bungwanyi | Buyaka |
| 13. Agnes Mubajje | F | Bunnkhoze | Buyaka |
| 14. Mulinda Julius | M | Bunnkhoze | Buyaka |
| 15. Jane Nambafu | F | Bunnkhoze | Buyaka |
| 16. Mkkwana Anamagani | M | Bungunyi | Buyaka |
| 17. Christopher Masab a | M | Bungunyi | Buyaka |
| 18. Malakha James | M | Burikhoje | Buyaka |
| 19. Sefolose Nalyanya | F | Bwikhonje | Buyaka |
| 20. Mushalwana | M | Bwikhonje | Buyaka |
| 21. Massa muhoma | M | Bwikhonje | Buyaka |
| 22. Welishe Simoni | M | Bwikhonje | Buyaka |

## b) BUMBO SUB COUNTY

| NAME OF PARTICIPANTS | M/F | VILLAGE | PARISH |
|---|---|---|---|
| 1. Sitati Paulo | M | Butemulani | Soono |
| 2. Mayeku Andeleya | M | Sitata | Soono |
| 3. Musundi Enock | M | Buwambwa | Buteteya |
| 4. Watengeli Sam | M | Bumaafu | Buteteya |
| 5. Wateya E.K | M | BUWAMBA | Buteteya |
| 6. Wafula Jackson Kasoli | M | Butemulani | Soono |
| 7. Nyongesa John | M | Sitila | Soono |
| 8. Absolom Psiywani | M | Bunjosi | Soono |
| 9. Kibolili F | F | Buwambwa | Buteteya |
| 10. Wandwasi Peter | M | Bumaafu | Buteteya |
| 11. Masifa Jonathana | M | Kisekele | Soono |
| 12. Wakwaahale Vincent | M | Bunamonyonyi | Soono |
| 13. Masaba R | M | Bukokho | Masaba |
| 14. Watenyeli Damasco | M | Butemulani | Buteteya |
| 15. Masawi Jacabo | M | Bumakoloti | Buteteya |
| 16. Wanambwa John | M | Buwanmbwa | Buteteya |
| 17. Toboli Jacksoni | M | Kisekele | Buteteya |
| 18. Wafula Johnstone | M | Sitala | Soono |
| 19. Makatu Andelea | M | Bumaafa | Buteteya |

## c) BULAAGO SUB COUNTY

| NAME OF PARTICIPANTS | M/F | VILLAGE | PARISH |
|---|---|---|---|
| 1) 1) Tomoi Paul | M | Tirigina | Busiya |
| 2) Wesamoyo M Nangai | M | Magabo | Busiya |
| 3) Gonyiti GORDI | M | Kajere | Busiya |
| 4) Mafabi Bon Gomadya | M | Tirigima | Busiya |
| 5) REV Jackson B.Tiggo | M | Gisigo | Busiya |
| 6) Muluwe Bernard Wolera | M | Kajere | Busiya |

| | | | |
|---|---|---|---|
| 7) Magolo MILTON | M | Tirigima | Busiya |
| 8) Wosukiri Paul | M | Tirigima | Busiya |
| 9) Gitabani Tom | M | Kajere | Busiya |
| 10) Webanze Wolera Micheal | M | Kajere | Busiya |
| 11) Kanzimini Namasime | M | Kajere | Busiya |
| 12) Wettaka Sam | M | Magambo | Busiya |
| 13) Wetaka James | M | Kajere | Busiya |
| 14) Mukwana Jacob | M | Magabo | Busiya |
| 15) Agenes Wenyenze | F | Magabo | Busiya |
| 16) Topista Nabunzale | F | Gisigo | Busiya |
| 17) Waniala Dan | M | Gisigo | Busiya |
| 18) Gidudu Yokoyanani | M | Magabo | Busiya |
| 19) E. Mazina | F | Kajere | Busiya |
| 20) Wosukira Robert | M | Kajere | Busiya |
| 21) H. Masuda | M | Magobo | Busiya |
| 22) Allen Massa | F | Tirigima | Busiya |

