



# Farmer Field School Implementation Guide

FARM FORESTRY AND  
LIVELIHOOD DEVELOPMENT







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LIVELIHOOD DEVELOPMENT



This guide is based on the experience gained from the Intensified Social Forestry Project (ISFP) in Semi Arid Areas in Kenya, financed by Japan International Cooperation Agency (JICA) and implemented by the Kenya Forest Service.

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FAO, JICA, and KFS 2011



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## Abbreviations & Acronyms

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<b>AESA</b>	Agro Ecosystem Analysis
<b>AfDB</b>	African Development Bank
<b>ASAL</b>	Arid and Semi Arid Areas
<b>CDA</b>	Coast Development Authority
<b>CTA</b>	Chief Technical Advisor
<b>DCCF</b>	Deputy Chief Conservator of Forests
<b>DFO</b>	District Forestry Officer
<b>DFEO</b>	Divisional Forestry Extension Officer
<b>DM</b>	District Manager
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FD</b>	Forest Department
<b>FFs</b>	Farmer Facilitators
<b>FFS</b>	Farmer Field School
<b>FFFS</b>	Farm Forestry Field School
<b>GOJ</b>	Government of Japan
<b>GOK</b>	Government of Kenya
<b>ICIPE</b>	International Centre of Insect Physiology and Ecology
<b>IFAD</b>	International Fund for Agricultural Development
<b>IGA</b>	Income Generating Activities
<b>ILRI</b>	International Livestock Research Institute
<b>IPM</b>	Integrated Pest Management
<b>ISFP</b>	Intensified Social Forestry Project
<b>JICA</b>	Japan International Cooperation Agency
<b>KARI</b>	Kenya Agricultural Research Institute
<b>Ksh</b>	Kenya Shilling



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<b>LFFS</b>	Livelihood Farmer Field School
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MENR</b>	Ministry of Environment and Natural Resources
<b>MOA</b>	Ministry of Agriculture
<b>MOU</b>	Memorandum of Understanding
<b>NFE</b>	Non Formal Education
<b>NGO</b>	Non Governmental Organization
<b>PC</b>	Project Coordinator
<b>PCE</b>	Participatory Comparative Experiment
<b>PFO</b>	Provincial Forestry Officer
<b>PM&amp;E</b>	Participatory M&E
<b>PMU</b>	Project Management Unit
<b>PTD</b>	Participatory Technology Development
<b>Q&amp;A</b>	Question and Answer
<b>SFTP</b>	Social Forestry Training Project
<b>SLDP</b>	Sustainable Livelihood Development Project
<b>SOFEM</b>	Social Forestry Extension Model Development Project
<b>SSIS</b>	Small Scale Irrigation System
<b>TCP</b>	Technical Cooperation Programme
<b>TOF</b>	Training of Facilitators
<b>UNDP</b>	United Nations Development Programme

## Foreword

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The Government of Kenya and the Japan International Cooperation Agency (JICA) have a longstanding partnership for the development of social forestry in the semi arid areas of Kenya. JICA's initial assistance started with the Social Forestry Training Project (SFTP) in 1985 for a period of 12 years. The main focus of the project was to develop tree nursery and tree planting technologies in the semi arid areas as well as to provide social forestry training for farmers and government staff. The Social Forestry Extension Model Development Project (SOFEM) started in 1997, following SFTP's completion. It aimed to develop an extension model for the promotion of farm forestry among local residents in semi arid areas of Kenya. These two projects were implemented jointly by the Kenya Forest Research Institute (KEFRI) and JICA.

The Intensified Social Forestry Project in semi arid areas of Kenya (ISFP) commenced in 2004 for a period of five years. The project consolidated the main lessons learned and key technologies acquired in the previous two projects. Although the previous two projects achieved their project goals, both could not reach a substantial number of farmers; for example, SOFEM worked with only 98 farmers. ISFP was tasked to cover a wider geographic area and a greater number of beneficiaries as well as organize delivery of farm forestry extension services whilst empowering farmers and improving extension service quality. The main purpose of ISFP thus became to intensify social forestry activities in the target areas. The Kenya Forest Service (KFS), the key institution responsible for forest administration and management, became the main implementer of the project, with close collaboration of KEFRI.

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Building on past experiences, ISFP brought a new dimension to forestry extension and created a systematic extension management system. With assistance from the Food and Agriculture Organization of the United Nations (FAO), the project introduced the Farmer Field School (FFS) methodology, which had previously mainly been applied for agricultural extension service delivery in the country. It customised the approach to farm forestry, leading to the Farm Forestry Field School (FFFS) approach. Currently this approach has become the standard method for farm forestry extension in KFS and is widely used in other districts and projects in Kenya. With help from FAO, KFS has further developed the Livelihood Farmer Field School, which was based on the FFS. It is anticipated that this guide will contribute to improved extension service delivery among project managers and field workers who are facilitating farmers' empowerment processes through the FFS approach.

D. K. Mbugua  
Director, Kenya Forest Service

## Preface

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This document is based on the manual prepared for the Intensified Social Forestry Project (ISFP) in semi arid areas of Kenya (2004 – 2009) under the technical cooperation programme of Japan International Cooperation Agency (JICA) to the Government of Kenya, more specifically to Kenya Forest Service (KFS). From the onset of the project, the FAO Investment Centre was involved in designing of implementing Farm Forestry Farmer Field Schools and compilation of the manual. The cooperation between JICA and FAO produced not only the successful results of the ISFP, but also the preparation of the Support to Community Based Farm Forestry Enterprises Project funded by the Japan Social Development Fund being managed by the World Bank. JICA would like to acknowledge the valuable input of all the KFS staff involved in the ISFP and five JICA experts who participated in the project. JICA would also like to take this opportunity to thank the FAO Investment Centre for its efforts to support the ISFP and making this publication possible. JICA hopes that this guide will improve the rural livelihoods of the people of Kenya, and elsewhere.

### **Masaaki Kato**

JICA Representative in Kenya



## Acknowledgment

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This publication is the result of the work of KFS staff, KEFRI Kitui Centre staff, Farmer Facilitators and JICA experts over the period 2004-2009 as well as staff members for the Sustainable Livelihood Development Project funded by FAO. Valuable advice and support to FFS facilitation training at the early stage of the ISFP was provided during that period by Mr Titus Mutinda, FFS master trainer at the Kitui District Office of the Ministry of Agriculture, and Ms Deborah Duveskog, FAO Kenya.

Special thanks to Mr Aidan Gulliver (Senior Economist at the FAO Investment Centre) who provided support for writing and reviewing the sections on RuralInvest. We appreciate Mr Roland van Asch (Agricultural Economist) and Ilona deBorhegyi (Information officer at the FAO Investment Centre) for reviewing and commenting on the draft. Mr Kevin Gallagher (FAO Rep in Pakistan), Mr Tim Stephens (Agricultural Engineer) and Ms Pamela Pozarny (Rural Sociologist at the FAO Investment Centre) provided insightful comments and contributed to the editing of the FFS manual used in the ISFP. Thanks also to Mr Guy Evers (Africa Service Chief, the FAO Investment Centre) and Ms Alberta Mascaretti (Agricultural Officer), Ms Astrid Agostini (Economist), Ms Nada Zvekic (Communication Officer), and David Berk (Intern) of the FAO Investment Centre who provided continuous support to finalize this work. Many thanks to Ms Lorella Candido (Book Designer) who turned the draft into a very beautiful book. Finally, JICA's generous support to the ISFP and KFS is highly appreciated. This document would not have been completed without consistent JICA support and funding.

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# Introduction

## Background of this Guide

This guide builds on the three previous versions of the Farm Forestry Field School (FFFS) manual prepared by the Intensified Social Forestry Project in Semi Arid Areas (ISFP) of Kenya. The manual was first developed in a workshop setting with the participation of Kenya Forest Service (KFS) staff members and JICA experts at the onset of the ISFP in 2004. FAO was involved in the workshop providing technical assistance to design the FFFS implementation process, facilitate the workshops and compile workshop outputs into the manual. The ISFP conducted the manual review twice through workshops. The KFS field staff members who carried out the FFFS presented the reality of the field and issues faced by farmers. Such experience sharing enriched the entire project implementation process and subsequently this publication. FAO was tasked to finalize the reviews and was asked to carry out an independent external review in 2007.

## Purpose of the Guide

Earlier versions were developed to assist KFS staff and farmer facilitators (FFs) in implementing activities of the ISFP in Kenya. The manual was successfully adopted by KFS and other projects including the Green Zone Project funded by the African Development Bank (AfDB). However, the manual was specifically written for the purpose of the ISFP. It was site specific and did not incorporate different experiences in other parts of Kenya and other countries.

This version aims to provide an FFS implementation guide for a wider audience, especially for project designers and managers as well as field practitioners who intend to use the FFS platform for extension support to farm forestry or forestry based livelihood development. In addition to a basic conceptual framework, it provides the know how for managing effective FFS extension activities, an overview of FFS with FAO's RuralInvest toolkit, and describes a mobile phone based monitoring system.

## Structure of the Guide

This guide includes **Part I: Basics of FFS**, which introduces key principles of FFS for an understanding of the foundation of the FFS approach<sup>1</sup>; **Part II: FFS Planning and Management** provides an overview and examples of how FFS was managed and implemented in the ISFP; and **Part III: Field Guide for FFS Facilitators** provides a step by step description of FFS field implementation. It further includes a sequence of activities as well as lessons learned in the ISFP. It is expected that this guide will be first introduced to extension workers in "Training of Facilitators (TOF)" courses and subsequently used during the FFS implementation cycle.

Examples of templates for use in the FFS implementation are provided throughout the document and Annexes.<sup>2</sup> These are based on the actual formats for management and M&E that were used in the ISFP.

## The ISFP Experience

The ISFP project, which ended in March 2009, set up more than 300 FFSs involving approximately 5,000 participants and trained more than 130 farmer facilitators. All facilitators in the project received FFS facilitation training and backstopping by FFS master trainers in the country. Adoption rates among FFS participants of technologies related to farm forestry, including tree nursery, fruit orchard, woodlots and grafting, appeared to be more than 80 percent (FAO, 2007).

1. For further in dept information, users of this guide are strongly encouraged to visit other FFS resource materials at the FFSnet Database (<http://www.infobridge.org/ffsnet/>)

2. Contact at [InvestmentCentre@fao.org](mailto:InvestmentCentre@fao.org) for the electronic version of the formats included in this guide.



The ISFP experience shows that the dedication and commitment to farmers of government and field officials – Divisional Forestry Extension Officers (DFEOs), District Forest Officers (DFOs), and Farmer Facilitators (FFs) – was the crucial factor for project success. The presence of a well focused and able project management team, and constant backstopping of the facilitators, also ensured high quality service delivery and smooth flow of funds. Adequate support to facilitators also proved crucial in carrying out field work including timely release of funds for fuel and allowances. Prompt delivery of learning materials (stationery and host farm inputs) was also essential in ensuring successful and timely implementation of FFS.

### Use of this Guide in Other Projects

The positive experience of the ISFP resulted in the adoption within Kenya of: the FFS technical platform and the FFFS manual by KFS for its own extension programme using government budget resources; the Green Zone Project (AfDB); Support to Community Based Farm Forestry Enterprise Project in Semi Arid Areas in Kenya (the World Bank); and Livelihood Farmer Field Schools (LFFS) under the FAO funded Sustainable Livelihood Development Project (SLDP) in the Mau Forest Complex. In addition, the EU funded FAO implemented project on Small Scale Irrigation System (SSIS) Farmer Field Schools in the Philippines uses the framework and material of this guide. A JICA supported project in Ethiopia, the Belete Gera Participatory Forest Management Project, also adopted and implemented the approach using the same concept and guidelines developed in the ISFP. The project in Ethiopia received support from KFS and Kenyan FFS master trainers in carrying out TOF. The experience in Ethiopia and FAO LFFS shows that the ISFP FFS concept is applicable under a range of circumstances. However, it also shows that different contexts may require variation in how the approach is implemented. For example, poor accessibility within the project area in Ethiopia sometimes required FFS facilitators to walk for more than 10 hours to visit FFS groups and caused problems of maintaining FFS quality. Experiences in Ethiopia and KFS's other projects confirmed that TOF

3. Project for Increasing Rice Yield and Productivity through the Promotion of Small Scale Irrigation and Integrated Crop Management Systems in Rainfed Areas

training and provision of a technical manual to FFS facilitators was not sufficient. It is clear that any FFS must be backstopped by experienced FFS facilitators in order to maintain quality.

The experience of the projects described above, and elsewhere that FFS has been successfully applied, clearly demonstrates the sustainable benefits that can be achieved through farmer level capacity building. However, the FFS process also provides a management tool that can increase the capacity and responsiveness of the institutions that adopt the approach. This guide also aims to promote the value of FFS as a management tool (see details in Part II).

### **After FFS: Integration of FFS with RurallInvest**

The experience of ISFP shows that graduated FFS groups have often disbanded or become dormant because of a lack of appropriate follow up activities, even though individually the members continue to apply technologies that they acquired from the FFSs. A weakness of FFS has been the lack of an institutional framework to support the scaling up of these learning experiences to generate substantial income and improved livelihoods. This weakness was recognized by KFS which in 2007 requested the FAO Investment Centre to formulate a proposal for the Japan Social Development Fund. The Centre proposed the integration of FFS with another FAO product called “RurallInvest” which consists of a multilingual toolkit package of training modules and software targeted to assist the design and management of small and medium rural investment projects.

RurallInvest can provide an institutional framework to support FFS as it helps groups to identify and properly assess opportunities for investment and scaling up of FFS experiences. With its two modules, “Profile” and “Project”, RurallInvest can assist FFS members to examine under the profile module whether the potential of enterprises that they want to develop will justify the further effort required to develop them in detail.<sup>4</sup> However, the success of RurallInvest depends upon applicants being able to demonstrate

4. see <http://www.fao.org/tc/tci/urrole/rurallinvest/en/> for access to RurallInvest training modules and software



that they have ideas which would merit investment. Experiences with both FFS and RurallInvest suggest that the two tools have great potential for promoting rural development and would have mutual complementarities; FFS is a tool which can provide critical technical and planning inputs that enable RurallInvest proposals to be developed, while RurallInvest provides a framework for FFS graduates to overcome FFS's lack of follow on structure. Based on the experience gained in FAO's SLDP in the Mau Forest Complex, this guide demonstrates how RurallInvest can be used together with FFS.





# Part I: Key principles of Farmer Field School

## 1

### What is Farmer Field School?

The FFS approach is an innovative, participatory and interactive learning approach that emphasizes problem solving and discovery based learning. FFS aims to build farmers' capacity to analyze their production systems, identify problems, test possible solutions, and eventually encourage the participants to adopt the practices most suitable to their farming systems (FAO, 2003 c). FFS can also provide an opportunity for farmers to practice and test/evaluate sustainable land use technologies, and introduce new technologies through comparing their conventional technologies developed with their own tradition and culture.

FFS is usually a time bound activity (generally one agricultural production cycle or a year), involving a group (commonly 20-30) of farmers. It is facilitated by extension staff or – increasingly – by farmer facilitators (FFs). The method emphasizes group observation, discussion, analysis, presentation, and collective decision making and actions. The basic component of FFS is setting up of a Participatory Comparative Experiment (PCE), commonly referred to as Participatory Technology Development (PTD), whereby the farmers put the FFS concept into practice. A PCE can be developed using subjects of agriculture, livestock, forestry, agroforestry, livelihoods and others.

Presentation of PCE findings by participants is a key activity in the FFS's learning process. It encourages participants to present their findings, experiences and knowledge in front of other FFS members while defending their opinions on findings and decisions made. Such process builds self confidence, particularly for women, poor

## 1

household members, or minority group members. Another key outcome, although it is not an explicit FFS objective, is the development of leadership. An FFS must have an appointed group of leaders composed of a Chairperson, Deputy Chairperson, Secretary, and Treasurer. In addition, the FFS membership is divided into four to five sub groups and each sub group has a leader. Through managing the FFS group and sub groups, these appointed leaders as well as the rest of the members build up skills of group management and leadership. Furthermore, FFS encourages cohesiveness among members and develops team work. Although FFS is a time bound project activity, many FFS groups continue after the FFS learning cycle is completed for self motivated study of other subjects, development of collective marketing of agricultural produce, and to establish cooperatives.

**BOX 1** FFS and Increase of Community Coherency

The communities of the SLDP target area in the Mau Forest Complex were severely disrupted after post election violence in 2008. Examples of SLDP in the Mau Forest Complex demonstrate that FFS activities can increase cohesion of a mixed membership community including several ethnic groups. Initially, the project was not able to form FFS groups due to its policy not to favour particular ethnic groups and its aim to bring different ethnic groups back together. Different ethnic groups wanted separate groups composed of members of their own ethnic group. The project held several meetings with such communities to convince them to form a group including people from different ethnic groups. The allocation of leadership posts was another obstacle after forming the FFS groups. With perseverance the project can now successfully demonstrate how FFS can alleviate tension between people from different ethnic groups.

## What are the Core Principles of FFS?

The following are the core principles and components of the FFS approach:

- **The field is the learning place.** Learning takes place in the field, usually on a host farm where a PCE is established and all learning sessions are held. Participants observe and learn from the field work instead of from textbooks and lectures from extension workers. Improved farm practices must be suitable for the local context, which is usually influenced by local ecological and socio-economic conditions as well as farmers' preferences.
- **Facilitation, not teaching.** The role of the facilitator is crucial for successful learning and empowerment because FFS does not focus on teaching but on guiding FFS members through the learning process. To foster the learner centred process, the facilitator remains in the background, listening attentively and reflectively, asking questions and encouraging participants to explore more in the field and present their ideas. The facilitator must stimulate FFS members to think, observe, analyze and discover answers by themselves.
- **Hands-on and discovery-based learning.** The process of learning adheres to principles of adult education and "learning by doing". Adults tend not to learn and change behaviour by passive listening, but as a consequence of experience. Through learning by doing in a discovery based manner, group members cherish ownership over their knowledge and gain confidence in what they have learned.
- **The farmer as expert.** The FFS approach recognizes community members as the experts within their particular contexts, and considers indigenous and local knowledge an important source of information to be used within the FFS learning process. Through the process, FFS members learn how to improve their own abilities to observe and analyse problems, and to develop practical and relevant solutions. The approach inspires members to learn continuously by exploring and educating themselves on issues and topics that affect their livelihoods.
- **Equity and no hierarchy.** An FFS is designed for all to participate on an equal basis. FFS supports no hierarchy between farmers and



facilitators, group leaders and ordinary members, diploma holders and those who do not read and write. All are equal partners in the FFS learning experience.