**d) BUNGOKHO- MUTOTO SUB COUNTY**

| NAME OF PARTICIPANTS | M/F | VILLAGE | PARISH |
|---|---|---|---|
| 1. Mangali James | M | Bunamwani | Bumutoto |
| 2. Masaba Yefusa | M | Bunamwani | Bumutoto |
| 3. Betty Kibosi | F | Bunamwani | Bumutoto |
| 4. Robbinah Nambafu | F | Bunamwani | Bumutoto |
| 5. Mangali George | M | Bunamwani | Bumutoto |
| 6. Wanyakala William | M | Bunamwani | Bumutoto |
| 7. Masaba Nafutali | M | Bunamwani | Bumutoto |
| 8. Mukhaye Magulata | F | Bunamwani | Bumutoto |
| 9. Namutosi Eva | F | Bunamwani | Bumutoto |
| 10. Namakhonje Grace | F | Bunamwani | Bumutoto |
| 11. Butema Grace | F | Bunamwani | Bumutoto |
| 12. Twanza Topista | F | Bunamwani | Bumutoto |

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|---|---|---|---|
| 13. Mutoga Merani | F | Bunamwani | Bumutoto |
| 14. Khaitsa Beatrice | F | Bunamwani | Bumutoto |
| 15. Mutonyi Naume | F | Bunamwani | Bumutoto |
| 16. Nandutu Lydia | F | Bunamwani | Bumutoto |
| 17. Mtonyi Loy | F | Bunamwani | Bumutoto |
| 18. Mutonyi Joyce | F | Bunamwani | Bumutoto |
| 19. Wandowo Wilson | M | Bunamwani | Bumutoto |
| 20. Makona Alex | M | Bunamwani | Bumutoto |
| 21. Annet Namboya | F | Bunamwani | Bumutoto |
| 22. Jane Kituyi | F | Bunamwani | Bumutoto |
| 23. Masambu Vicent | M | Bunamwani | Bumutoto |
| 24. Mutoga Merani | F | Bunamwani | Bumutoto |
| 25. Sirikye charles | M | Namahe | Bumwambu |
| 26. Masiga stephen | M | Namboga | Bumwambu |
| 27. Gidoi Jolly | M | Gundu | Bumwambu |
| 28. Namansoko Deo | M | Gamuseny | Bumwambu |
| 29. Cyprian Sabunyo | M | Conner cell | Bumwambu |
| 30. Gidongo Boniface | M | Nabonga | Bumwambu |
| 31. Gibutai Ambrose | M | Kisoyo | Bumwambu |
| 32. Nakisisa Robert | M | Gamusenyi | Bumwambu |
| 33. Patrict Wettaka | M | Gamusenyi | Bumwambu |
| 34. Wagidoso James | M | Corner | Bumwambu |
| 35. Wamboza Fred | M | Kisya | Bumwambu |
| 36. Malanga | M | Nabumbo | Bumwambu |
| 37. Sirikye Samuel | M | Gombe | Bumwambu |
| 38. Wangoboya Micheal | M | Kisubi | Bumwambu |
| 39. Womaniala W-Richard | M | Frenci | Bumwambu |
| 40. Nkisisa | M | Namahe | Bumwambu |
| 41. Mrs Wanzila | F | Gamusenyi | Bumwambu |
| 42. Wanzila Ben | M | Namahe | Bumwambu |
| 43. Masiga | M | Namahe | Bumwambu |

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|---|---|---|---|
| 44. Zebosi James | M | Namahe | Bumwambu |
| 45. Wamba Levi | M | Gamusenyi | Bumwambu |
| 46. Bukomba Isaac | M | Namahe | Bumwambu |
| 47. Wamboza Peter | M | Namahe | Bumwambu |
| 48. Masiga George | M | Namahe | Bumwambu |

e) **WANALE SUB COUNTY**

| NAME OF PARTICIPANTS | M/F | PARISH |
|---|---|---|
| 1. Masaba Majid | M | Budwale |
| 2. Woniayl Sulati | M | Budwale |
| 3. Makosiya Sirraji | M | Bubetsye |
| 4. Wambunya Subairi | M | Budwale |
| 5. Woniaye Sulai | M | Bubetsye |
| 6. Wogye S. | M | Bubetsye |
| 7. Mubogii J. | M | Budwale |
| 8. Masaba ISA | M | Bubetsye |
| 9. Nabende | M | Budwale |
| 10. Mwiri Yolamu | M | Budwale |
| 11. Shijere Sulema | F | Budwale |
| 12. Waniaye | M | Bubetsye |
| 13. P.WANDA | M | Bubetsye |
| 14. Wanyanga Gerald Wanyanga | M | Bubetsye |
| 15. Namasaba | F | Budwale |
| 16. Walugane S. | M | Budwale |
| 17. Khaitsa Amina | F | Bubetsye |
| 18. Wanadamba | M | Budwale |
| 19. Katali AMUSI | M | Budwale |

**Location:** *Wanale sub county*

| No | Name | Parish |
|---|---|---|
| 1. | Masaba Majid | Budwale/Lasowe |
| 2. | Woniaye Sulati | Budwale/Bunabudwabuli |
| 3. | Makosiya Sirraji | Budwale |
| 4. | Wamboya Subairi | Budwale |
| 5. | Woniaye Sulai | Bubetsye/Bubirabi |
| 6. | Wogye S | Bubetsye |
| 7. | Mubogii. J. | Budwale |
| 8. | Masaba Isa | Bubetsye |
| 9. | Nabende | Budwale |
| 10. | Mwiri Yolam | Budwale |
| 11. | Shijere Sulaiman | Budwale |
| 12. | Waniaya | Bubetsye |
| 13. | P. Wanda | Bubetsye |
| 14. | Wanyanga Gerald | |
| 15. | Namasaba Judith | Budwale |
| 16. | Walugane .S. | Budeale/Lasowe |
| 17. | Khaitsa Amina | Bubetsye/Bubirabi |
| 18. | Wanadamba | Budeale |
| 19. | Kaduli Amos | Budwale/Bukumi |

ATTENDENCE LIST FOR *Bumbo sub-county.*

| No | Name | Village | Parish |
|---|---|---|---|
| 1. | Musundi Enock | Buwambwa | Buteteya |
| 2. | Wangeli Sam | Butemulani I | Buteteya |
| 3. | Watetya E.K | Sitila | Buteteya |
| 4. | Jackson Karani | Bunjosi | Soono |
| 5. | Nyongesa John | Sitila | Soono |
| 6. | Absolom Psiywani | Bunjosi | Soono |
| 7. | Kiboli | Butemulani | Buteteya |
| 8. | Wandwasi Petero | Bumaafu | Butereya |
| 9. | Masifa Donathan | Kisekele | Buteteya |
| 10. | Wakwaahale Vicent | Bunamonyonyi | Soono |
| 11. | Masaba R | Bukokho | Soono |
| 12. | Watonyeli Damasco | Butemulani I | Buteteya |
| 13. | Masawi Jacob | Bumakoloti | Buteteya |
| 14. | Wanambwa John | Bunambwa | Buteteya |
| 15. | Toboli Jackson | Kisekelo | Buteteya |
| 16. | Wafula Justine | Sitala | Soono |
| 17. | Makatu Andbaa | Bunafu | Buteteya |
| 18. | Sitati Paulo | Butemulani I | Soono |
| 19. | Mayeku Andeleya | Sitati | Soono |