- **Integrated and learner-defined curriculum.** The FFS curriculum is defined by the learners and is unique for each group, though much of learning enterprises are pre designed under the mandate of FFS implementing agencies. The basic principle for any FFS is that all topics must be related to what is important to the group members and aim to fill their particular gaps in knowledge.
- **Comparative experiments.** Knowledge is gained through practical experiments where different options are compared with each other. The trials are regularly observed and analyzed. Issues are discussed as they occur — in reality. This aspect of the approach dictates the “duration” of an FFS cycle that has to match the life cycle of the enterprise being studied, i.e. from “(planted) seed to (harvested) seed”, or from “egg to egg” in the case of poultry.
- **Agro-ecosystem analysis.** The agro ecosystem analysis (AESA) is one of the cornerstones of the FFS approach. AESA is practiced by all FFS members through all stages of FFS cycle. It involves observation, analysis and presentation for synthesis and discussion. This activity enhances participants’ analyzing skills as well as their presentation, thereby improving knowledge based decision making in addition to their communication capabilities.
- **Special topics.** The focus of special topics is decided on by the group and plays a central role in FFS. Special topics can cover a wide range of topics and can be multi sectoral. It is part of the FFS curriculum and learning experiments. The selection of special topics should be demand driven, usually addressing wider livelihood issues. These special topics can also be facilitated by external resource persons rather than by the FFS group facilitator.
- **Team building and social animation.** Aspects of team building, group dynamics and social animation are important components of learning sessions. Through song, dance and drama people share knowledge and culture, build cohesion, and learn communication and leadership skills. This also creates a platform for dealing with difficult subjects such as abuse, gender and HIV/AIDS.
- **Participatory monitoring and evaluation.** While preparing the FFS curriculum, participants develop a plan for monitoring and



evaluating progress to later assess whether they are achieving the agreed objectives.

## How does FFS benefit Farmers?

### 1. Strengthening observation capability and increasing knowledge ownership through discovery based learning.

FFS does not rely mainly on information and techniques brought by extension agents and transferred to farmers. Instead, it aims to encourage farmers' systematic observation and informed decision making based on discovery based learning so that new knowledge and practices are generated by the farmers themselves. This process stimulates ownership of the learning process and ensures local adaptation. The main role of extension workers is to enhance farmers' skills in practicing new ideas, discovering their own solutions, and developing coping strategies to deal with ever changing situations. Technologies practiced under FFS usually are site specific and suitable to the farmers who use them because the FFS participants themselves set up learning sites and put technologies into practice. As a result, adoption rates are usually high among FFS members. Transfer of knowledge to neighbors is also common in FFS since learning results are based on farmers' experiences applicable to their neighbors.

### 2. Building self-confidence and enhancing decision-making capacity.

FFS is not about transferring and teaching knowledge and techniques, as it is the case in conventional extension. The FFS approach empowers farmers in various aspects through confidence building and decision making exercises. Unlike in other extension approaches, farmers in the FFS approach are facilitated to take a lead in learning sessions under a participatory manner. Every FFS session allocates time for presentation of field observations followed by group discussion. In addition, participants

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in FFS are divided into sub groups and discussions among sub group members are encouraged. These exercises involving tangible field results usually provide a foundation for participants to “own” the learning process, build their confidence and personal skills, and thus become empowered in their farming activities and collaborating with other farmers in finding solutions.

### **3. Minimizing risks in experimenting with new practices.**

It is risky for subsistence farmers to switch from their conventional land use practices to new ones based only on information or short training sessions provided by extension workers. They simply cannot afford crop failures when trying out new systems.

FFS provides farmers with the opportunity to try out new practices on a group farm where risks are minimal, and potential losses would be shared by group members. Learning sites are usually very small in size; sufficient only to test and compare new technologies and farmers' own conventional farmers' practices. They need only to contribute a half day per week of their time to participate in FFS, while they can continue working on their own food crops using their conventional farming methods. FFS does not promote new methods in isolation from regular farmer practices; rather it provides an opportunity for the participants to test and compare alternatives in a relatively risk free environment with measurable figures for discussion and debate among participating farmers. FFS is therefore a less risky approach for subsistence farmers compared to most conventional extension methods.

### **4. Changing deep-rooted beliefs and practices.**

Farmers have a wealth of knowledge, which is usually based on their experience. It is also true that they are sometime based on misconceptions. Wrong ideas or false deep rooted impressions cannot be easily swept aside through short term training or field visits.

FFS provides an analytical structure and season long regular interactions with the field, facilitators, and other FFS members, which

enables participants to learn firsthand the benefits of testing new technologies in PCE and to understand the behaviour of introduced crops. The FFS experience can as well assist them to recognize misunderstandings and avoid errors in farming practices or beliefs.

## 5. Developing problem-solving capabilities.

A farmer is an agricultural entrepreneur who has to deal with constantly changing natural and socio economic circumstances. To be successful, a farmer needs a range of skills including natural resource management, accounting, marketing, negotiation, problem solving and conflict management. Without such capacities, farmers may be unprepared for uncertain events caused by political and economic unrests as well as climate change.

Any one off training event cannot provide solutions for all farm related problems, nor can it provide the broad range of skills needed to support improved productivity at the farm level. However, FFSs offer integrated learning opportunities for a period of one year in which participating farmers acquire problem solving capabilities that can encourage pro active behavior and positive attitude towards an often uncertain future.

## How does FFS help Development Agencies?

The following are some of the reasons for development agencies to incorporate FFS into extension services.

### 1. Structured implementation process.

FFS provides a structured extension platform, which makes implementation and M&E easier as listed below:

- **Regular meeting days.** Regular group meeting days make FFS easier to monitor. The management team knows when and where FFSs are carried out. This allows random checking by managers, whose visits are not announced in advance.

- **Fixed timetable and planned programme.** Every FFS session is conducted according to a fixed timetable and each activity planned during the previous group meeting and agreed among members. This simple standard session format simplifies planning and preparation for future sessions.
- **Fixed annual and event schedule.** The annual FFS programme must be fully synchronized with rainfall and other environmental patterns, with clear benchmarks and key events including exchange visits, field days and graduation.
- **Standardized FFS inputs and budget.** Inputs for FFS including learning materials, costs for events and allowances for facilitators can be standardised under a project. The budget for each FFS will vary depending on the length of the FFS implementation period, material to be provided, travel distance of facilitators, and reporting required from farmers.

## 2. Facilitating inter-sectoral collaboration.

FFS requires collaboration among various government ministries for the delivery of "special topics", which cover not only agriculture, livestock and agroforestry related issues, but also life skills such as prevention of HIV/AIDS, cooking, nutrition, and other requests according to demand from the FFS participants. Special topics, which deal with multi sectoral issues, are a crucial element to keep the group interested and active. This arrangement requires FFS facilitators to actively search for help from other government agencies or NGOs which, as a result, makes FFS a multi sectoral platform.

## 3. Empowering extension officers.

FFS empowers both farmers and extension officers. Through FFS implementation extension officers must adapt their normal role of lecturers to become facilitators. An equal communication platform requires them to change their attitude to listen more to the farmers. Clearly identified working targets and a structured approach ensures they are better prepared and more disciplined. Frequent communication socializes them to become local coordinators.

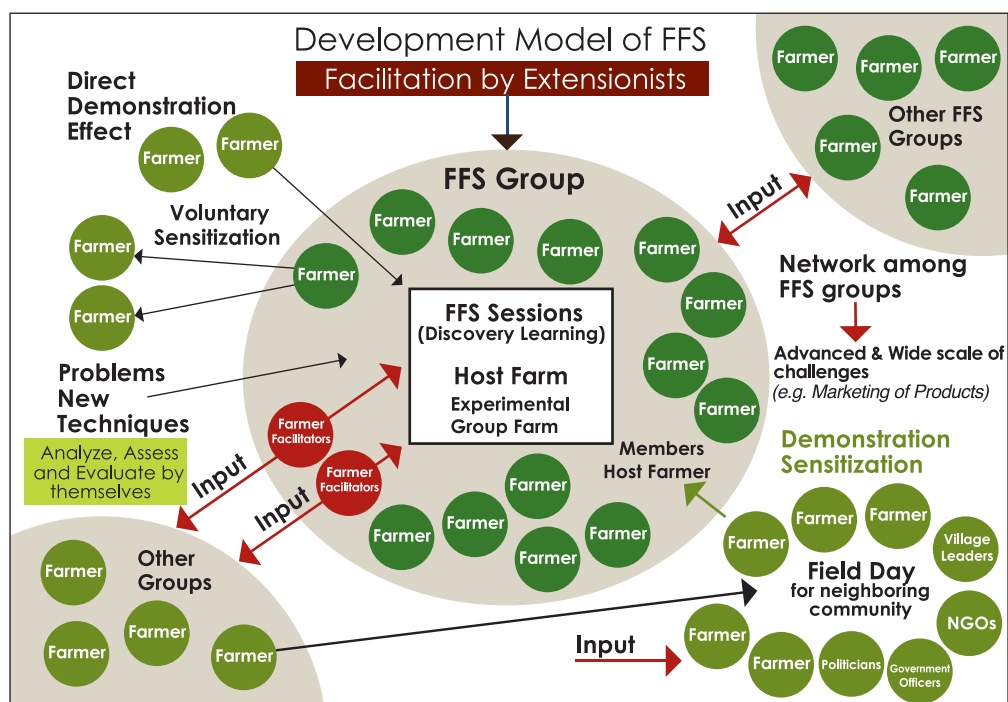
In addition, tangible field results and respect from farmers increases their self confidence and job satisfaction.

#### 4. Expanding results effectively.

An overview of the expansion strategy of the FFS approach is illustrated in Figure 1. FFS employs two types of facilitators; (i) extension facilitators, who are recruited by the government or projects and have received the required training as facilitators, and (ii) farmer facilitators (FFs), who are FFS graduates.

Expansion of FFS is usually constrained by the limited number of government and/or project paid extension workers who normally also have other duties to perform. However, the selection and training of suitable farmer candidates during the initial period of “extension led FFS” can provide additional locally available human resources for future expansion of FFS (for details see Part II).

Figure 1. FFS Expansion Strategy



## 1

## 5. Joining the global FFS network

By 2009, the FFS approach has been practiced in more than 92 countries (Arnoud Braun, personal communication). A large knowledge base on the approach is available in the form of reports, manuals, guides, videos, podcasts and case studies (largely available in the FFSnet database<sup>5</sup>). This allows new FFS projects to benefit from a wide range of project and country experience, and avoid previous pitfalls. However, the FFS approach remains to be learned in a training context with the presence of experienced (master) trainers – it cannot be (easily) learnt simply by reading resource materials.

### What are the Weaknesses of FFS?

There are several key planning and managerial issues in implementing FFS. The FFS planners must address the following points in preparing an FFS programme.

#### 1. FFS requires having a group of experienced FFS facilitators.

Experience shows that FFS must be implemented according to its key principles and can not be applied simply on the basis of knowledge of extension methods. FFS facilitators must have at least two weeks of intensive FFS facilitation training TOF delivered by experienced FFS master trainers, which must be followed up with continuous backstopping to maintain the quality of FFS during field application by the trained facilitators.

**What happens in an area where there are no master trainers?** The lack of master trainers is the major bottleneck in many FFS programmes, and undermines the quality of FFS. Contracting master trainers from another country or area may be expensive, but there are few options if FFS is to be correctly implemented. The JICA supported FFS project in Ethiopia arranged for four master trainers from Kenya to visit the project and conduct the TOF. In the Philippines, the Philippine Rice Research Institute (PhilRice) at

5. [www.infobridge.org/ffsnet/](http://www.infobridge.org/ffsnet/)

Nueva Ecija conducts a season long FFS training course. Every year it produces about 40 to 50 experts, who promote FFS in rice production. However, the trainees stay at the institution for the entire one crop (rice production) period and the cost of such training is high.

In order to cope with the shortage of master trainers in Kenya, FAO provides a master trainers course with experienced FFS facilitators. The cost of this programme is approximately USD 35,000 for 13 trainees over a period of 7 months. Each month these trainees leave their regular work and are trained for a period of one week including field exercises.<sup>6</sup>

## **2. Appropriate fund release mechanism and effective logistics.**

FFS is carried out according to the crop cycle, and must start according to the planting season. An FFS programme must be carefully planned to ensure that study material and inputs for the particular FFS activities can be delivered in a timely manner. An appropriate fund release mechanism is also essential to enable timely procurement and delivery of materials and inputs. Methods for procurement of materials in bulk may need to be supplemented by a cash account (and appropriate procurement processes) for each FFS for small scale expenditure of essential items. Timely payment of allowances to facilitators is important to ensure they remain motivated and are able to purchase fuel for their motorcycles.

Many unperformed FFS programmes are found under government programmes that suffer from slow bureaucratic procedures that delay procurement of learning material and payment of allowances to facilitators.

## **3. Quality Control.**

FFS requires effective backstopping by experienced FFS facilitators to maintain the quality of FFS. In Ethiopia, many FFS sites were inaccessible by car and in some cases facilitators were required to

<sup>6</sup>. For more detail information, contact at Investment Centre@fao.org



walk for more 10 hours to reach remote FFS locations. As a result, FFS backstopping became less frequent and the quality of the FFS process was affected.

#### **4. Cost.**

The cost per FFS varies according to the duration of the crop cycle, accessibility of FFS sites and the allowances paid to facilitators. Typically the cost ranges from USD 1,000 to 1,700 per FFS per year. (see details in Part II). This is equivalent to USD 40 to 70 per person for one FFS cycle assuming 25 members per FFS. In addition, experience in implementing FFS shows that a monthly meeting with facilitators, experience sharing workshops, and exposure of facilitators to new technologies are essential to maintain a dynamic relationship between the project management, facilitators and FFS members. Such activities are important to successful FFS outcomes. If budget is a constraint, it is preferable to reduce the scope of the programme (i.e. the number of target FFSs) than to compromise on FFS quality.

#### **5. Monitoring of FFS.**

Generally the monitoring of extension activities is difficult to conduct. However, the FFS platform allows project management to undertake random spot check monitoring because of the fixed date and place of FFS activities. Nevertheless, effective performance monitoring of all FFSs under a programme can be a challenge. Traditional methods which require facilitators to provide weekly or monthly reports on FFS performance, have proved to be difficult to implement effectively; facilitators do not provide timely reports and/or reports are lost in somewhere along the chain. Such methods do not effectively monitor the performance of the facilitators themselves and do not easily allow for timely project management intervention if required. The use of phone communications with FFS chairpersons has improved the detection of management issues, but it tends to be costly.

A promising innovation being tested on a number of FAO projects is the use mobile phones as a monitoring tool. The system is designed in such a way that FFS data are sent by mobile phone to a web based database which automatically processes and aggregates the summary data for presentation through the project's website (for details see Part II).



# Part II: FFS Planning and Management

## 2

## Implementation Structure

### Setting up a Management Structure

Project management of FFS should strive to promote open, transparent and democratic processes that strongly support the participation and capacity building of government staff and beneficiaries in the implementation process. Management of FFS should preferably be decentralized to the local level with an appropriate headquarters (HQ) project management structure providing administrative support. However, any FFS project must have a field coordinator assigned to the target area to provide backstopping and technical support needed to maintain the quality of FFS.

For the ISFP, a project management unit (PMU) was set up in KFS HQ to handle administrative matters including preparation of plans, allocation of budget, provision of technical support and capacity building. However, management responsibility for FFS implementation was assigned to DFOs of the three project districts.

The FAO LFFS in KFS Kericho district does not have a PMU at the HQ; instead it has a project coordinator at KFS HQ to provide administrative support and liaise with FAO, while it has a field coordinator (DFO) and an assistant field coordinator at district level to oversee the performance of LFFS and provide backstopping.

### Typical Structure for Implementing FFS



### Identification of Facilitators

FFS has a long history in many countries, and identification of experienced facilitators may not be an issue in such countries. However, even in the Philippines where there are many experienced facilitators available, identification of sufficient number of facilitators can be a major issue if a project must work with many FFSs over a short period of time. FFS programme planning must start by identifying facilitators, determining their availability to be assigned to each target community, and then assessing their ability to plan a capacity building programme.

### Setting up Logistics

Key issues in FFS logistics are: (i) transportation of facilitators; (ii) timely delivery of learning material to FFSs; and (iii) payment of facilitator allowances. As both the ISFP and FAO LFFS targeted remote areas, they provided a motorcycle to each government staff facilitator to reach the FFS sites which were usually non accessible by foot from their offices. If the project budget is limited, the procurement of

means of transport can be a major issue. To avoid such a major expenditure, the FFS programme can use Farmers Facilitators (FFs) from the target communities. However, they are not available in the first year. It is also important to create a group of experienced FFS facilitators who can provide technical and process backstopping. This issue is closely linked with the project expansion planning as described below, and must be addressed at the early programme planning stage.

As explained in the weaknesses of FFS, timely delivery of learning materials to each FFS is a challenge for many FFS programmes. In many countries, an overly bureaucratic system does not allow timely funds release to procure learning material, which severely undermines the ability of FFs to perform well. Careful planning of procurement is a must, especially where procurement delays are apparent. Effective decentralization of procurement to the local level is highly desirable for timely delivery of learning material.

Finally, support to FFS programmes has not yet been recognized as a part of the work responsibilities for government extension staff in many countries. An FFS programme is usually considered to be a project, and therefore extension staff expect to be paid a facilitation allowance for their participation. Once agreed, timely payment of allowances becomes an issue especially if the target area is widely dispersed and its facilitators are scattered in remote areas. This guide recommends that an FFS programme must have monthly facilitator meetings to plan for the coming month and share the experience among the facilitators. The monthly meetings can be used to make allowance payments and collect monthly reports.

# Programme Cost and Fund Disbursement

## FFS Implementation Cost

FFS programme costs vary from place to place and according to the enterprises to be practiced. A benchmark for planning is around USD 1,000 to 1,700 per FFS as shown in the table below:

No	Item	Indicative figure USD/FFS/Yr
1	Stationary	100
2	PCE inputs	300 – 500
3	Allowance + transportation for facilitators	300 – 500
4	Exchange visits	100 – 150
5	Field day	100 – 200
6	Graduation	100 – 250
<b>Total</b>		<b>1000 – 1700</b>

In addition to these direct costs, the following costs must be included to maintain the quality of FFS:

- Monthly meeting transportation cost;
- Allowance for lecturers of special topics (once per month per FFS);  
and
- Backstopping costs.