**ATTENDENCE LIST**

**Location:** ***Bunghokho-Mutoto Bunamwanyi.***

| No | Name | Village | Parish |
|---|---|---|---|
| 1. | Mangali James | Bunanimi | Bumutoto |
| 2. | Masaba Yefusa | Bunanimi | Bumutoto |
| 3. | Betty Kibosi | Bunanimi | Bumutoto |
| 4. | Robbinah Nambafu | Bunanimi | Bumutoto |
| 5. | Nangali George | Bunanimi | Bumutoto |
| 6. | Wanyakala William | Bunanimi | Bumutoto |
| 7. | Masaba Nafutali | Bunanimi | Bumutoto |
| 8. | Mukhaye Magolata | Bunanimi | Bumutoto |
| 9. | Namutosi Eva | Bunanimi | Bumutoto |
| 10. | Namakhonje Grace | Bunanimi | Bumutoto |
| 11. | Buteme Grace | Bunanimi | Bumutoto |
| 12. | Twanza Topista | Bunanimi | Bumutoto |
| 13. | Mujoga Merani | Bunanimi | Bumutoto |
| 14. | Masaba Vincent | Bunanimi | Bumutoto |
| 15. | Khaitsa Beatrice | Bunanimi | Bumutoto |
| 16. | Mutonyi Loy | Bunanimi | Bumutoto |
| 17. | Mutonyi Naume | Bunanimi | Bumutoto |
| 18. | Nandudu Lydia | Bunanimi | Bumutoto |
| 20. | Mutonyi Joyce | Bunanimi | Bumutoto |
| 21. | Wandowo Wilson | Bunanimi | Bumutoto |
| 22. | Makona Alex | Bunanimi | Bumutoto |

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|---|---|---|---|
| 23. | Annet Namboya | Bunanimi | Bumutoto |
| 24. | Jane Kituyi | Bunanimi | Bumutoto |
| 25. | Watsala | Bunanimi | Bumutoto |
| 26. | Mangali Jeniffer | Bunanimi | Bumutoto |
| 27. | Okuri Annet | Bunanimi | Bumutoto |
| 28. | Nabulobi Jane | Bunanimi | Bumutoto |
| 29. | Mutonnyi Sarah | Bunanimi | Bumutoto |
| 30. | Mutonyi Hariet | Bunanimi | Bumutoto |
| 31. | Mandali Mary | Bunanimi | Bumutoto |
| 32. | Okuri Jennifer | Bunanimi | Bumutoto |
| 33. | Mafamala | Bukunalire | Bumutoto |
| 34. | Nabulobi Grace | Bunanimi | Bumutoto |
| 35. | Khayitsa Mutuwa | Bunanimi | Bumutoto |
| 36. | Washiwala Alon | Bunanimi | Bumutoto |
| 37. | Nambafu Ininda | Bunanimi | Bumutoto |

**ATTENDANCE LIST FOR *BUSANO SUB COUNTY***

| No | Name of participant | Village | Parish |
|---|---|---|---|
| 1. | Shibutta George | Bungwanyi | Buyaka |
| 2. | Doroti Kibeti | Bwikonge | Buyaka |
| 3. | Masaba Godfrey | Bwikonge | Buyaka |
| 4. | Paul Nabusoba | Buandutu | Buyaka |
| 5. | Aidah Wamakale | Bwikhonje | Buyaka |
| 6. | Rex Mabonga | Bungwanyi | Buyaka |
| 7. | Simon Peter Mutama | Nasasa | Buyaka |
| 8. | Paul Masaba | Buyaka | Bumutsopa |

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|---|---|---|---|
| 9. | Makyeme Leo | Bungwanyi | Buyaka |
| 10. | Hosea Mushikoma | Bwikonje | Buyaka |
| 11. | Namada Geofrey | Bufooto | Busano |
| 12. | Sam Paul Wakalawu | Bungwanyi | Buyaka |
| 13. | Agnes Mubajje | Bungwanyi | Buyaka |
| 14. | Mulinda Julius | Bwikonje | Buyaka |
| 15. | Junic Nambafu | Bwikonje | Buyaka |
| 16. | Mukwana Anamazani | Bwikonje | Buyaka |
| 17. | Christopher Masaba | Bungwanyi | Buyaka |
| 18. | Malakha James | Bwikonje | Buyaka |
| 19. | Sefolose Nalyanya | Bwikonje | Buyaka |
| 20. | Mushikoma | Bwikonje | Buyaka |
| 21. | Mushoni S.P | Bwikonje | Buyaka |
| 22. | Welsihe Simon | Bwikonje | Buyaka |