The cost of constructing a learning site is optional. FFS programmes are usually carried out during the rainy season and provision of roofing material may be required.

An intensive (two weeks) FFS TOF is required for inexperienced FFS facilitators as well as training for all facilitators (one to two weeks) on the technical aspects of the learning enterprises and PCE. A one week TOT FFS facilitation course must also be offered to FFs who will be engaged to work as facilitators.



## Direct Funding Mechanism vs. Delivery-Based Funding Mechanism

Funds and materials can be channelled to FFSs by: (i) **direct funding** whereby a project advance is paid into a bank account operated by the FFS; and (ii) **delivery-based funding** in which the project office procures all learning materials including stationeries and PCE inputs, and pays allowances to its facilitators.

Many FFS projects supported by FAO and other donors in Kenya used the direct funding mechanism. Around USD 600–800 was deposited into each FFS account as an accountable advance to meet the cost of eligible FFS expenditures. The merit of this direct funding mechanism is a considerable reduction in project management costs since each group is responsible to procure its own learning materials and pay allowances to their facilitators. This experience develops each group member's capacity to manage a bank account and funds; skills that can be used for income generation activities (IGAs) after graduation. The direct funding mechanism also contributes to cost consciousness among farmers and raises awareness about the cost of extension services.

Improved facilitator performance is a further benefit; they become directly accountable to the group rather than to project supervisors. Some FFS groups have refused to pay the field allowance when members were not satisfied with the facilitator's performance or requested the project to change the facilitator because of poor delivery. This system has many advantages for project management as well as empowerment of farmers.

Despite these merits, the direct funding mechanism is usually not permitted in governmental FFS programmes due to accounting policies. This was the case for the ISFP. The rationale was that direct funding may undermine the accounting integrity and result in unaccounted expenditure. For FAO projects, direct fund transfer to FFSs was carried out under a memorandum of understanding (MOU) between the project, the counterpart government agency and the FFSs, whereby each FFS acknowledges its responsibility and

accountability in its use of project funds. The FFS was also obliged to provide an accounting report supported by evidence of expenditure.

A clear advantage of a delivery based mechanism is that the project can control procurement and be accountable for the expenditure. Bulk procurement can also reduce overall costs. However, this system requires adequate administrative capacity in management, planning and logistics. Disadvantages of the delivery based mechanism include complex procurement and delays in delivery of learning material. The experience of ISFP as well as other FFS programmes that have used a delivery based mechanism demonstrates that procurement and delivery can create a major bottleneck to meeting FFS demands. As a result, some FFSs became idle due to lack of learning material.

This guide recommends the use of the direct funding mechanism, but incorporating some aspects of a delivery based funding mechanism. The FAO funded LFFS procured key stationary items, such as manila paper and pens that are essential during the early stage of the FFS. The LFFS also procured initial inputs required for the first PCE. This arrangement allowed each FFS time to register with the government and open a bank account. The balance of funds needed for FFS activities was then deposited into the bank account. The project supported only 16 FFSs in the first year so this approach was feasible. However, if there are more than 50 FFSs distributed in different areas, delivery of FFS materials would be a major task as was experienced in the SSIS FFSs in the Philippines where wells/engines/pump sets as well as inputs including fertilizer and certified seeds were provided to 145 FFSs in five provinces.

# Curriculum Development

## Technical Package: Enterprise Catalogue

This guide does not aim to develop a procedure and facilitation skills for a site specific enterprise solution as in the process of participatory comparative experiment (PCE). An open end approach with PCE is in fact ideal in FFS, which can address the issues that farmers are currently facing. However, it has its own disadvantages and limitations such as:

- During the initial phase of an FFS programme facilitators may not have a sufficient level of participatory facilitation skills for an open end participatory approach;
- Every organization has its operational mandate which may limit the activities that can be supported and the knowledge of its facilitators may also be limited; and
- Many inexperienced facilitators would not be able to design PCE or identify design parameters for unfamiliar subjects.

Instead, this guide is designed to help inexperienced facilitators and groups to select enterprises to be practiced, and advise how to establish and monitor/evaluate the performance of the enterprises selected by the FFS members. Therefore, any project that adopts this manual must prepare in advance of project implementation a set of clear technical enterprise packages described in an Enterprise Catalogue, to offer to FFSs (see an example in Annex 1) and a Study Guide (Annex 2) that includes basic enterprise designs and suggested parameters to be measured in PCE. Preparation of the Enterprise Catalogue and Study Guide requires a process of community consultation as well as technical and market knowledge.

The main advantage of preparing and using such a catalogue is to standardize the fieldwork and allow the project to deliver a consistent quality of facilitation services. However, such a prescriptive enterprise catalogue limits the ability of facilitators to respond to improvised requests and incorporate new ideas from farmers.

Thus, enterprise catalogues must be developed with caution, to reflect real issues that FFS farmers face, allowing flexibility, and the proposed enterprises should be technically appropriate and economically feasible for the target farmers.

### Period of the FFS Cycle

The climate, local environment and study focus as well as local people's preferences should be carefully considered in deciding how many months are required to help farmers to achieve the desired project result. Although the length of the study cycle may vary, this guide recommends a one year FFS programme to foster farmers' analytical skills as well as members' empowerment processes.

Trees planted in FFS host farms after one year



### Introducing Tree Nursery Enterprise

A distinctive feature of this guide is in the tree nursery enterprise which is a requirement for all FFSs during the dry season or when AESA becomes routine. This was the key component for promoting crop diversification and a means for farmers to make effective use of the season with less labour demand. However, the experience of both the ISFP and the JICA funded FFS in Ethiopia showed that tree nursery activities were not popular among farmers as the first field activity.

Usually, farmers much prefer agriculture or livestock production systems that can generate immediate cash income. Therefore, any FFS that includes tree nursery activities should begin with agricultural and/or livelihood enterprises and introduce the nursery enterprise only after the members have become accustomed to the FFS concept. Tree nursery enterprises can enhance PCE and AESA skills since seed treatment, observation on germination and initial growth can be repeated within a short period of time. Grafting of fruit trees, as an example of IGA, can also provide a good exercise for PCE and AESA using a comparison procedure.

# Capacity Development

## Training of Facilitators

Training of facilitators (TOF) is crucial in all FFS programmes. FFS master trainers, who have a vast experience in FFS, usually conduct TOFs. FFS extension staff who are to become facilitators must undergo a minimum of a two week TOF course (a typical course agenda is provided in Annex 4). In addition, they must complete at least a one week technical training on Enterprise Catalogue related technologies, including agriculture, livelihood development and forestry issues. Only after completing the two courses, should trainees be allowed to conduct FFS.



## TOF for Candidate Farmer Facilitators (FFs)

This guide promotes farmer facilitators to support expansion of FFSs and improve project sustainability. Candidate FFs are selected from their own groups and provided a week long training to improve their facilitation skills. The selection of candidate FFs is carried out under the guidance of the facilitator in consultation with the members after completing several months in FFS. The candidates are selected according to criteria approved by group members (see Part III Step 10 for more details).



The following basic criteria are applied in selecting farmer facilitators:

- Level of attendance in FFS sessions;
- Level of adoption of practices learnt at the host farm (i.e. PCEs in their own farms);
- Willingness to provide their own time to run FFS;
- Communication skills;
- Physical fitness;
- Willing to stay in the community; and
- Socially accepted by their community.

After the one week TOF course, these FF candidates were given the opportunity to facilitate FFS sessions with their own groups under supervision of their extension facilitator (a typical FF TOF course agenda is provided in Annex 5). While conducting FFS, they were backstopped and evaluated by the extension facilitator. Once the FFs passed evaluation (see Part III Step 10) by the facilitators, they were tasked to form new FFSs in their neighbourhoods.

# Expansion Planning

## Extension-led and Farmer-led FFS

FFSs supported by an extension facilitator are referred to as “**Extension-led FFS**”, and those run by FFs as “**Farmer-led FFS**”. A FFS programme must start with Extension led FFS. Each extension worker is typically expected to manage two FFS sessions per week during the first year. During the period of the Extension led FFSs, each group identifies two farmers who can be selected as FFs; though as many as four or six may be identified.

After graduation from the Extension led FFSs and basic training, FFs are usually assigned one or two new FFS groups (usually referred to as child FFS in the neighbourhood of the mother FFS). Such FFs are also given an allowance per session, but no transportation allowance is given since they are conducting their FFS sessions near their own localities.

The chart below demonstrates an example of how the number of FFS can be expanded within a five year period with Extension led FFSs and Farmer led FFSs. The following assumptions are made for this example FFS programme:

- There are 10 project extension led facilitators;
- Each extension led facilitator has two FFS per week for the first year but one FFS from the second year in order to provide backstopping to his/her Farmer led FFSs;
- Each Extension led FFS would produce one pair of FFs (two FFs every year; and
- One pair of FFs would conduct two FFSs per year

This guide recommends two FFs would form a team to facilitate one FFS in order to maintain quality FFS. Farmer led FFS would not produce any FF.

**TABLE 1** Indicative Expansion Schedule

Year	Type of FFS	No of Facilitators	No of new FF	2010	2011	2012	2013	2014	Total FFS
1	Extension-led	10		20					20
2	Extension-led	5			5				5
	Farmer-led	20	20		20				20
3	Extension-led	5				5			5
	Farmer-led	30	10			30			30
4	Extension-led	5					5		5
	Farmer-led	40	10				40		40
5	Extension-led	5						5	5
	Farmer-led	50	10					50	50
Total				20	25	35	45	55	180

With help from FFs, the project would be able to support 180 FFSs over five years. Relying solely on its extension facilitators, the project could cover only 100 FFS (maximum) at a rate of two FFSs per year. This expansion strategy also promotes sustainability of the project because it will produce FFs who can become focal persons for agricultural extension in the target communities. In addition, it is difficult for government staff to each support two FFSs every year because of their non FFS workload.

### Field Day and Graduation

The “Field Day” (see Part III, Step 12) and the “Graduation” (Step 14) are important aspects of an FFS expansion strategy. These two events entail inviting non FFS neighbours to view the results of FFSs. Frequently the neighbouring farmers who attend these events request their own FFS and/or copy what they see in the field.

# Monitoring and Evaluation

## Regular Backstopping to Monitor FFS Performance

The backstopping provision of technical and management support to FFS facilitators by experienced staff, is a major part of progress monitoring of FFS with an aim to increase FFS quality. Monthly meetings among facilitators are also useful to share FFS facilitation and technical skills.

Based on the ISFP and FAO LFFS experience, the most challenging aspects that backstoppers must pay attention to are:

- Concept and methodology for PCE;
- AESA session;
- Time allocation; and
- Mode of facilitation this requires behavioural changes for facilitators who are used to operating as instructors.



A regional FFS master trainer (left) and a DFO (right) backstopping FFS groups in ISFP

Backstoppers must recognize that backstopping is provided as assistance and not as evaluation of facilitators. Backstoppers should not conduct FFS sessions and should not disrupt FFS sessions frequently; rather, they should observe and provide members and facilitators with advice at an appropriate time. Such advice to facilitators should not be given in front of FFS members; it is important

to maintain farmer trust in their facilitator. Backstoppers must participate in the whole FFS session and check facilitation skills using a “Session Check List 1 and 2” (see Annex 3 1 and 3 2). The check lists will then be used for review at a separate meeting with the facilitator after the session. The first sheet of the check list is more qualitative and the second sheet more quantitative. It is recommended that the first sheet be used during the initial period of the project to provide more detailed advice to the facilitator, and the second one be used to identify strengths and weaknesses of the FFS. Either sheet must be used with care when presented to the facilitators and never shown to the FFS members.



Backstopping teams giving recommendations to facilitators after FFS sessions

## Group Weekly Report/Record

After each FFS session, the members of each FFS group should prepare a “Weekly FFS Report” to describe the learning sessions of the FFS. This is not a report for facilitators to complete. The report is used by the FFS group members to monitor and evaluate the performance of the FFS and facilitators. In addition, it aims to:

- monitor whether the facilitators were present during FFS sessions;
- capture how the session was conducted – problems, impressions of members;
- check relevance of sessions; and
- record the activities.

The weekly reports should be made in duplicate using carbon paper; the original is sent to the field coordinator, and the copy remains with the FFS. The report is sent to HQ and the facilitator's allowance paid on the basis of the report. However, paper based reports have limitations; they are often time consuming to prepare, must be physically transported from FFS to HQ, and must be manually processed. If not submitted and processed in a timely manner their information is of limited value for monitoring and management.



Mobile phones are beginning to replace paper based reporting methods. Mobile phone coverage is becoming widely available in less developed countries and the technology provides a new dimension for project management, especially in M&E. FAO projects in Kenya (LFFS) and the Philippines (SSIS FFS) have developed a Mobile Phone Based Monitoring System, which enables a continuous recording of performance of FFSs and the FFS facilitators. The system is designed in such a way that data are sent by mobile phones to a web based database which automatically processes and aggregates data for presentation through the project's website.<sup>7</sup> This system allows the field coordinator and project staff members at the HQ, or even in the donor HQ offices, to monitor the performance of the facilitators and FFSs through the internet. Monitoring templates are structured in a simple format with questions mainly requiring either a numerical or Yes/No answer (see FFS Mobile Phone Question Sheet, Annex 3 3). A maximum of 20 questions is advisable. Major advantages of the Mobile Phone Based Monitoring System are: its ease of use (farmers with primary school education can operate the mobile phone with minimal training), timely availability of outputs (due to immediate transmission and automated processing),

7. For details, visit:  
<http://mpbms.atsafrica.com/index.php#>

User name: visitor,  
 Password: visitor



widespread accessibility (due to web based application), and ability to link with electronic funds transfer (for payment of allowances, transfer of funds for purchase of inputs, payment for sales, repayment of credit, etc.).



However, paper based reports must still be used to provide a permanent record at the FFS site. One disadvantage of the Mobile Phone Based Monitoring System is its limited ability to capture qualitative information.

### Mobile Phone Monitoring System

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Both FAO projects provided a mobile phone to each FFS and an FFS member (usually M&E office of the FFS) was tasked to report weekly FFS performance by completing the report using the mobile phone as shown above. The designated operators were given a short training and the results show that farmers have no problem to use the mobile phone.

## Graphs Generated with the Data Provided by Mobile Phones



The screenshot displays the 'Aggregated Report' interface. At the top, there are logos for Kenya Forest Service and FAO, along with the project title 'Sustainable Livelihood Development Project in the Mau Forest Complex'. Below the logos are navigation buttons for 'Home', 'Reports', and 'Logout'. A welcome message 'Welcome, Iaka (Taka)' is visible. The main section is titled 'Aggregated Report' and features a table with columns for 'No.', 'LFFS Name', 'Name of facilitator', 'Total Members', 'Total Dropouts', 'Total No of FFS members attended on time', 'Total No of FFS members came late', 'Total No of FFS members left earlier', 'Total No of FFS members absent', and 'No. of Times Facilitator came to session'. The table contains 16 rows of data, one for each LFFS, and a final row for 'Total'. The table also includes a filter dropdown set to '35' and a 'Filter' button.

No.	LFFS Name	Name of facilitator	Total Members	Total Dropouts	Total No of FFS members attended on time	Total No of FFS members came late	Total No of FFS members left earlier	Total No of FFS members absent	No. of Times Facilitator came to session
1	Lamoll	Edward Kimayo	34	5	71.43	17.14	2.96	11.43	5
2	Kisaufo	Edward Kimayo	30	2	66.67	20.00	6.67	13.33	1
3	Nyakinyua	Everlyne C. Rotich	27	3	70.37	11.11	3.70	16.82	5
4	Kadiwa	Everlyne C. Rotich	29	3	79.28	13.04	4.38	8.70	5
5	Ojak	Lawrence Oryango	33	0	86.29	8.88	0.00	8.82	2
6	Sapit	Lawrence Oryango	32	4	66.67	14.81	3.70	16.82	2
7	Kurid	Duncan Mwangi	30	0	0.00	0.00	0.00	0.00	0
8	Dhonest	Duncan Mwangi	30	0	87.10	0.00	3.23	12.90	6
9	Kititan	John Mugenda	30	1	81.82	9.09	3.03	9.09	5
10	Mwangaza	John Mugenda	29	3	86.29	3.87	3.87	7.14	5
11	Dhancheni	John Twai Somoi	27	3	77.42	0.00	0.00	22.58	5
12	Teget Chepkilil bel	John Twai Somoi	30	1	70.97	0.00	3.23	29.03	5
13	Tandere Development	Charles Makau	30	3	87.88	9.09	3.03	3.03	5
14	Dhepluyal multipurpose	Charles Makau	31	4	100.00	0.00	0.00	0.00	5
15	Kahuru	Mary W. Nyamu	27	3	82.07	3.45	13.79	34.48	5
16	Nitu	Makokha Daniel	27	1	48.15	40.74	25.93	11.11	2
	Total		478	26	76.77	9.91	4.87	13.72	3.98

Facilitator and Members performance key: 5: Excellent, 4: Good, 3: Fair, 2: Poor and 1: Bad

## Facilitator's Monthly Report

Each facilitator must prepare and submit a written monthly report summarizing his/her FFS sessions (see Annex 3 4). This report is used to monitor FFS performances and to understand whether the facilitators are on the right track, if they have requested help from the coordinator, and how they are handling issues that arise during FFS.

## Other Key M&E Templates

There are other reporting templates that may be useful for any FFS programme. The following were used in the ISFP.

### **Problem Report by Facilitators.**

This report can be used when facilitators have problems that require intervention from the coordinator (see Annex 3 5).

### **Empowerment Process Report.**

Qualitative assessment of FFS is mainly carried out using the Empowerment Process Documentation Report (see Annex 3 6). This template was designed to observe changes and/or signs of empowerment of each individual and group during the project implementation. Those changes are documented for management staff to assess the level of empowerment within the FFS.



# Part III: Field Manual for FFS Facilitators

## 3

### Implementation Process

The two diagrams below illustrate the implementation flow and an indicative calendar for FFS for farm forestry and livelihood development. The FFS cycle with this guide is divided into 14 steps and each step has a sequence of actions with clearly defined responsibilities and outputs. More details on each step are provided in the following sections.

The starting month of the FFS is determined by the planting season. The critical steps during the early stage of FFS are Step 3: Enterprise Selection and Step 6: Establishment of the Host Farm. Enterprise Selection in Step 3 must be conducted in a democratic manner after the Facilitators introduce the “Profile” tool of RuralInvest to analyze the feasibility of selected enterprises. All logistical preparations have to be prepared for Step 6 to ensure timely planting.

Once the host farm is established, AESA sessions start in Step 7. Nursery establishment should start as soon as possible after members are accustomed to the AESA routine because nurseries offer many opportunities for PCE.

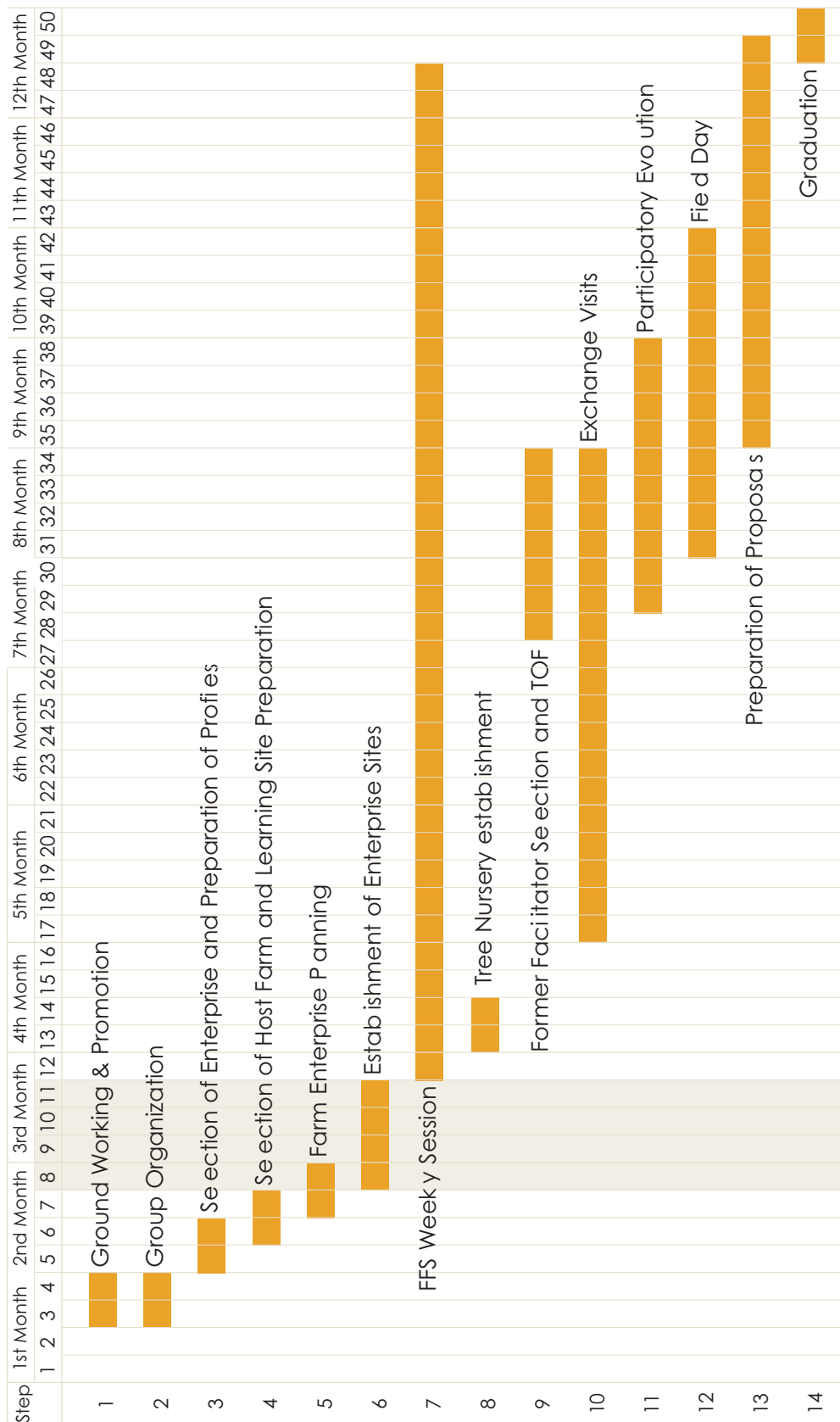
Before graduation, FFSs should be given the opportunity to carry out exchange visits and/or field days. In preparation for field days, the FFS should complete a participatory evaluation to finalize the presentation to visitors. Farmer facilitator selection and training should be conducted about the 7th or 8th month after inception. Once trained, the FFs should facilitate their own group to accustom them to run FFSs. These events require several weeks of preparation, so careful time coordination is required.

## 3

## Implementation Steps

STEP	MAIN ACTIVITY	MAIN ACTOR	OUTPUTS
1	Ground Working	Field Coordinator Facilitators	FFS Groups Selected
2	Group Organization	Field Coordinator Facilitators	Agreement Register sheets
3	Selection of Enterprise and Preparation Profiles	Facilitators Members	Enterprise selected Profile with Rural Invest prepared
4	Selection of Host Farm and Learning Site Preparation	Facilitators Members	Host farmer selected Preparation on learning site
5	Farm Enterprise Planning	Facilitators Members	Field comparative experiment design and proposals prepared
6	Establishment of Enterprise Sites	Facilitators Members	Enterprise site prepared
7	LFFS Weekly Session	Facilitators Members	Weekly reports Monthly reports
8	Tree Nursery Establishment	Facilitators Members	Nursery PCE design prepared Nursery establishment
9	Farmer Facilitator Selection	Facilitators Members	Farmer Facilitators
10	Exchange Visits	Facilitators Members	Exchange visit reports
11	Participatory Evaluation	Facilitators Members	Participatory Evaluation Reports
12	Field day	Facilitators Members	Field Day reports
13	Preparation of Project Proposals with Rural Invest Module 3	Facilitators Members	Project Proposals
14	Graduation	Facilitators Members	Farmer Experts

## Steps and Indicative Activity Calendar



Note: Weeks 8 to 11 are the indicative planting season





# Step 1 Ground Work and FFS Promotion

## 3

### STEP 1

<b>Purpose</b>	<ul style="list-style-type: none"> <li>▪ Identify farmers who are willing to participate in FFS and share knowledge with their neighbours.</li> <li>▪ Identify constraints and opportunities for FFS implementation.</li> <li>▪ Share FFS concepts and implementation methods with potential groups and/or farmers.</li> </ul>
<b>Main Outputs</b>	<ol style="list-style-type: none"> <li>1. FFS Groups selected</li> <li>2. Constraints and Opportunities identified</li> </ol>
<b>Time Estimate</b>	One to four visits within two weeks
<b>Important Points</b>	<ol style="list-style-type: none"> <li><b>1. Briefing.</b> <ul style="list-style-type: none"> <li>▪ FFS programme should ensure that provincial/district administrations are well informed about the programme and seek their support for FFS activities.</li> </ul> </li> <li><b>2. Member Selection.</b> <ul style="list-style-type: none"> <li>▪ Member selection should be transparent and based on the agreed selection criteria.</li> <li>▪ Never make an arbitrary choice. This would likely cause social and political problems at a later stage, and affects the ability of the FFS to continue.</li> <li>▪ Field Coordinator must carefully manage the situation when local government officials and politicians want to become directly involved in the selection processes. It is important that the selection process is based on the objectives of the programme and FFS.</li> <li>▪ Use a ballot system to select members if there are more than 30 qualified applicants.</li> </ul> </li> <li><b>3. Location of FFS.</b> <ul style="list-style-type: none"> <li>▪ Physical access to the FFS host farm should be thoroughly analyzed.</li> </ul> </li> </ol>

## 3

## STEP 1

continued

- Select easy access communities during the early years of the programme.
- Consider the merits and demerits of group distribution (some examples are shown below).

MERITS	DISADVANTAGES
<p><b>A</b></p> <ul style="list-style-type: none"> <li>■ Impacts are visible.</li> <li>■ Easy to manage and monitor.</li> <li>■ Easy to form FFS network after graduation.</li> </ul>	<ul style="list-style-type: none"> <li>■ Remote communities tend to be left out.</li> <li>■ The programme would receive complaints from non FFS communities.</li> <li>■ The programme may not have enough facilitators to support those communities with limited access.</li> </ul>
<p><b>B</b></p> <ul style="list-style-type: none"> <li>■ Benefits will be equally distributed among remote communities.</li> <li>■ Extension workers are usually assigned to cover a wider area.</li> </ul>	<ul style="list-style-type: none"> <li>■ High transportation costs.</li> <li>■ High backstopping costs.</li> <li>■ Difficult to monitor.</li> <li>■ Difficult to make impacts visible.</li> </ul>

**A:** Concentration of groups within a few communities.

**B:** Dispersed selection of groups among different communities.

### Sequence of Activities

#### 1. Briefing for Provincial/District Administration, and other relevant agencies by Field Coordinators.

- Introduce the FFS programme to the provincial/district administration, other key stakeholders including NGOs and private sector companies.
- Agree to conduct special topics that would require support from different institutions.

#### 2. Meeting with Community Leaders.

- Meet with community leaders to introduce the programme and call a meeting to select FFS members.

**3. Community Meeting and FFS Member Selection.**

- Introduce FFS methodology, benefits and responsibilities of FFS members.
- Conduct a Mini-FFS and Q&A session (see below).
- Select FFS members according to the selection criteria.

**4. Preparation of Group Location maps.**

- Prepare sketch maps in relation to the nearest market centre (see Annex 3-7).

**5. Registration of FFS as a legal entity.**

- Register each FFS at the appropriate government office to make it a legal entity. Registration is usually needed before opening a group bank account.

**Priority Selection  
Criteria**

Every FFS programme should develop selection criteria according to the policy of the programme. At least 30 to 40 percent of FFS members should be women. People who have participated in similar activities and/or received support from similar programmes should be excluded. The following are example criteria used in the FAO-LFFSs: Members should be

- Willing to participate weekly FFS sessions for a period of one year.
- Willing to work in a group and share knowledge with the neighbours.
- Women-headed households.
- Families belonging to vulnerable groups (low income, handicapped, ethnic minority etc.).

**Lessons Learned****1. Meeting with Community Leaders.**

- It is recommended to provide a leaflet (see below, an example used in FAO-LFFS) that describes the FFS programme to the community leaders when arranging a community meeting to select FFS members.

**2. During Community Meetings and Selection.**

- Selection should not be conducted by a single facilitator.



## 3

## STEP 1

continued

The field coordinator or other facilitators should support the community meetings and selection process.

- Often only a few community members answer the questions raised by the FFS programme. It is important to involve the whole group by using facilitation skills such as “Talk Ball (see Step 2)”.
- Facilitators need to use the Q&A session effectively using the “Frequently Asked Questions” guide attached.
- When national level staff from HQ are present at the selection, their interventions in the selection process should be minimal and avoid undermining the authority of the facilitator. After all, it is the facilitators’ responsibility to organize the FFSs.
- The judgement of facilitators on the selection process should be respected, as long as the selection criteria are applied.
- After the selection, each member should be provided with the FFS leaflet.
- It may not be possible to complete selection of all members in one day. Do not rush the selection. It is important that the community understands the requirements of the FFS programme and selection criteria.

### 3. Facilitators are New in the Area.

- If a facilitator is new to his/her assigned geographic area, local extension officers from other institutions should be asked to accompany the facilitator to initial meetings. Community members may be suspicious of unknown facilitators who visiting their community without proper introduction.

**Graduations:**

Members who have regularly and continuously attended will be qualified and awarded the certificate during the graduation ceremony.



**Sustainable Livelihood Development Fund**

The SLDF aims to support those who graduated from LFFS to scale up successful livelihood activities through the use of revolving loans to small groups. Once the group repays the loan, the funds can then be used to support others.

**Beneficiary Selection Criteria**

Applicants who want to join the project must be CFA members, be willing to work in a group and attend LFFS sessions once a week for a period of around 8 months. Only LFFS graduates will be eligible to apply for the SLDF. Each LFFS will have approximately 25 members and at least 40 percent of LFFS members overall must be women. The key priority criteria are as follows:

- Residential CFA officials within the forest border communities;
- Women headed households;
- Families with handicapped members;
- Family living within 3 km of the protected forest areas;
- Families with more than 5 children;
- Families among the vulnerable of CFA members;
- Families living in remote upland areas, with relatively limited external access;
- CFA members who are willing to start saving for future investment; and
- CFA members who have not received support from other donors/NGOs.

**Sustainable Livelihood Development Project in the Mau Complex**

**Farmer Field Schools**



**Sustainable Livelihood Development Project in the Mau Complex**



**Project Goal**

This project aims to enable community members living adjacent to forests to develop sustainable, environmentally positive alternatives to destructive forest exploitation through

- Testing and demonstrating feasible approaches to livelihood improvement for forest-adjacent communities;
- Creating a revolving fund to help groups adopt promising sustainable livelihoods; and
- Contributing to renewed community capacity building through re-engaging in CFAs and developing CFA capacities.

This project goal will be achieved through providing opportunities to develop livelihood development skills in Livelihood Farmer Field School (LFFS) and access to the Sustainable Livelihood Development Fund (SLDF).

**Target Beneficiary and Project Area**

The project intends to bring benefits to both male and women CFA members who participate in conservation and management within the following eight forest stations of Mau Forest Complex:

Target: Londiani; Makutano; Maragat; Tendano; Kericho; Keresoi; and Masaita.

**Livelihood Farmer Field Schools (LFFS)**



Farmer Field Schools (FFS) are an experience-based, innovative, participatory and interactive way of learning, and have the following general objectives:

- To build the farmer's capacity to analyze their farming systems and to identify their main constraints,
- To test possible solutions suitable for their farming system by using simple comparative experiments which build on existing knowledge,
- To enable farmers to adapt existing technologies, or to adopt new technologies so that they become "experts" who are more capable and responsive to changing conditions.

**Important Aspects of Farmer Field Schools**



**Weekly Sessions:**

Learning subjects are selected and decided by the participants. Both enterprise related (crops, forestry, livestock, horticulture, etc.) and non-related (health, home economics, leadership etc.) learning sessions are organized by facilitator and conducted during FFS every week.



## 3

## Promotion: Mini – FFS

## STEP 1

In communities where FFS is new, it is vital that the first contact makes a clear impression about FFS and shows the community members what they can expect in FFS sessions by giving them some FFS experience.

Materials: A4 Papers, Pens, one or more tick specimens (insects).

Time: Around 45 minutes

### Steps

1. Ask a few volunteers to draw a tick or any other common insect/pest



2. Collect the drawings & displays them to all.



3. Ask how many legs the ticks (or other insect) in the drawings have and the participants look, count and share what they see.





4. If the number of legs differs from drawing to drawing, the facilitator mentions that people have different ideas on the number of legs of the tick and asks “Which is correct?”
5. After some discussion, facilitator brings out a tick and asks them to look and count how many legs the tick has. (Be careful not make fun of or humiliate those who provided the wrong information.)
6. Confirm the number of legs.

**Key Messages for the farmers:**

- Knowledge and technologies are not always something brought by outsiders such as extension workers. Farmers can develop their own capacity. FFS helps farmers to identify what they know, and what they do not know, and to understand what they do know may not always be correct. Through observation and discussion, we are able to know our misconceptions; our knowledge on something we previously thought that we knew very well is not always correct. FFS provides an opportunity for participating farmers to confirm what is right to them through collective observation and discussion. So say to the farmers “You can develop your own solutions with FFS” and “Let’s observe the fields together with your farmer colleagues without prejudice”.

## 3

# Frequently asked questions

## General Questions about FFS

### Q1. What is FFS?

**A:** FFS is often described as a school without walls for improving farmers' decision-making capacity and stimulating local innovations for sustainable agriculture or forestry. It is a participatory approach, which gives farmers an opportunity to make a choice in methods of production through discovery-based learning tools.

### Q2. What will we receive from FFS?

**A:** Little in terms of materials and money. However, we will provide you with opportunities for you to gain important knowledge that will eventually lead to improvement of your livelihood.

### Q3. How do you improve our livelihood?

**A:** FFS would not directly improve your livelihood. It is like a school. After graduating from FFS, we expect that you will be able to improve your livelihood by yourself by using knowledge you gained and/or learned during FFS.

## Input material

### Q4. Why does one FFS allocate only a small amount of learning inputs per group?

**A:** FFS provides a method of learning and developing capacity; it is not a project to provide material to groups or individuals. FFS encourages you so that each individual learns from the field and replicates the learning experience on their own farms. It is important to use small quantities of material inputs so that many farmers can afford to do the same using their own initiative.

**Q5. Will FFS directly provide benefit to individuals?**

---

**A:** FFS is a school. Each individual is benefiting from building knowledge in the school. No, FFS will not provide direct material inputs to individuals. It will not provide, for example, seeds and seedlings to each individual. However, it is up to the members to decide how to use the produce from agricultural crops and seedlings grown at the group learning sites.

**Q6. What happens to the balance of learning inputs (funds) if any after FFS?**

---

**A:** Groups are advised to commit all their FFS group fund before graduation. If groups still have some money left, they could start another field comparative experiment.

**Q7. Can FFS assist in borehole sinking and bridge construction or assist the resource poor.**

---

**A:** We understand the situation of the farmers. But at the same time, we have our own limits and cannot provide all that the farmers ask for. It is important for us to extend out our efforts to as many farmers as possible with our limited funds in promoting sustainable land use.

**Income Generation Combined with RurallInvest and Investment Fund****- If an FFS project has a scope for scaling-up activities-**

Based on the experience of FAO-LFFS, farmers were very interested to obtain information of the loan and its conditions. It is usually difficult for an FFS programme to be fully informed on all loan conditions and terms at the inception of the project. Explain clearly what is known and not known at the time of the meeting. Some of questions raised during the FAO-LFFS promotion are provided in the following.

## 3

## STEP 1

**Q8. Can the FFS be given additional money?**

---

**A:** Yes. It is anticipated that the participating farmers would continue what they learned at the FFS in their own farms. There are many ways that small investments could improve activities on your farmlands. It may be possible for a small investment fund to assist you to scale-up the enterprises you learned.

**Q9. Can everybody apply for investment loan?**

---

**A:** Only FFS graduates are eligible for the loan.

**Q10. Can an individual borrow money?**

---

**A:** No. The loan will be given either to FFS or clusters (small groups of 5 to 10 members) under the FFS.

**Q11. What would be the procedure for getting the loan?**

---

**A:** All FFS or clusters will be required to prepare a proposal with assistance from facilitators and RuralInvest. The proposal will be submitted to the programme where we analyze the feasibility.