**ATTENDANCE LIST**

## Location: *Bubetsye Lower Village-Bumasikye, Busoba*

| No | Name of participant | Village | Parish |
|---|---|---|---|
| 1. | Peter Wanyera | Bubetsye | Bumasikye |
| 2. | Clementina A. Wataaka | Bubetsye | Bumasikye |
| 3. | Moses Makombe | Bubetsye | Bumasikye |
| 4. | Margaret Makayi | Bubetsye | Bumasikye |
| 5. | Harriet Nangaka | Bubetsye | Bumasikye |
| 6. | Kevina Makombe | Bubetsye | Bumasikye |
| 7. | Wanyera Barabara | Bubetsye | Bumasikye |
| 8. | Matasi Jenipher | Bubetsye | Bumasikye |

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|---|---|---|---|
| 9. | Makayi Lawrence | Bubetsye | Bumasikye |
| 10. | Wanyera peter | Bubetsye | Bumasikye |
| 11. | Wataaka C.W | Bubetsye | Bumasikye |
| 12. | Wamalukuh Wataka | Bubetsye | Bumasikye |

**ATTENDANCE LIST** ***Buwangolo, Busoba***

| No | Name of participant | Village | Parish |
|---|---|---|---|
| 1. | Maraka Mabonga Y. | Buwangolo | Bunanimi |
| 2. | Napule John | Buwangolo | Bunanimi |
| 3. | Wakyaya James | Buwangolo | Bunanimi |
| 4. | Mase Tito | Buwangolo | Bunanimi |
| 5. | Wakyaya Robert | Buwangolo | Bunanimi |
| 6. | Khimali Iginatio | Buwangolo | Bunanimi |
| 7. | Soita Stepher | Buwangolo | Bunanimi |
| 8. | Rose Siv | Namwaro | Bunanimi |
| 9. | Musimbi Peter | Namwaro | Bunanimi |
| 10. | Wandela Robert | Namwaro | Bunanimi |
| 11. | Bwonya Moses | Namwaro | Bunanimi |
| 12. | Wakyaya Sam | Namwaro | Bunanimi |
| 13. | Butoto Godfrey | Namwaro | Bunanimi |
| 14. | Wakalanga Richard | Namwaro | Bunanimi |
| 15. | Wetonyi David | Namwaro | Bunanimi |
| 16. | Wandyetye Francis | Namwaro | Bunanimi |
| 17. | Nambafu Yekoyasi | Namwaro | Bunanimi |
| 18. | Bwonya Ben | Namwaro | Bunanimi |
| 19. | Nambafu Godfrey | Lwangoli | Bunanimi |
| 20. | Musamali Edward | Lwangoli | Bunanimi |

**ATTENDANCE LIST:** ***Bubetsye Lower Village – Bumasikye, Busoba***

| No | Name of participant | Village | Parish |
|---|---|---|---|
| 1. | Clementina A. Wataaka | Bubetsye lower | Bumasikye |
| 2. | Moses Makombe | Bubetsye lower | Bumasikye |
| 3. | Margaret Makayi | Bubetsye lower | Bumasikye |
| 4. | Harriet Nagaka | Bubetsye lower | Bumasikye |
| 5. | Kevina Makombe | Bubetsye lower | Bumasikye |
| 6. | Wanyera Barabara | Bubetsye lower | Bumasikye |
| 7. | Matasi Jennipher | Bubetsye lower | Bumasikye |
| 8. | Makayi Lawrence | Bubetsye lower | Bumasikye |
| 9. | Wanyera peter | Bubetsye lower | Bumasikye |
| 10. | Wataaka C.W | Bubetsye lower | Bumasikye |
| 11. | Wamalukhui Wataka | Bubetsye lower | Bumasikye |

**ATTENDENCE LIST:** *BUWANGOLO, BUSOBA*

| | | | |
|---|---|---|---|
| 1. | Mr. Khaukha Ronald | - | Chairperson |
| 2. | Mr. Khaukha Vincent | - | Secretary. |
| 3. | Mr. Kazozi John | - | Member. |
| 4. | Mr. Maraka Yefusa | - | Vice Chairperson. |
| 5. | Mr. Wachaya James | - | Chairperson L.C. I Member. |
| 6. | Mr. Mwanika Andrew | - | Member. |
| 7. | Mr. Hapondi Yefusa | - | Member |
| 8. | Mrs. Beatrice Hapondi | - | Member. |
| 9. | Miss. Namagoe Barbra | - | Member. |
| 10. | Mr. Wokuri Godfrey | - | Member. |
| 11. | Mr. Napule John | - | Member. |

**ATTENDENCE LIST: Namatsyo, Wanale sub-county.**

| | | | | |
|---|---|---|---|---|
| 1. | Masaba Fred | - | Bubirabi | ..... |
| 2. | Shiondo George | - | Linangasa | ..... |
| 3. | Sadik Natwere | - | Naburwa | ..... |
| 4. | Mafabi Robert | - | " | ..... |
| 5. | Difasi Washiki | - | " | ..... |
| 6. | Moses Watagwa | - | " | ..... |
| 7. | Werife Fred | - | Lwangasa | ..... |
| 8. | Natiko Stephen | - | Naburwa | ..... |
| 9. | Mukhungwa David | - | " | ..... |
| 10. | Watata Muzamiru | - | Lwangasa | ..... |
| 11. | Wamungu Bernard | - | " | ..... |
| 12. | Mafabi Milton | - | Naburwa | ..... |
| 13. | Mugoya Charles | - | Buwasu | ..... |

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|---|---|---|---|
| 14. Namarome Twalaha | - | " | ..... |
| 15. Nambozo Stella | - | Lwangasa | ..... |
| 16. Nambozo Zamu | - | Naburwa | ..... |
| 17. Namwamba Tabu | - | Bunabubulo | ..... |
| 18. Isaya Muttambo | - | " | ..... |
| 19. Florence Khabatsa | - | Buwasu | ..... |
| 20. Walumu .B. Twaha | - | Buwasu | ..... |
| 21. Wamoya Iddi | - | Lwangasa | ..... |
| 22. Khainza Mary | - | " | ..... |
| 23. Mafabi Hussein | - | Buwasu | ..... |
| 24. Abdu Wambede | - | Buwasu | ..... |
| 25. Waniaye John | - | Buwasu | ..... |
| 26. Allen Waniaye | - | " | ..... |
| 27. Khaukha Magidu | - | " | ..... |
| 28. Watagwa Michael | - | Lwangasa | ..... |
| 29. Khaukha Sawali | - | Buwasu | ..... |
| 30. Wakoko Vincent | - | Buwasu | ..... |
| 31. Wakoko Fred | - | Buwasu | ..... |
| 32. Muzamiru Guranka | - | Bukhinyo | ..... |

## ATTENDENCE LIST

**Location:** ***Bungwanyi Village, Busoba sub-county***

| | NAME | TITLE | VILLAGE |
|---|---|---|---|
| 1 | BUWERI AUGUSTINE | ELDER | BUNANDUTU |
| 2 | MULINDA JULIUS | | BWIKHONJE |
| 3 | NATSEBA SAUL | | BWIKHONJE |
| 4 | WANYAKALA JAMES | | BWIKHONJE |
| 5 | WESONGA WILSON | | BWIKHONJE |
| 6 | WELISHE VINCENT | | BWIKHONJE |
| 7 | WABWALA JAMES .M. | | NABIKYENGA |
| 8 | NAMANDA GEOFFREY | | BUTOOTO |
| 9 | NANGUMBA BWAYO | | NASIKYANGA |
| 10 | SHIBUTA GEORGE | FARMER | BUNGWANYI |
| 11 | SOPHIE MASABA | | BUYAKA |
| 12 | WAMUNDU STEPHEN | | BUMUKAMBA |
| 13 | MUBAJJE DIFASI | | BUNGWANYI |
| 14 | MADINGO GEORGE WAMURUBU | FARMER | BUWANGWA |
| 15 | EDITH MABONGA | FARMER | BUNGWANYI |
| 16 | MWAYAFU DEO | FARMER | BUNGWANYI |
| 17 | MURASHI ISAAC | FARMER | BUNGWANYI |
| 18 | JUNIC NAMBAFU | FARMER | BWIKHONGE |
| 19 | JUSTINE MAKYELESHE | FARMER | BUSIANGO |