3

STEP 1







# Step 2 Group Organization

## 3

### STEP 2

<b>Purpose</b>	<ul style="list-style-type: none"> <li>■ Level expectations with a clear understanding of what the FFS programme can and cannot provide.</li> <li>■ Establish the basic agreement with the group to start FFS activities.</li> <li>■ Register group members.</li> <li>■ Establish group norms.</li> <li>■ Decide the stationery to be purchased and delivered by the programme.</li> <li>■ Conduct a baseline survey.</li> </ul>
<b>Main Outputs</b>	<ol style="list-style-type: none"> <li>1. Group agreements.</li> <li>2. Stationery delivery notes.</li> <li>3. Member registration sheets.</li> <li>4. Group bank account.</li> </ol>
<b>Time Estimate</b>	Two Weeks
<b>Important Points</b>	<ol style="list-style-type: none"> <li><b>1. Levelling farmers' expectations (see page 81).</b> <ul style="list-style-type: none"> <li>■ Avoid raising false expectations of FFS among group members.</li> <li>■ Farmers must understand that FFS's low inputs for activities are important for them when it comes to replication at their own plots. People may hesitate to replicate technologies from FFS after graduation if the learning materials / inputs are too expensive. Even if a programme has investment funds to support FFS graduates, it is important to stress the wise use of locally available material.</li> </ul> </li> <li><b>2. Confirmation of acceptance.</b> <ul style="list-style-type: none"> <li>■ Facilitators should not convince group members to take an immediate decision on starting FFS. The group</li> </ul> </li> </ol>



## 3

## STEP 2

## continued

members need to have a clear overview of what FFS can offer before deciding to participate.

- Signing of the agreement should be carried out only after giving one week for the members to understand its contents. The facilitator should not hurry the signing process.

**3. Weekly reports.**

- If a mobile phone monitoring system is available, explain the system and elect one Monitoring Officer who is capable to use a mobile phone.
- If such technology is not available, the use of the weekly reporting template has to be explained to the members.
- The weekly report should be completed by members, not by the facilitator, at the end of every FFS session.

**4. Formation of sub-groups.**

- Make sure that each sub-group includes a literate person.

**5. Stationery.**

- In ISFP, all stationary was procured and delivered by the project. The FAO-LFFS uses a combination of project procurement and FFS procurement. It is recommended that FFS members should provide whatever materials are available in their locality such as wall clock or cloth tape measure.
- Depending on the programme policy of fund disbursement and material delivery, the programme and FFS members must agree what is to be purchased and delivered by the programme.

**6. Baseline survey.**

- All members must be surveyed to allow the impact of the FFS programme to be measured.
- There are many methodologies available for baseline survey and impact assessment. Thus, an appropriate method needs to be selected.

**Sequence of Activities****1. FFS orientation.**

- Provide clear guidance on FFS activities.
- An example of a timetable for orientation is provided below.

**2. Confirmation to become FFS members.**

- Confirm selected members wish to participate in the FFS as a group.

**3. Selection of FFS leaders.**

- Select and appoint the following group officials:
  - Chairperson;
  - Vice chairperson;
  - Secretary;
  - Treasurer;
  - Time keeper; and
  - Monitoring officer.

**4. Formation of sub-groups (see page 82).**

- Divide members into four or five groups.



- Prepare agreed group objectives (slogans) and select the leader of each sub-group.

## 3

## STEP 2

continued

**5. Assigning the host team (see page 84).**

- Explain the role of the host team.
- Select one sub-group and assign the role of host team.

**6. Deciding the FFS meeting day.**

- Decide the FFS meeting day.

**7. Participatory Introduction.**

- Conduct pair-wise interviews (see page 86).

**8. Group agreement (see page 87).**

- Undertake a Q&A session on the agreement.
- Agree on obligations/responsibilities of both the project and the group.
- Group officials sign the agreement.

**9. Registration of members (see page 88).**

- Before starting each regular FFS session, record which members are present using the “roll call”.

**10. Stationery.**

- Agree on what is to be provided by either the project or the FFS, using “A Standard List of Stationery and Procurement Responsibility” (see page 91).
- Deliver basic stationery necessary to conduct FFS sessions for the initial steps.
- Upon delivering the agreed stationery items, get

“Stationary Delivery Note” signed by the Chairperson (see page 91).

### 11. Group norm agreement.

- All members must agree on the group's rules including learning attitudes, participation etc.
- Examples of Group Norms:
  - Do not bring politics to FFS.
  - No smoking in the class.
  - Do not come drunk to the session venue.
  - Respect other peoples opinions.
  - Conflicts to be solved democratically.
  - Every participant and facilitator to keep to the timetable.
  - Late comers pay designated fines.

### 12. Baseline Survey.

- Carry out a baseline survey with the Form (see page 92).

## Lessons Learned

### 1. Deciding the meeting day.

- Avoid market day when deciding the group meeting day.
- Avoid Monday for the FFS meeting day. The FFS programme needs a day for facilitator meeting and event preparation.

### 2. FFS orientation.

- FFS orientation is the key to make participants understand the FFS properly.
- It takes time for the many group members to understand the whole concept of FFS. Thus, do not hurry.
- FFS orientation contents should be well understood by facilitators. It should be introduced during the TOF seminar.

### 3. Dealing with high expectations of the farmers.

- At the start of FFS, group members will not have a clear concept of FFS. Many people tend to expect a government/ NGO programme to provide immediate

continued

and tangible benefits (donations). When they find there is nothing other than learning, some may wish to withdraw from the FFS. It is important, however, not to convince those people to remain at the FFS. It is difficult to change such people's attitude and they might create unrest during later stages.

#### 4. Talk Ball

- Make and use a talk ball to avoid dominance of a few members and improve the level of participation among people who are inactive in discussions (see page 93).

### Proposed Time Table for FFS Orientation

Time	Topic
8:30 - 8:35 am	Opening Prayer
8:35 - 9:00 am	Project Background & Activities
9:00 - 9:30 am	What is a Farmer Field School (FFS)
9:30 - 9:45 am	Project Inputs
9:45 - 10:00 am	Self-introduction of FFS Members
10:00 - 10:30 am	Important Aspects of FFS (Host farm, PTD, AESA)
10:30 - 10:45 am	Q & A and General Discussions
10:45 - 11:00 am	Confirmation of Acceptance
11:00 - 11:30 am	Deciding the FFS meeting day
11:30 - 12:00 pm	Election of Group Officials
12:00 - 12:30 pm	Formation of Sub-groups and Role of Host Team
12:30 - 13:00 pm	Registration of Members

## Levelling of Expectations

# 3

### STEP 2

If you feel that some group members have not properly understood the FFS concept, you can conduct a “Levelling of Expectation” session.

The general objectives of the session are:

- to find out participants' expectations for the FFS sessions;
- to identify farmers' expectations that do not match with the FFS framework; and
- to identify participants' key areas of interest.

The session can be conducted by asking following key questions:

- What do you hope to gain from FFS?
- What do you expect from the facilitators?
- What do you expect from the project?
- What do you think that the facilitators expect from you?
- What do you think that the project expects from you?

Initially, it is difficult for group members to clearly understand what the FFS programme can provide; many people tend to think that any project would bring material benefits or cash to them. Repeat the process if expectations do not match the FFS concept. Facilitators should conduct “Levelling of Expectation” at the start of FFS to make clear both responsibilities and limitations of the project as well as those of the participants. Use the “Frequently Asked Question” section of this manual as a reference in explaining to the participants.

## 3

## Formation of Sub-group

## STEP 2

Sub-grouping is an activity designed to divide the participants into smaller groups to maximise their participation and to increase the effectiveness of activities. Each sub-group is responsible for a treatment or plot in the field comparative study and takes turn to host FFS sessions.

The following are some of the merits of having sub-groups in FFS:

- it is difficult to work with big groups;
- sub-grouping provides an opportunity for all members of the group to participate actively;
- it increases each individual's responsibility;
- it enhances a sense of ownership in the learning process; and
- small groups encourage people to pay more attention to the sessions.

Often only a few group opinion leaders will dominate discussions when the whole group participates in a group discussion. Such situation would not benefit the other group members. Dividing a group of 20 to 30 participants into small groups will increase the chance for relatively shy participants to participate proactively in the sessions. Each sub-group will also be given time to work together in field activities and present findings, which provides every participant with an opportunity to express their ideas and opinions in front of people.

### **Important Consideration in Sub-Grouping.**

The number of sub-groups in an FFS will depend on the number of the members. In practice 4 (not less) to 5 sub-groups are appropriate. However, it is important to make sure that each sub-group includes at least one literate person who would be able to help other people in conducting FFS. The following characteristics should be taken into consideration:



- Gender balance;
- Number of illiterate persons;
- Age distribution; and
- Talent/Profession/Capacities (some people may happen to be former teachers and/or government employees).

## 3

## Assignment of Host Team

## STEP 2

A host team is a sub-group that is in charge of all of the activities of a particular FFS session. Every week, one sub-group is assigned the role of the host team, on a rotational basis. This provides an opportunity for all members to take on managerial roles during the FFS sessions.

The following are some of roles the host team is expected to perform during the FFS session:

- Arrange the venue and keep the learning site clean;
- Check the attendance of members;
- Facilitate the recapitulation session (to be done by previous host team);
- Introduce the resource person/guest speaker;
- Facilitate the members to follow the programme;
- Serve as time keeper;
- Distribute training materials and any other materials as necessary;
- Assist with necessary logistics;
- Facilitate and lead energisers and group dynamics;
- Carry out other functions assigned by the facilitator; and
- Hand over the host team duties to the next host team (sub-group) at the end of session.



Host team sitting together (at centre behind)  
- Roll Call at the beginning of the FFS session -

Duties within the host team also rotate, and one person should not repeat the same duty during the next host team assignment.

**Bad examples of host team practice.**

The followings are examples of bad Host Team practice:

- Only a few members in the host team are active and leading the session (other sub-group members are not an effective part of the host team);
- Sub-group members do not work together; and
- Some host team members are absent.

## 3

## Pair-wise Interview

The pair-wise interview is a participatory facilitation method to “break the ice” among participants at the start of FFS. This helps participants to get to know each other better and provides a relaxed atmosphere.

Materials: a piece of paper and a pen for those members who can write (illiterate members should use their memory).

Time: Around 45 to 60 min (Time depends on the number of participants).

### Steps

1. Divide the participants into pairs by combining persons who do not know each other well.


2. Ask each member to interview their partner by focusing on questions such as:

- What is your name?
- What is your favourite food?
- Which hobbies do you practice?
- Other important information about oneself that people should know (5 min.)

3. Each member introduces the partner to all participants in 2 min, summarizing the information obtained during the interview.



Extension-led-FFS Agreement




## Sustainable Livelihood Development Project (SLDP) in the Mau Complex

### Livelihood Farmer Field Schools Agreement

1. This agreement is jointly entered between SLDP and the group known by the following name,

LFFS Name: .....

Registration Certificate No.: .....

District: .....

2. This agreement has been entered on a voluntary basis without any coercion and is for the implementation of social forestry activities using the Farmer Field Schools (FFS) extension methodology in the project area. **The group members are expected to implement in their farms what they have learnt in the group host farm and share the information with their neighbours.**

3. This agreement has the following conditions,

1. **The group has the following responsibilities:**
  - a. Willing to participate in the FFS facilitation process for social forestry activities.
  - b. Use of the fund (Ksh 30,000) for LFFS activities only.
  - c. Use project inputs for agreed FFS activities only.
  - d. With the assistance of the FFS Facilitators, to hold field days for information sharing.
  - e. Graduate after successfully completing FFS activities with more than 75% attendance.
  - f. [Report to the project on the use of the fund.](#)
2. **The SLDP has the following responsibilities:**
  - a. Provide Ksh 30,000 (Thirty thousands only) in bank transfer for purchasing learning material over a period of 50 weeks to support LFFS activities.
  - b. Provide initial stationery (50 News prints, 5 felt pens, and 2 masking tapes).
  - c. Monitor group performance and provide necessary backstopping.
  - d. Shall stop further assistance if the group deviates from the agreed activities.

**Signed,**

On behalf of the group,		On behalf of the project,	
Name of Chairperson	Signature	Name of Field Coordinator	Signature
Date		Date	

## 3

## Roll Call

## STEP 2

The main purpose of the roll call is to assess attendance by members. It is the key criterion to determine which members are entitled to graduate and to receive the FFS certificate from the project. In ISFP, FFS members who were absent from more than 25% of meetings were not entitled to graduate.

Attendance is also an indicator of how the members perceive the quality of the FFS and facilitators. FFSs that have good quality facilitators tend to have higher attendance rates. Most FFSs face a decline in attendance at the early stages when people realise that FFS does not provide “quick money and donations”. However, those who remain become the core members and their performance generally tends to be good. If the number of members in each sub-group becomes unbalanced, rearrange the subgroups into equal numbers.



### Attendance Register.

Each FFS should be provided with a record book for the roll call. It is important to check members' attendance seriously and mark appropriately. If the roll call procedure is not respected, the members tend not to take FFS seriously.

Record attendance during the roll call as follows:

- If the members are present at the opening, Check “/”
- If the members are not present at the opening, Check “O”

- If the members are present at the end, Check “\”
- If the members are not present at the end, Check “O”

So members:

- Who were present for the whole session get “X”
- Who came late get “O\”
- Who excused themselves early get “/O”
- Who were absent for the whole session get “OO”



## 3

## STEP 2

## A Standard List of Stationary and Procurement Responsibility

Item	Quantity	Responsibility		Total
		Group	Project	
Newsprint (Pack by ½)	0.5			
Felt Pens (Black, Blue, Green & Red)	12			
Refill ink (Black, Blue, Green & Red)	4			
Ruler (30cm)	3			
Crayons (12 colours)	3			
Counter book 2Q	1			
Mark book	1			
Receipt book	1			
Cash books 2Q	1			
Spring file PVC	1			
A4 loose leaf	1			
Carbon paper	6			
Masking tapes (1")	2			
Steel tape measure (5m)	3			
Clothe Tape measure (3m)	3			
Wall clock	1			
Group weekly report	1			
Iron storage boxes	1			
Plastic sheet	1			
<b>Total</b>				

## Stationery Delivery Note

3

STEP 2

## Stationery Delivery Note

Issued by Field Coordinator.....

Name of the Group .....

Please, receive the following goods in good order and condition.

Item	Quantity	@	Total
Newsprint (Pack by ½)	0.5		
Felt Pens (Black, Blue, Green & Red)	12		
Refill ink (Black, Blue, Green & Red)	4		
Ruler (30cm)	3		
Crayons (12 colours)	3		
Counter book 2Q	1		
Mark book	1		
Receipt book	1		
Cash books 2Q	1		
A4 loose leaf	1		
Carbon paper	6		
Masking tapes (1")	2		
Steel tape measure (5m)	3		
Cloth Tape measure (3m)	3		
Wall clock	1		
Group weekly report	1		
Iron storage boxes	1		
Plastic sheet	1		
<b>Total</b>			

Delivered by .....

Received the above goods in good order and condition.

Received by ..... Signature .....

Designation ..... Date .....

It is estimated that about US\$ 100 is required for the purchase of above mentioned items.

## Baseline Survey Form (Sample)

## LFFS Register Form

No.	Name	Age	Sex		
District:		Division:	Location:		
Sub-Location		LFFS Name:	Total Family Member (Living Together)		
Total Possession of Lands	Total Agricultural Plot	Total Forest Plot			
acre	acre	acre			
Types of LFFS					
Current Production Level		No of Unit Produced Last Year			
Type of Unit					
Key Agricultural Production out of the Agricultural Plot above (yhe last year production)					
Type	No. of Bags	Kg per Bags	No. of Bags sell	Price per Bags	
Total Number of Timber Trees/ Species/ Last year Sell		Total Number of Fruit Trees/ Species/ Last year Sell			
Species	No.	Ksh	Species	No.	Ksh
Other Production (the last year production)					
	Possession	No. of ...	No. of Sell	Total Revenue	
Nursery	Yes / No				
Bee Hives	Yes / No	Hives			
Fish Pond	Yes / No	Fish			
Poultry	Yes / No	Chicken			
Cattle	Yes / No	Cattle			
Sheep/Goats	Yes / No	Sheep/Goats			

Signature

\_\_\_\_\_

## Group Practice: Talk Ball

# 3

### STEP 2

There are always shy people who do not express their ideas in front of other people. The “Talk Ball” facilitates shy people to speak up. This method also helps to improve the level of participation.

#### How to make a Talk Ball:

1. Use two to three newsprint papers and tapes to make a ball.



#### When to use it:

- Whenever only a few members are contributing to a discussion. To get an opinion from all members one by one, throw the ball to the person whom you would like to speak. Only the person holding the ball is allowed to speak and the person who received the ball must give his/her opinion.
- After expressing an opinion, the ball will be thrown to other people who have not contributed.

## 3

## STEP 2

**Key considerations.**

- Throw the ball equally among the members;
- Throw the ball intentionally to members who have been inactive in the discussions;
- Do not through the ball to members who have already contributed to the discussion; and
- The person who received the ball should pass it on to other members (there is no need to return the ball to the facilitator).



# 3

## STEP 2







# Step 3 Selection of Enterprise and Preparation of Profile with RurallInvest

## 3

### STEP 3

<b>Purpose</b>	<ul style="list-style-type: none"> <li>■ Identify enterprise.</li> <li>■ Prepare profile of selected enterprises with RurallInvest.</li> </ul>
<b>Main Outputs</b>	<ol style="list-style-type: none"> <li>1. Enterprise selected</li> <li>2. Profile of selected enterprises prepared using RurallInvest</li> </ol>
<b>Time Estimate</b>	<p>Three weeks:</p> <p>1<sup>st</sup> week: Discussion</p> <p>2<sup>nd</sup> week: Selection and Profile Definition</p> <p>3<sup>rd</sup> week: Profile Completion</p>
<b>Important Points</b>	<ol style="list-style-type: none"> <li><b>1. Review of enterprises.</b> <ul style="list-style-type: none"> <li>■ Facilitators should not advise on which enterprises to select. The group might fail if the local environment is not suitable for the selected enterprises. Make sure that the selection of the group enterprise is part of the learning process of FFS.</li> <li>■ The facilitators also need to make sure that the selection is based on the merits of collective learning, and not for the benefit of the host farmer or opinion leaders.</li> </ul> </li> <li><b>2. Selection of enterprises.</b> <ul style="list-style-type: none"> <li>■ Start with a simple and easy enterprise which appears to offer potential for improved incomes for participants.</li> <li>■ If members try to select more than two enterprises, you should facilitate them to reduce the total number of enterprises to avoid future confusion in AESA.</li> <li>■ If a collective decision on the selection of enterprise proves difficult, facilitators should advise the group to hold a ballot (10 stones method – see page 102) to promote democratic decisions.</li> </ul> </li> </ol>

## 3

Sequence of  
Activities

## STEP 3

continued

**1. Review of enterprises.**

- Review the enterprise catalogue and/or seek other enterprise options available.
- Discuss the following aspects of each proposed enterprise including:
  - purpose of each enterprise;
  - size of the learning site;
  - budget; and
  - expected benefits.
- Discuss in subgroups followed by plenary discussions.
- Conduct a Q&A session to clarify the issues to be addressed in FFS and members' questions about the enterprises.
- Carry out expectation analysis: recommended for members to understand better their own expectations.