**ATTENDENCE Location: Lwasowe Gp/Budwal, Wanale sub-county**

| | NAME | TITLE |
|---|---|---|
| 1 | AYUBU WEBISA | MEMBER |
| 2 | KAMISSI MAFABI | MEMBER |
| 3 | AHAMADA WANIALE | MEMBER |
| 4 | ABUBAKALI WEBISA | MEMBER |
| 5 | WEBISA ERIASA | MEMBER |
| 6 | MASABA ATTEYI GIDINA | MEMBER |
| 7 | HUSSEINI MALIERO | MEMBER |
| 8 | MASUBA MUTWALIBI | L.C.I Chairman |
| 9 | WEBISA AKIMU (Youth Chairman, Budwale) | Member |
| 10 | BULUHANI WANIALE | MEMBER |
| 12 | WEBISA MALIKI | MEMBER |
| 13 | NANDUDU MWAJUMA | MEMBER |
| 14 | HAJATI NULU GIDIMA | MEMBER |
| 15 | SALAMA NAMUNGOWA | MEMBER |
| 16 | ZULA MAFABI | MEMBER |
| 17 | HAWA KABUYA | MEMBER |
| 18 | KASYA WEBISA | MEMBER |
| 19 | SARAH MIDIERO | MEMBER |
| 20 | KASIFA NAFUDI | MEMBER |
| 21 | ZAITUNA MAFABI | MEMBER |
| 22 | SIDA MAFABI | MEMBER |
| 23 | SALAMUSIDA WEBISA | MEMBER |
| 24 | GIDUDU MWAJUMA | MEMBER |
| 25 | ZAMU WAZISI | MEMBER |
| 26 | LUKIYA GIDONGO | MEMBER |
| 27 | JAMIRA MAFABI | MEMBER |

**BUMASIKYE PARISH FARMERS' ASSOCIATION (BPFA)**

**Bumasikye Parish, Busoba Sub-County, Mbale.**

**ATTENDENCE LIST.**

Activity: *Training in Tree nursery establishment and management*

| S/NO. | NAME | SEX | YOUTH | VILLAGE |
|---|---|---|---|---|
| 1 | MAKHUWA HARUNA (SECRETARY) | M | √ | MAHAANGA |
| 2 | CLEMENTINA WATATA | F | √ | BUBETSYE |
| 3 | MUTANGI DAVIS | M | √ | BUBETSYE |
| 4 | WADERA DAVID | M | √ | BUBETSYE |
| 5 | MATASI JOSEPH | M | √ | BUBETSYE |
| 6 | WATAAKA C.W. | M | - | BUBETSYE |
| 7 | WANYERA PETER | M | √ | BUBETSYE |
| 8 | WAMALUKAH WATAKA JR | M | - | BUBETSYE |
| 9 | WABINYIKO BERNARD | M | - | BUBETSYE |
| 10 | WEYAO CHARLES FRED | M | √ | BUBETSYE |

**ATTENDENCE LIST.**

Activity: *FarmerTraining onTree nursery establishment and management*

| No | NAME | VILLAGE |
|---|---|---|
| 1 | KOOBA GEORGE | NASHISAKA |
| 2 | WATSALA SAM | BUNYWAKA |
| 3 | KOOBA ANDREW | NASHISAKA |
| 4 | KATAMI EVERLINE | NASHISAKA |
| 5 | NABALAYO JULIET | NASHISAKA |
| 6 | KITUYI LOY | NASHISAKA |
| 7 | WATSALA DANNIEL | NASHISAKA |
| 8 | KHARAMBO .S. | NASHISAKA |