**2. Selection of enterprises.**

- Select enterprises using open discussion and making use of the "Ten Stone" tool (see page 102).

**3. Preparation of profile with RuralInvest module 2.**

Using RuralInvest Module 2 (see Annex 3-8), prepare a Profile of each potential livelihood enterprise and forestry enterprise.

**Lead Questions  
for Expectation  
Analysis**

- What do you expect from this enterprise?
- What do you know of this enterprise?
- What kind of benefits will you get from this enterprise?
- What is the expected cost of this enterprise?
- What kind of local materials are available for this enterprise?
- When do you expect to have the first crop from this enterprise?
- What kind of pests and diseases do you have locally that may affect the enterprise?
- What kind of problems have you encountered in your farm activities?

- What kind of limitations do you face in carrying out this enterprise?
- Is there an available market for the products produced in this enterprise?
  - Make sure that the selected enterprise provides possible solutions for identified problems.

**Lessons Learned****1. Enterprise selection.**

- Ensure that all members, especially those who are illiterate, understand the purpose, merits and costs of each enterprise.
- Groups are not homogenous in their problems and interests. Therefore, it takes time for a group to select an enterprise. Give them sufficient time (a week or so) if time permits.

**Suggested  
Timetable  
AESA Taking**

A suggested timetable up to AESA follows. Allow approximately two and a half hours for the main activities of the day.

Time	Activity	Responsible
08:00-08:05	Prayer, Roll Call	Host team
08:05-08:10	Brief Recap	Host team
08:10-10:30	Main Activity of the day (AESA at later stage)	Facilitator
10:10-10:30	Group Dynamics	Host team
10:30-11:30	Special Topic	Facilitator
11:30-11:35	Review of the day's activities	Host team
11:35-11:45	Planning for Next week	Host team
11:45-11:50	Announcements	Host team
11:50-11:55	Roll Call, Prayer	Host team

## 3

**RurallInvest  
Profile  
preparation**

## STEP 3

continued

**1. RurallInvest: Module 2 - Profiling.**

- FFS facilitators who will use RurallInvest should receive RurallInvest Training prior to using this tool. Module 2 manual includes the formats to be used in the profile preparation. However, proper use of the formats for Profile preparation requires 3 days training. For further inquiries on RurallInvest training, contact: Investment-Centre@fao.org
- Module 2 provides a simplified methodology and approach to facilitate the conversion of general ideas into specific investment profiles. Drawn up in the field with the direct participation of the FFS members, it helps them to better understand the reality of the enterprises that they want to practice - in terms of resources, costs and outputs.
- Profiling allows both FFS members and programme management to assess the apparent feasibility of the identified enterprise before putting it into practice.
- Facilitators who assist FFS members to prepare profiles of enterprises need to understand the key concepts of Module 2 (see Annex 3-8).

**2. Implementation of module 2.**

- Usually it takes two half day sessions, with data collection by members of the group between the two sessions, to complete the profiling of a selected enterprise.
- The purpose of the first session is to finalize the selection of the enterprise(s) to be considered and define in detail the cost, income and other aspects for which additional information will be needed. This is achieved by studying the RurallInvest formats and deciding what information is needed to complete each profile. In most cases, group members will need to obtain additional information from equipment suppliers, technical staff and other experts.
- In the second session, the RurallInvest formats will be completed and the group must then determine whether

the proposed enterprise is worthwhile or, if there is more than one potential enterprise, select the preferred one.

- Facilitators should not use the attached templates in the exercise with the FFS members. Instead, they need to work with the group on large sheets of manila paper or a blackboard so that everyone can clearly see the information.



- Once a group decision has been made, the facilitator should submit the completed proposal to the field coordinator who will then enter the data into the RuralInvest program on the computer.

## 3

## Group Practice: Ten Stones

## STEP 3

The “ten stones” exercise is a participatory method to capture participants' preferences. The method is appropriate when selecting multiple options including prioritizing issues and testing participants' preferences before further discussions. It is recommended to conduct the “Ten Stones” exercise when selecting group enterprises.

**Procedure.**

1. Use newsprint paper (Manila paper) and list the choices from which the selection will be made;
2. Lay the papers on the floor;
3. Ask all members to fetch 10 stones; and
4. Ask the members to vote according to their preferences, weighing their value with numbers of stones.

**Rule.**

Everybody has 10 stones each. Each participant must decide how many of the 10 stones to put on their favourite enterprises. For example, one can vote all ten stones on one enterprise if he/she thinks that choice must be selected. If the participant prefers, they can divide their stones between multiple enterprises (5 – 5 to two choices or weighted 8 – 2 to two choices, or 4-3-3 for three enterprises). It is recommended not to conclude the selection with this voting. Further discussion may be required. All participants should feel comfortable with the final selection, even though the ballot provides a democratic result.

**Review of the results and repeat of voting.**

After the ballot exercise, analyze/discuss the results with group members. The participants may not have captured well the rules of 10 stones ballot the first time. If they are not happy with the first result, it can be done a second time. If so, explain the rules again. After each ballot discuss the results of the voting before asking for a decision.





## 3

# Financial and Economic Terms For RuralInvest Module 2

## STEP 3

## HELPING APPLICANTS TRANSFORM INVESTMENT CONCEPTS INTO REAL PROJECTS

- General Information.
- Investment Costs.
- Operating Costs.
- Fixed Costs.
- Output (income, users, benefits).
- Profitability or Cost per Beneficiary.

## WHAT IS A PROJECT?

The expenditure of resources in the present to generate benefits in the future.

## WHY PREPARE PROFILES?

- Ensure that the applicants understand what the project will involve.
- Avoid expending time and resources on FFS programmes for ideas that are not feasible.
- Increase the ownership of the project on the part of the applicants.
- Identify weaknesses early enough to modify the project successfully.

## MAIN STAGES IN PREPARING AND USING A PROFILE

- Identify the project type that will achieve the given objectives.
- Define and prepare the project profile.
- Undertake the preliminary assessment.
- Revise the profile if necessary.

## KEY SIMPLIFICATIONS USED IN PROFILES

- A profile looks at only a single point in time (when the project is fully operational).
- Instead of replacing assets when they pass their economic life span, a profile calculates an annual investment replacement allowance (or cost).

- A profile does not take into account financing costs (if credit is eventually to be used).
- Cost estimates may be approximate and are often not detailed.
- Associated costs (training, TA, systems etc.) are rarely included.
- Only limited attention is given to project organization, markets and environmental impact.

### **KEY FACTORS TO REMEMBER WHEN PREPARING AND ASSESSING A PROFILE**

- The importance of demand.
- The availability of supply.
- Defining what operations will take place:
  - Who are the beneficiaries?
  - What will be the units of production?
  - What will be the production cycle?
  - What are the sales or output units?
- Categorizing the costs:
  - Investment costs.
  - Production or Operating Costs.
  - Fixed or General Costs.
- Environmental Impact.

### **MEASURES OF FEASIBILITY**

Income Generating Projects:

- Net Income per Year (income less costs).
- Number of years required to repay the initial investment.
- Net income per year after including the annual investment replacement allowance.

Non Income Generating Projects:

- Total investment cost per beneficiary.
- Community contribution and donation per beneficiary.
- Annual operating costs per beneficiary.
- Annual fixed and variable costs per beneficiary.
- Paying for upkeep and maintenance.

## 3

## Key Terms Used in RuralInvest Module 2

## STEP 3

**UNIT OF PRODUCTION**

- Unit used to measure the volume and cost of production (e.g. hectares, boats, production lines, kg.).

**PRODUCTION CYCLE**

- The period during which production occurs (in months to a max. of one year).

**ECONOMIC LIFE**

- Number of years of use before an item is replaced.

**MAINTENANCE**

- The cost incurred in order to maintain an item in working order (not operating costs).

**SALVAGE VALUE**

- The value of an item at the end of its economic life.

**EXTERNAL RESOURCES**

- Resources provided by the supporting fund or project (as loan or grant).

**OWN RESOURCES**

- Resources provided by the beneficiaries (community or group applying for assistance).

**INVESTMENT COST**

- Cost of establishing the project, repeated only when the item reaches the end of its economic life.

**OPERATING COST**

- Periodic cost which depends upon the level of activity or scale of output (e.g. packaging, raw materials, water usage).

**FIXED OR GENERAL COST**

- Periodic cost which does not change as the level of activity or output changes (e.g. management, land tax, office expenses).

**DIRECT BENEFICIARY**

- Supplier, employee or client of a project and its services or products.

**SALES UNIT**

- Unit of measurement used for sales (kg, box, each, etc.).

**TRANSPORT COST**

- Cost of transporting one unit of input to the point of use, or one unit of output to the point of sale.







# Step 4 Selection of Host Farm and Preparation of Learning Site

## 3

### STEP 4

<b>Purpose</b>	<ul style="list-style-type: none"> <li>■ Select a host farmer.</li> <li>■ Prepare a learning site.</li> </ul>
<b>Main Outputs</b>	<ol style="list-style-type: none"> <li>1. Host farmer selected</li> <li>2. Preparation of learning site started</li> </ol>
<b>Time Estimate</b>	One to two weeks
<b>Important Points</b>	<ol style="list-style-type: none"> <li>1. <b>Nomination of host farmers.</b> <ul style="list-style-type: none"> <li>■ Read aloud the “Host Farmer Agreement” and the selection criteria to the members.</li> <li>■ Do not rush the selection of the host farmer; facilitators should provide a week for the group to find good candidates for the selected enterprises and the learning sites.</li> <li>■ Host farmers may want to provide poor quality (waste) land. Make sure that the land is suitable for developing a PCE.</li> </ul> </li> <li>2. <b>Selection of host farmer.</b> <ul style="list-style-type: none"> <li>■ Always carry out site visits to compare possible sites and examine feasibility, and prepare site designs for the selected enterprises as well as for the learning site.</li> <li>■ Check the soil and land characteristics. If these are identified as too poor to support the selected enterprise, advise farmers not to select the land as the host farm.</li> <li>■ Select the host farmer in a democratic way to avoid unnecessary group conflicts in the future.</li> <li>■ Identify farmers who live in an area with easy access for the majority of the group members; this helps to maintain group activities.</li> </ul> </li> </ol>

## 3

## STEP 4

continued

**3. Host farm and learning site.**

- If possible, locate the learning site in the same place as the enterprise site for ease of carrying out learning activities.

**4. Size of host farms.**

- Do not make a host farm too big. The cost of the establishment should not be too high; if it is too expensive, members may think that they could not copy the enterprises in their own farm without help from other sources.

**5. Seating material.**

- The groups should be advised to use locally available materials as much as possible in preparing the learning site.

**6. Provision of shelter.**

- Advise groups to construct a temporary roof or establish suitable seating under a tree to avoid rain and direct sunlight.

**7. Physical problems for learning sites.**

- The most common problems of learning sites are the lack of a flat area and shade. They are often covered

## Sequence of Activities

with bushes; good sites are often already allocated for agricultural activities.

### 8. Unwillingness to use local available material.

- Some groups are unwilling to use local materials. They often think that implementing agencies should bring modern materials.

### 1. Nomination of host farmers.

- Review of the “Host Farmer Agreement” and criteria for the selection of a Host Farmer to provide clear guidance on responsibilities of being a host farmer.
- Provide poor examples of host farmers.
- Nominate host farmer candidates who are well accepted by community members.

### 2. Identification of the potential enterprise site and learning site.

- Visit proposed sites to confirm availability of the land and suitability of size and shape for the selected enterprises and learning site.

### 3. Selection of host farmers.

- Review the criteria again.
- Select the Host Farmer.

### 4. Design of leaning site.

- Prepare a design for the learning site.

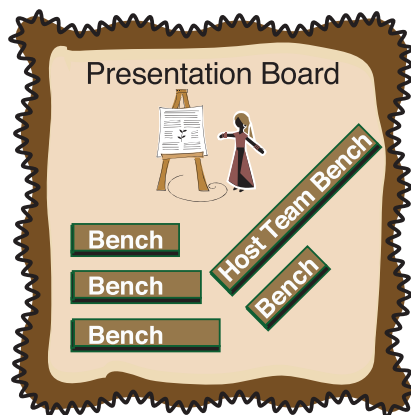
The actual preparation of the Learning Site is done after the session as homework for the groups before the following sessions.

## 3

## STEP 4

## Lessons Learned

continued



Typical Layout of FFS learning site

**5. Host farmer agreement.**

- Signing of agreement between the host farmer and the group.

**1. Characteristics of good host farm.**

- Site suitable for the selected enterprise;
  - Site with good security so that crops are not stolen or destroyed (presence of host farmers at the host farm to provide security);
  - Free access guaranteed for the members by the agreement and bylaws;
  - Water availability for tree nursery;
  - Enough space for holding FFS sessions; and
  - Host farmer:
    - Respected by community members; and
    - Willing to hold field day for other community members.
- 
- What do you expect from this enterprise?
  - What do you expect from this enterprise?
  - What do you know about this enterprise?
  - What kind of benefits will you get out of this enterprise?
  - What is the expected cost of this enterprise?
  - What kind of local materials are available for this enterprise?
  - When do you expect to have the first crop from this enterprise?

- What kind of pests and diseases do you have locally?
- What kind of problems have you encountered in your farm activities?
- What limitations do you face in carrying out this enterprise?
- Is there a market available for the products produced in this enterprise?

### 1. Dealing with jealousy toward host farmers.

- Sometime, facilitators may encounter conflicts among members due to jealousy toward host farmers. Establishment of multiple host farmers could be advised **only if**:
  - the group selects two to three enterprises at the same time; and,
  - the location of the second/third enterprise sites are close to the learning site.
- Do not allow members to get the impression that they are working for the host farmers.
- Stress the responsibility of being the host farmer.

### 2. Selection of host farmer.

- Make sure the selection is carried out based on the merits of collective learning, and not for the benefit of the host farmer.
- Host Farmer selection is different from the selection of enterprises. Facilitators should provide to the groups as much advice as needed.
- The process of selecting an appropriate host farmer also helps groups to establish equal partnerships among members, which ultimately would undermine any attempt at dominance by the group leader.

### 3. Gender and Host Farmers.

- Land ownership: there are cases where a woman may not be in a position to decide on providing land for the group host farm.

## 3

## STEP 4

## Home Work

continued

**4. Learning site.**

- Farmers can be very innovative in preparing learning sites; encourage the use of local material.

**1. Preparation of the leaning site.**

- Clearing of bushes.
- Ground levelling.
- Arrange comfortable seating arrangements: e.g. benches (where applicable).
- Preparation of two stand frames for presentations and display of the timetable.
- Construction of temporary shade or roof.

**Learning site preparation might take more than a day, especially preparing the seating arrangement and roofing. These constructions should be undertaken in parallel with other activities.**



# Learning Site

# 3

STEP 4

Seating Arrangement



Temporary Roofing Structure



## 3

## Necessary Items for Learning Site

## STEP 4

Prepare or find locally the following items to allow FFS sessions to run properly.

**A Large Board** for pinning Flip Charts, News Print and the Timetable. A table turned on its side can also be used.



**A Clock** is needed for effective time management during FFS sessions since many members do not have watches.



Many FFS groups meet under a big tree

Sample for Host Farmer Agreement

3

STEP 4

# Host Farmer Agreement



**Sustainable Livelihood Development Project (SLDP) in the Mau Complex**



## The Host Farmer Agreement

This agreement is jointly entered between the farmer, and the Host Farmer.

Mr/Ms: ..... Referred to as the Host Farmer and the chairman of the group on behalf of the group.

Farmer group named: .....

Registration Certificate No: .....

District: .....

According to this agreement,

The host farmer has agreed to his/her site(s) to be used for the implementation of social forestry activities under the Livelihood Farmer Field Schools (LFFS) after consultation among the group members and the facilitator.

This agreement has the following conditions.

- 1.1 The host farmer shall allow group members free access to the LFFS site for the agreed period of one year.
- 1.2 Trees established in the Host Farm shall become the property of the host farmer after the graduation of the group. In case of fruit trees, the host farmer shall allow the group members to obtain scions from the host farm for grafting purposes and in case of trees, the group shall agree on the collection and sharing of seeds.
- 1.3 Other crops harvested during the LFFS shall be used based on group members' consent.
- 1.4 All inputs provided by the ISFP shall be used only for the LFFS activities.

**Signed.**

Host Farmer		On Behalf of the Group	
Name	Date	Name of Chair person	Sign
Sign		Name of Secretary	Sign

Witnessed by .....

Name of Facilitator ..... Signature .....

Date.....

Division ..... District.....





# Step 5 Farm Enterprise Planning

## 3

### STEP 5

<b>Purpose</b>	<ul style="list-style-type: none"> <li>■ A FFS participatory planning process where the group members learn the skills of designing enterprises and prepare a proposal for the selected enterprises.</li> </ul>
<b>Main Outputs</b>	<ol style="list-style-type: none"> <li>1. Participatory comparative experiment (PCE) design.</li> <li>2. Enterprise and PCE proposal.</li> </ol>
<b>Time Estimate</b>	<p>1<sup>st</sup> week: PCE design and site clearing.</p> <p>2<sup>nd</sup> week: Layout and adjustment of the PCE design.</p> <p>3<sup>rd</sup> week: Preparation and submission of Enterprise proposal.</p>
<b>Important Points</b>	<ol style="list-style-type: none"> <li>1. <b>PCE design.</b> <ul style="list-style-type: none"> <li>■ The PCE designs in the enterprise catalogue are just examples. FFS and Facilitators could modify them or develop new ones according to local conditions.</li> <li>■ Members' interests vary, but there should be a focus on the issues identified in the PCE design and discussions.</li> <li>■ Make sure that at least one person in each sub group understands the concept of PCE and ask them to share with members who are not clear about the concept.</li> <li>■ Use the local language as much as possible in explaining the concept of the PCE design.</li> <li>■ Reduce costs by promoting the use of local materials.</li> <li>■ Enhance members' planning skills.</li> <li>■ Consider the size and cost of each enterprise; the higher the cost, the less it might be replicated by the FFS members, if investment funds are not made available by the project.</li> <li>■ Identify existing traditional technologies and include them in the PCE.</li> </ul> </li> </ol>



## 3

## STEP 5

continued

## 2. Adjustment of PCE design.

- Adjust the prepared PCE design according to land size and characteristics before preparing the Enterprise and PCE proposal.

## 3. Availability of materials.

- High quality seedlings, especially fruit seedlings, may not be available at the time of planting. Therefore, it is important for the project management to estimate the number of seedlings required for the year and procure enough seedlings prior to receiving the PCE proposals.
- Varieties of agricultural seeds necessary for the enterprise trial may not be available in local towns. In addition, some crop varieties recommended by agricultural officers may not be available in small quantities. Thus, facilitators must conduct market research to find out the availability of seed varieties.

## 4. Timing of delivery.

- The rain may not start when expected before planting. As a precaution, seedlings should be delivered to one of the members' homesteads (preferably host farmer) so that they will be taken care of until they are planted.

## 5. Other problems.

- Some varieties available in local markets, especially fruit tree seedlings such as grafted mangoes, may not have the name of the varieties. Facilitators need to ensure that the varieties used in the PCE are identified prior to purchasing.
- Facilitators must ensure that all materials are correctly labelled, and delivered in both quality and quantity.

### Sequence of Activities

The purpose of FFS is not only to study the potential enterprise. It involves comparative experiments between technologies that the project considers appropriate and those technologies practiced by farmers based on their experience and traditional knowledge.



Therefore, the enterprises selected by the FFS must be designed to measure differences between the two technologies.

### 1. Group exercise: stones and buckets (see page 128).

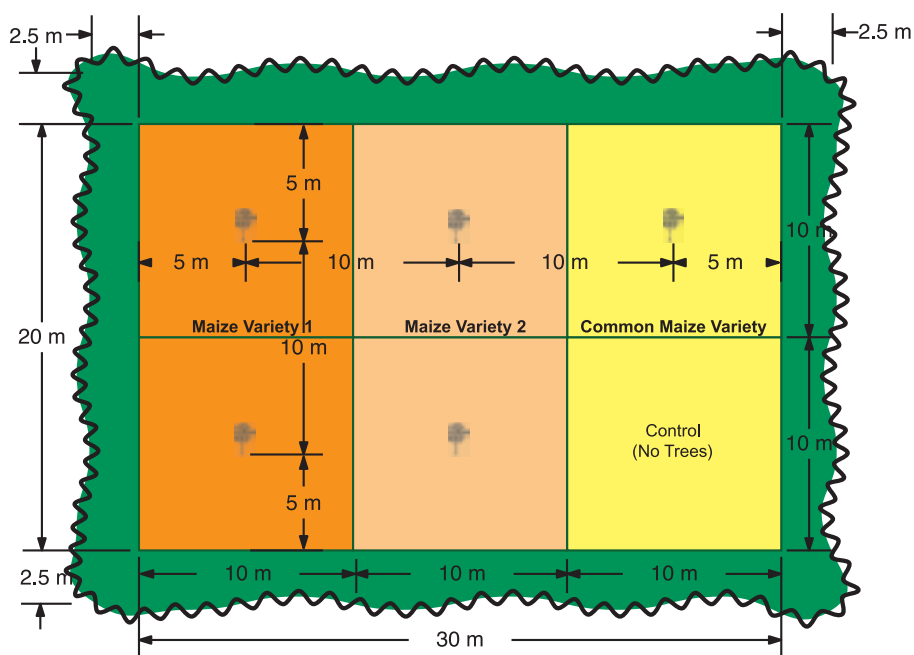
- Members' exposure to the basic concept of PCE design.

### 2. PCE design.

- Discuss on the PCE design and group contribution.
- Conduct participatory soil and topography survey.
- Identify existing affordable technologies.
- Develop a PCE Design with "Host Farm Design".
- Prepare and submit "Enterprise & PCE Proposal".

### An example of a PCE design

Melia intercropping with Maize



### 3. Site clearing.

- Discuss of the site clearing.

### 4. Layout of host farm.

- Boundary marking at the host farm.

## 3

## STEP 5

continued

**5. Adjustment of PCE design.**

- Review and adjust PCE to reflect the measurement in the host farm design to the PCE proposal.

**6. Discussion of ploughing.**

- Discuss on ploughing. If the group decides to plough the site, ask them to identify owners of oxen to plough the host farm.

**7. Development of enterprise and PCE proposal**

- Prepare the enterprise and PCE Proposal under group members' collaborative efforts.

**8. Submission of enterprise and PCE proposal (see page 130).**

- Submit the proposal to the field coordinator.
- Review the proposal in relation to the preliminary procurement plans. Facilitators should make sure that all material necessary for the enterprise establishment is procured and delivered before the planting season starts.

**9. Procurement of enterprise learning material.**

- Cross check the design with the PCE Proposal; facilitators/ group leaders procure materials to be used in the FFS.

**10. Delivery of materials (see page 131).**

- Confirm delivery of material with the signature of the chairperson on the delivery note.

**Lessons Learned**

**1. PCE design.**

- Farmers are knowledgeable. Do not underestimate them in designing the PCE.
- Farmers have their own coping strategies against natural hazards and disasters, which should be incorporated into the PCE design.
- The facilitator should be well conversant with the

methodology of the PCE Design and host farm design; the facilitators should continue to study subjects that are frequently asked by their FFS members.

## **2. Site preparation.**

- Site preparation could take several weeks depending on the condition of the host farm. It is recommended that the site clearing should start as early as possible and continue as homework for the FFS.

## **3. Late delivery.**

- Late delivery is a serious setback for FFS activities. Therefore, careful planning is always required and procurement should start as early as possible.
- Bulky seedlings such as mangoes could be difficult for facilitators to transport. It is important to organize logistics for the successful delivery of material needed for PCE.

## 3

# Participatory Comparative Experiments

## STEP 5

**What is participatory comparative experiment?**

A Participatory Comparative Experiment (PCE) is a way to examine issues related to agro ecology and interactions of plants with the environment, including pests and diseases, through a simple comparative study. It aims to facilitate farmers in learning principles of experimentation, the design of a field study, and M&E methods for analysis of experimental results. It is expected that through the practices of monitoring the PCE would also enhance farmers' capacity in observational and analytical skills in their farm practice. The development of farmers' capacity in planning and assessing experiments for new ideas and technologies would also be anticipated in the PCE design.

**Why does a comparative study help farmers?**

PCE tries to make visible the results of experiments by comparing two sets of treatments – improved and traditional. It is usually difficult for farmers to recognize differences or advantages of a recommended or research proven method when there is no visual comparison. It becomes clearer if different treatments (practice options) are laid out side by side and compared for the performance of growth in case of introducing, for example, a new variety or type of crop husbandry. The same approach can be applied for other subjects such as tree growth performance, e.g. with and without treatment of seeds.



### Important principles in PCE experiment.

- PCE experiments should be simple but give reliable results;
- Experiments should compare one parameter at a time;
- PCE should be managed and evaluated by farmers themselves;
- Benefits from the PCE should be for all FFS members and not only for one or a few members;
- PCE should be designed with no risks involved for the participants; and
- Facilitators should consult with local researchers or colleagues to seek advice on the facilitation in designing a PCE.

### Steps in developing the PCE.

Once all principles are well understood and accepted by the FFS members, and a type of PCE is identified, the following steps can be taken to design the PCE:

- Identify and prioritise the problems to be addressed;
- Identify possible solutions with locally available technology;
- Identify treatments;
- Design a simple experiment with a defined time frame;
- Identify materials required and identify local suppliers; and
- Develop a budget.

## 3

## STEP 5

**Comparative study in PCE.**

When comparing new technologies, you should set a conventional method as a control, which will provide a gauge to measure what is “Improved” in the new technologies – between “Farmer Practice” vs. “Improved Practice”. The following are typical comparative design elements:

- Treated seeds vs. Not treated (control);
- Traditional ways vs. New technology;
- Conventional vs. Facilitator recommended; and
- Common variety vs. New variety.



## PCE Proposal Preparation

# 3

### STEP 5

Upon concluding the discussions on PCE, ideas generated by FFS members will be translated into an “Enterprise & Learning Proposal” and “Host Farm Design” (see the following templates). The purpose of the enterprise & learning proposal is to plan for procurement and delivery of learning material. The proposal must specify items in quantity, types and cost. The members should be clear about the PCE experiment that they will conduct at the host farm and the design of the experiment.

Each group should assess the total cost with the assistance of the facilitator. The FFS group should contribute in providing locally available material to lower the enterprise total cost. In this way participating farmers can replicate the same activities with lower cost by using local material on their own farms. Saving of funds would also benefit the members because they could try more PCE within the limits of the allocated budget.

Learning material listed in the proposal will be submitted to the field coordinator for approval. The FFS should coordinate with the field coordinator if any items to be procured require vehicle transportation. A copy of the proposal will be retained by the group for verification when the learning materials are delivered. In case a proposal is found to be inappropriate or not clear, it will be sent back to the group for adjustment and re submission.

## 3

## Group Exercise: Stones & Buckets

## STEP 5

### Objectives.

- To learn the importance of some basic principles of experimentation;
- To relate the practice to PCE; and
- To acquire basics techniques for improved planning, design, implementation, and M&E of PCE.



### Materials.

- Six buckets: four of the same (medium) size, two of different sizes (one big, one small); and
- 40 stones.

### Procedure.

#### First throw:

- Ask for four volunteers: one per sub group and explain that these people represent four things that you want to compare;
- Give each sub group 10 stones each;
- Explain to the groups that the objective is to find out who is the best at throwing stones in a bucket;
- Assign one person with the big bucket, one person with the small bucket and two persons with the medium size buckets;
- Ask them to throw the stones into the assigned buckets from the same distance; and

- The one who gets the most stones in the buckets wins the game.

**Discussion:**

- Ask the members whether the game is fair?
- If the answer is “Not Fair” ask why not?

**Second throw:**

- Re distribute the stones;
- Assign everybody with the same size buckets;
- Ask them to throw the stones into the buckets;
- The one who gets the most stones in the buckets wins the game;
- Repeat the game once or twice more to show that people don't always have the same scores; and
- Calculate the average score for each person and then declare the winner.

**Key Lessons of this practice.**

- Simple treatment
  - While you plan to compare something in an experiment, always think whether other factors/parameters are equal, e.g. size of the farm plot, Number of trees, soil type, slope, presence of water or runoff channels etc.
- No measurement = No analysis
  - You cannot analyze the result of the PCE Experiment without measuring: growth, yield, duration, etc. (the PCE is monitored by taking crop/tree measurements through weekly AESA sessions).
- Preparation of PCE design
  - Do not put many parameters in one experiment. One parameter (or two at most) in an experiment is appropriate. More parameters are too complicated for participants to analyse.

3

STEP 5

**Enterprise & PCE Proposal**

Date: \_\_\_\_\_

Name of the Group	_____	District	_____
-------------------	-------	----------	-------

**Enterprise 1**

**Purpose of this activity**

Material	Quantity	Unit Price	Total	Responsibility
Cost covered by the Project		Ksh		
Cost covered by the Group		Ksh		
Total cost for enterprise		Ksh		

**Drawing Learning Plan and PCE Setup  
(Trial type, Target Species, Measuring parameters for AESA)**

**Group Account Balance**

Previous Balance	Total amount for this proposal	Balance
Ksh	Ksh	Ksh

Name and signature of the Chairperson \_\_\_\_\_

Date \_\_\_\_\_

Comments from Facilitator

Signature of Field Coordinator \_\_\_\_\_

Date \_\_\_\_\_









# Step 6 Enterprise Establishment

3

STEP 6

<b>Purpose</b>	<ul style="list-style-type: none"> <li>Preparation of sites for group activities.</li> </ul>
<b>Main Outputs</b>	Prepared enterprise site
<b>Time Estimate</b>	<b>Two weeks</b>
<b>Important Points</b>	<ol style="list-style-type: none"> <li><b>1. Land preparation.</b> <ul style="list-style-type: none"> <li>It takes time to prepare land. Careful planning is therefore important.</li> <li>Land preparation should be completed before the planting season begins.</li> </ul> </li> <li><b>2. Difficult terrain.</b> <ul style="list-style-type: none"> <li>In case of difficult terrain at the host farm, start preparation well in advance to ensure preparation is completed in time.</li> <li>Plots on sloping areas might require terracing.</li> </ul> </li> <li><b>3. Use of water in preparing holes.</b> <ul style="list-style-type: none"> <li>When the top soil is too hard to dig, water the area the night before to make hole digging easier.</li> </ul> </li> <li><b>4. Participation.</b> <ul style="list-style-type: none"> <li>Full participation of members is crucial.</li> </ul> </li> <li><b>5. Material.</b> <ul style="list-style-type: none"> <li>Planting materials need to be provided. But ask the members to bring their own tools. Farmers often demand new tools to establish enterprises.</li> </ul> </li> <li><b>6. Knowledge.</b> <ul style="list-style-type: none"> <li>Proper spacing knowledge for agricultural crops and trees is required.</li> </ul> </li> </ol>

## 3

continued

- Facilitators should have proper knowledge on species selection.



### Sequence of Activities

Sequence of enterprise preparation will be different in each PCE design. The following is a typical farm forest enterprise site preparation.

- 1. Land levelling and measurement.**
  - Measure the land based on the PCE design.
- 2. Ploughing.**
  - Plough if necessary.



### 3. Staking out.

- Staking out the plot boundaries will be done according to the spacing indicated in the Host Farm Design. Stakes and tape measures should be made available.



### 4. Pitting.

- Size of pits for trees varies depending on the type of trees to be planted; i.e. larger water harvesting structures for fruit trees.
- Pits will be refilled later with soil (mix with manure if it is possible).



## 3

## STEP 6

continued

### 5. Construction of structure for a PCE.

- A PCE can be applied to measure any variable. An example below is a chicken coop to measure the differences between improved variety and traditional chickens in terms of number of eggs produced and growth rates.



### Lessons Learned

#### 1. Host farm land preparation.

- Land preparation for a host farm could take several weeks depending on the condition of the site. Careful planning is required to avoid time conflicts. Remember that the time of a FFS session is very short (3-4 hours/week) so FFS groups should continue to prepare the site as homework, outside of the regular group sessions.
- Keep in mind that the role of facilitator is not to work together with the members; they should focus on providing technical inputs.

### Fencing for the protection of planted seedlings

Farm enterprises should be designed with protective hedges. For example pigeon peas lines can be planted around the plot; this temporary “live fence” protects the enterprise in the plots from animal grazing until the crop is harvested. Post harvest grazing can cause a lot of damage to the enterprise and it is thus important to ensure protection at all times. Whole farm or individual tree fencing must be constructed before the plot becomes open to animal grazing, especially in the dry season.



Protective line planting by pigeon peas (left)  
and live fence for whole plots



Individual fencing of trees showing firm structure and no  
disturbance for tree development







# Step 7 FFS Weekly Session

## 3

### STEP 7

#### Purpose

- Accumulation of experience by participating farmers through analysis of comparative studies involving different topics.

#### Main Outputs

1. Weekly report prepared by both the group and facilitator
2. Monthly report prepared by the facilitator

#### Important Points

##### 1. Timetable.

- The FFS weekly session timetable should not change frequently. Once the timetable is agreed upon, it should be followed and respected until the harvest of crops.
- The timetable must be displayed every session and a clock provided for timekeeping. The timetable should be separately displayed in front of the FFS members. It should not be put over the AESA presentation board.



##### 2. Participation.

- Full participation of members is a “must”. Facilitators ensure that sub group leaders encourage their members to participate proactively.

##### 3. Facilitation material for special topics.

- Facilitators must prepare enough facilitation materials for weekly special topics.
- Special topics should be prepared based on requests by

## 3

## STEP 7

Sequence of  
Activities

continued

group members, or the facilitator may have a topic that s/he would wish to introduce for the benefit of the group.

**4. Arrangement of resource persons.**

- If the budget permits, facilitators are requested to look for local resource persons to cover some of the special topics.

**5. Reporting.**

- Reporting by facilitators and the group is the key for monitoring progress and identifying problems. Payment of allowances to facilitators should be tied to timely delivery of reports by them.

**1. Weekly FFS group activities.**

- A typical example of a FFS session timetable is as below.

TIME	ACTIVITY	RESPONSIBLE PERSONS
08:00 08:05	Prayer, Roll Call	Host team
08:05 08:10	Brief Recap	Host team
08:10 08:40	AESA Taking	All
09:10 09:40	AESA Processing	All
09:40 10:10	AESA Presentation	All/Host team
10:10 10:30	Group Dynamics	Host team
10:30 11:30	Today's Topic/ Special Topic	Facilitator
11:30 11:35	Review of the day's activities	Host team
11:35 11:45	Planning of Next week	Host team
11:45 11:50	Announcements	Host team
11:50 11:55	Roll Call, Prayer	Host team

- The members meet on an agreed day and usually conduct a 3 4 hour learning session. Like a regular

school, FFS has its own schedule and timetable. The timetable must be agreed among the members. It also identifies the person who is responsible for each activity.

## Lessons Learned

### 1. AESA.

- AESA is the key activity in FFS and therefore the management must make sure that AESA is properly conducted.
- At the end of AESA presentations by the subgroups, the facilitator should wrap up, summarising each presentation and help members to draw more accurate conclusions.
- AESA for food crops should be done weekly, but AESA for trees can be done bi weekly or monthly since trees grow more slowly and changes on a weekly basis may not be significant.

### 2. Recap.

- Before starting the activities of the day, a recap session should be held to review the previous week session. Every week the role of Host Team rotates. The previous week's Host Team should review the session and summarize key findings according to the timetable.
- The host team can summarise step by step following the items on the timetable from the previous week. The recap should not take more than 5 minutes.

### 3. Literacy.

- At least one or two people in each sub group should be literate. Sub group formation should thus be well managed to distribute literate persons to each group.
- If literacy level is low, group members could take a long time to write and understand reports without assistance. Use more drawings than words on the AESA sheet for these situations.
- Use the local language, dynamics and songs to express

## 3

## STEP 7

continued

difficult concepts and to help illiterate people understand them better.

#### 4. General.

- Facilitators should not hurry the groups to make progress.
- When members encounter problems facilitators should guide them in a way that encourages self discovery among members. Facilitators should avoid giving direct answers and opinions as this undermines the learning process. It is critical to let farmers understand by themselves. It is OK to have a repeat session in the next week FFS.
- There is always a reason for any decline in membership. The field coordinator should visit such groups and consult members early enough to find out the reasons and take action if needed. If the members are inclined to stop their participation in FFS, the facilitators and field coordinators should respect their decision; it is not desirable to convince them to continue in the FFS.
- Facilitators must arrive at the FFS learning site prior to the time of FFS session. It has been observed that FFS groups whose facilitators are not punctual have more problems in members' participation.

# Agro-Ecosystem Analysis: AESA

## 3

### STEP 7

AESA is a comprehensive on farm monitoring and evaluation method for crops/trees and it is the cornerstone of the FFS. It involves:

- Regular (weekly/biweekly) observations of the crops/trees;
- Data collection for growth assessment and analysis of comparative experiments;
- Close observation of the interaction between tree/crops and other biotic/a biotic factors coexisting in the field;
- Critical analysis of field observations; and
- Decision making by farmers through collective discussion.

The AESA process can be tedious work for the members and requires concentration. If both members and the facilitators are not committed, it would result in poor quality FFS and not help farmers. The members need to receive encouragement from facilitators until they are used to the activities.

Even without AESA FFS will be able to show how to grow crops. When conducted without AESA, however, farmers may not acquire skills of monitoring the farm regularly, observing the crops systematically, and practicing critical analysis. As a result of failure to build AESA skills, they would not be able to build their capacity for informed decision making. Furthermore, the field observation during AESA leads to presentation during FFS. Absence of AESA also means that FFS members lose the opportunity to develop self confidence in presenting their ideas and findings in front of other people, and making decisions for the next step as well as selecting solutions collectively.

Thus, the absence of AESA can lead to poor capacity building and reduced potential for empowerment of the farmers. AESA is thus a necessary practice and must be conducted at every FFS session until crop harvest. AESA is the way for the farmers to become Farmer Experts “No AESA, No Farmer Expert”.

## 3

## STEP 7

Every AESA session as a weekly activity has four steps:

- a. AESA taking (field data collection);
- b. AESA processing (data analysis);
- c. AESA presentation (sharing observations and findings with the larger group); and
- d. AESA synthesis (discussion and decision making).

### Sampling of plants.

Two or three plants in each plot/treatment need to be selected as the sample plants for measurement and observation. The samples should be marked and monitored until the end of FFS. If the selected plants become damaged, resample other plants using the same methods. There are several ways of sampling:

- Random sampling by throwing stones backwards (see the picture below).
- Selection with a pre determined number: randomly pick a number and count plants from the corner of a block. If the randomly selected number is “4” for example, every “4<sup>th</sup>” plant is selected.
- Selective sampling from good, medium and low performance populations: e.g. one from upper part of good growth, one from lower part of low growth and one from mid part.



Random sampling method by throwing stones backwards  
(Somali Land, by T. K. Mutinda)



**AESA taking.**

The sub groups carry out AESA taking. Field observation and data collection are conducted during the AESA taking. At the early stages, facilitator should introduce and emphasise AESA taking methods until someone in a sub group understands what is required. It is important that all members of the sub group participate. Lack of sub groups would result in a situation where some members have nothing to do and eventually reduce the level of participation.

The host team or the facilitator assigns each sub group a plot based on the PCE design. Each sub group then goes to the field and records measurements, field observations and results including:

- Growth measurement of the plants;
- Pests and friendly insects & their populations;
- Weeds & their coverage;
- Disease / pests & their significance;
- Soil conditions: dry, moist, wet, etc.;
- Weather: sunny, windy, rainy, cloudy, etc.; and
- Overall plant health for the particular stage.

It is recommended that each sub group carries a small notebook to record the above mentioned data in the field. Every week, each group should be assigned different plots to measure so that all members are exposed to the different plots (PCEs).



AESA taking on agriculture crops (Maize)  
and fruits trees (Mango)

## 3

## STEP 7



AESA taking on tree seedlings in nursery enterprises



AESA taking on forest tree enterprises: *Melia volkensii* (left) and *Eucalyptus* spp. (right)

It is common that some sub groups may want to skip the AESA taking, saying “there is no point in measuring plants and we just want to see the growth of plants.” Keep in mind that the objective of taking measurements in AESA is not only data collection. The following are some of the reasons to advocate in taking the measurements of plants:

- To compare growth between the different treatments;
- To understand the growth process of the plants; and
- To observe the plants closely.

Often members find pests and diseases as well as friendly insects while they are measuring plants.

It is also important that the members do not mix this activity with other farm activities: e.g. weeding, and watering, while taking AESA. Farm work should be decided through the AESA presentation session, after which members share what is happening in the host farm and agree what they have to do prior to such actions.

Timekeeping is very important during AESA taking because members may forget the time as they concentrate on observation and measurement.

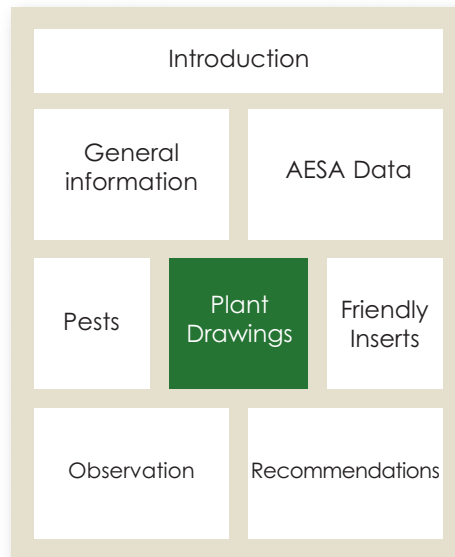
### **AESA Processing.**

Field observation data are analyzed and compiled on the AESA chart for presentation, discussions and informed decision making. All sub group members who collected field data should sit together during AESA processing to reflect on their findings and opinions. The AESA chart has eight sections as shown below.

1. Introduction: introductory information including the name of FFS, name of sub group, AESA number, week number, date;
2. General Information: Species/varieties, methods of establishment, treatment, date of sowing/planting, weather, time of observation, etc.;
3. AESA Data: Measuring parameters including height, circumference, width of leaves, length of leaves, number of branches, etc. as agreed with members:
4. Plant drawings;
5. Pests;
6. Friendly insects;
7. Observations; and
8. Recommendations.

## 3

## STEP 7



Structure of AESA Chart (Left). Mango trees (Right) showing newly sprouted leaves with light green colour without any verbal or written descriptions.

The AESA chart can be simplified according to members' literacy level. If many members have problems in writing, more time may be needed to prepare. A change of the structure is allowed to, for example, include more drawings than text. However, new facilitators should ask experienced facilitators what to omit or change.

AESA charts are better to be visual with fewer words which are easier for everyone to understand. It is also possible to put live specimens on the chart and use colours/crayons for drawing. Visual AESA charts can help illiterate members to increase their participation in the discussion.



Members' proactive participation (Left). Illiterate members (behind left) are not integrated in the AESA processing (right)



Illiterate members tend to sit at the back and do not participate in the AESA processing. Even if they cannot write, illiterate members may be able to draw pictures and they can also comment on the drawing.



A FFS facilitator asking illiterate members' opinions to integrate into AESA chart (Ethiopia)

When facilitators observe poor integration of members in AESA taking and processing, they should act swiftly and facilitate sub group members to work together suggesting some roles for illiterate people including drawing pictures, preparing live specimens, contributing to discussions and preparing recommendations.

Timekeeping is also important during AESA processing. Some sub groups may take a longer time in the preparation and must learn to process activities within a set time. It is recommended to refer to previous AESA exercises, but copying previous AESA charts is not permitted.

## 3

## STEP 7

## Simplified AESA Chart

Sub-Group: _____	Date of AESA: _____
Species: _____	Measurements: (Height, No. of leaves, etc.) _____
Treatment: _____	_____
No. of Weeks (Since sowing/Transplanting): _____	_____
Observations: _____	Recommendations: _____
_____	_____
_____	_____

**AESA Presentation.**

After compiling field information into an AESA chart, the Host Team facilitates the AESA presentations session and discussion to agree further actions on the PCE. Each representative of every sub group presents their findings displayed on the AESA chart. Every week, the presenter is rotated within the sub group. Women and illiterate members are usually shy and may not want to present. However, these people should be encouraged to do so because presentation of the AESA is as an opportunity for them to build self confidence. After each presentation, a Q&A session follows.



AESA presentations by the representatives of the week for each sub-group



**AESA Synthesis.**

After sub groups presentations, the facilitator conducts a discussion session. If some action is required such as eliminating pests, applying chemicals, etc, the facilitator leads the discussion and asks members to decide on actions required. Then, the facilitator wraps up the discussion and summarises the lessons learnt and decisions made. The Host Team must be aware that the learning/discussion and major decisions of the week will be presented during the following week's recap session. The AESA processes should be concluded within the same day. AESA is not only for observation and data collection but also involves farm condition analysis and immediate action planning for farm management. It must end with decisions related to farm management for the day.

Finally, the presented AESA charts should be stored securely for future use and analysis. The data will be used at the time of the PCE analysis as well as for presentation on field days or graduation ceremonies.

## 3

## Group Dynamics

## STEP 7

FFS involves certain team building activities known as group dynamics. Most folk media and other communication methods can be used as group dynamics. Types of common dynamics usually observed in FFS sessions are:

- Clapping
- Songs
- Poems
- Dances
- Proverbs/Parables
- Riddles
- Stories
- Drama/Role Play
- Taking Tea or Coffee
- Others

“Clapping” is commonly used in FFS sessions to get the attention of the participants.



Songs (left) and dances (right) in Group Dynamics



Riddles (left) and story telling (right)



Milk tea (Kenya) and Coffee with salt (Ethiopia)  
during Group Dynamics time

As shown in the typical timetable above, there is an item in the programme allocated for group dynamics. Many people enjoy this time to relax and it increases the coherence of group. The type and content of the dynamics will vary from group to group; it depends on the creativity of members and their respective talents. Innovation for the dynamics or diversification of existing ones should be encouraged.

In creating group dynamics it is important to add messages that reflect FFS learning. In most FFS groups there is an FFS song that includes messages containing the FFS principles (See Part I). Story telling and drama also contribute to sharing important learning experiences. Group dynamics also help illiterate people to understand key learning experience and concepts.

## 3

## Today's Topic (Special Topics)

**STEP 7**

The "Topic of the Day" is a session designed to provide members with knowledge and technical input. It is also referred to as "Special Topic", because it introduces many different topics not necessarily related to FFS and may include health, social and cultural topics. Usually a special topic session lasts for 30 minutes to one hour. In order to make it more participatory, facilitators are encouraged to use sub group discussions and other facilitation skills.

FFS encourages "learning by doing" and "discovery based learning" where new knowledge is acquired through observation and hands on experience. However, there is a limitation of the knowledge members can acquire during FFS; subjects that are not related to PCE would not normally be discussed unless such subjects are presented to the members. Special topic sessions aim to reduce such gaps by introducing the basics of many different learning subjects.

There are two categories for special topics: (i) enterprise related topics, and (ii) non enterprise related topics.

### **1. Enterprise Related: Related to Implementation of On-going Enterprises.**

The Today's Topic is usually related to enterprises including forestry and agricultural production systems. It can cover land preparation, nursery development, seed sowing, etc. For example, if a group is practising transplanting of seedlings, facilitators may want to discuss the subject prior to the day of the practise. Timely introduction of a new concept during special topic sessions one week before the actual practise session in FFS is encouraged in order to familiarize the members with the subject.

Furthermore, members may encounter problems in their enterprises. In order to facilitate their discussion and provide basic knowledge related to the problems, facilitators may want to use special topic sessions for such issues. If a problem is

beyond knowledge of the facilitator, the FFS can invite a specialist in the subject, if resources are available.

**2. Non Enterprise Related: Needs of members.**

Any subject can be introduced depending on the interests of the members. The aim is to provide the members with opportunities to learn about different subjects, which could help them in their livelihood and production systems.

## 3

## Other Key Activities during Weekly Sessions

## STEP 7

**Review of the day's activities.**

Review and summarise the session at the end of the day to refresh FFS learning. This helps members to gain the correct perspective of the learning process for the day and contributes to capacity building.

**Planning for next week and homework.**

It is crucial to plan the activities for the next week's session. Sometimes actual farm activities including watering, weeding, tending may not be practiced during the FFS session. If something must be done in the field an assignment is given to selected members. It has to be discussed and agreed by the members.

**Announcements.**

Announcements including arrival of guests or communal events can be introduced at the end of each session. This will contribute to the better planning of FFS activities.

**Weekly report.**

After each FFS session, the FFS group should prepare a "Group Weekly Report". It is the members' joint responsibility to describe the contents of the day's activities in the report. The report will be used for M&E of FFS and facilitators' performance by the FFS management and therefore facilitators should not fill the report. In addition, it aims to:

- monitor the visit by facilitators;
- capture how the session was conducted: problems, impressions of members;
- check relevance of sessions; and
- record the activities.

If the mobile phone monitoring system is not available, the Weekly Report must be carbon copied; the original to be collected from the



group by the field coordinator during routine backstopping visit and sent to the FFS management and a copy remains with the FFS (see the next section). Allowances paid to facilitators are recorded by members in the report which allows the group to appreciate the cost of extension service.

**3****STEP 7**

3

# FFS check sheet

STEP 7

Does your Group perform the following main FFS Activities?

**1. AESA**



AESA Taking



AESA Processing



AESA Presentation

**2. Group dynamics**



Are there FFS messages in the group dynamics?

**3. Special topic**



Is the special topic based on group members' request?



Are sub-groups working well?

1. All FFS members are divided into sub-groups?
2. Does the total number of PCE match with the total number of Sub-groups?
  - Is each sub-group responsible for a PCE?
3. Does the FFS have the Host Team?



Are they participating in AESA?  
Why are they looking at their colleagues?

Are AESA sheets prepared properly?

**Incorrect AESA Preparation**



Why are these considered as incorrect?  
How can you improve these?

**Basic AESA Format**

Basic information Name of group, Sub group name, AESA no. Week no, Date, etc		
General information		Parameters
Pests	Plant drawing	friendly insects
Observations		Recommendations

Do you have appropriate PCE?

**Examples of nursery PCE**

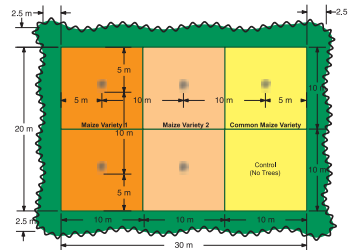


**Germination PCE**  
A. Hot water pre treatment  
B. Control (no treatment)



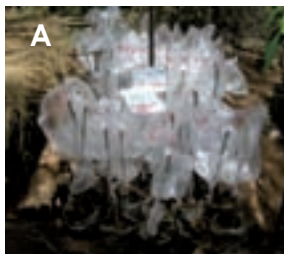
**Seedling growth PCE**  
Different sized poly tubes  
A. 4x6 cm, B. 5x8 cm, C. 6x9 cm

**Farm Forestry PCE**



**PCE on Timber species planting in agricultural crop plots**

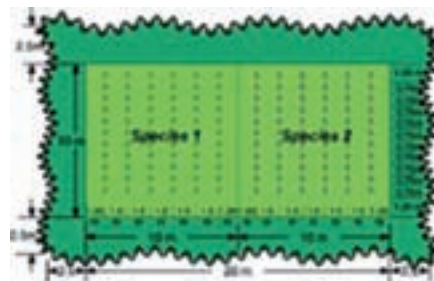
**Grafting PCE**



A. Scion with protection  
B. Scion without protection



**Fodder Bank PCE**



Performance of Spp. A and B





# Step 8 Tree Nursery Enterprise Planning and Establishment

## 3

## STEP 8

<b>Purpose</b>	<ul style="list-style-type: none"> <li>■ Group members learn planning, designing and establishment of a nursery enterprise.</li> </ul>
<b>Main Outputs</b>	<ol style="list-style-type: none"> <li>1. Nursery PCE designs prepared</li> <li>2. Nursery established</li> </ol>
<b>Time Estimate</b>	<ol style="list-style-type: none"> <li>1. <b>Establishment: two weeks</b></li> <li>2. <b>Operation of nursery: until the end of FFS</b></li> </ol>
<b>Important Points</b>	<ol style="list-style-type: none"> <li>1. <b>Setting up rules for nursery maintenance.</b> <ul style="list-style-type: none"> <li>■ Watering seeds and seedlings is the most important activity in maintaining the nursery. The facilitators should assist the members to make rules for maintenance of their tree nursery.</li> </ul> </li> <li>2. <b>Availability of water.</b> <ul style="list-style-type: none"> <li>■ The availability of water is an essential criterion when selecting the host farmer.</li> </ul> </li> <li>3. <b>Proper planning in seedling production.</b> <ul style="list-style-type: none"> <li>■ Facilitators must provide a clear schedule to group members on the timing of seedling production.</li> </ul> </li> <li>4. <b>Clear objective setting.</b> <ul style="list-style-type: none"> <li>■ Facilitators must discuss with the members to agree on the objectives of the tree nursery enterprise.</li> </ul> </li> <li>5. <b>Dealing with high expectation to produce as many seedlings as possible.</b> <ul style="list-style-type: none"> <li>■ When group members have high expectations for the tree nursery, they tend to focus on producing as many seedlings as possible. Facilitators should differentiate</li> </ul> </li> </ol>

## 3

## STEP 8

continued

between the learning process (involving PCE and AESA) and group income generation. The material given to FFSs would not be sufficient to allow for sales. The two objectives should be balanced.

- If the nursery has a ready market, plan carefully for the level of the production. Then the cost of inputs should be shared among the members.

#### 6. Responsibility of host farmer.

- FFS members are permitted to have free access to the tree nursery during the learning period.
- Community members are accepted to visit the farm to see the result of comparative study e.g. during Field Day.
- FFS members share tree nursery products including scions for grafting.

#### Sequences of Activities

**After AESA on crops/trees as well as other livelihood development enterprises becomes routine, a tree nursery enterprise can be started as the second/third FFS enterprise.**

#### 1. Expectation analysis: levelling members' expectation.

- Expectation session with leading questions (below) enables group members to identify issues and problems in carrying out the nursery enterprise.

- What do you expect from the nursery enterprise?
- What do you know of nursery enterprises?
- What benefits will you get out of the nursery enterprise?
- What is the expected cost of the nursery enterprise?
- What local materials are available for the nursery enterprise?
- When do you expect to have first seedlings from this enterprise?
- What pests and diseases do you have locally for small scale nurseries?



Host farmer consents that:

- FFS members are permitted to have free access to the tree nursery during the learning period;
- community members are accepted to visit the farm to see the result of comparative study e.g. during Field Day.
- FFS members share tree nursery products including scions for grafting.

#### Examples of Nursery Materials:

- Regular soil
- Forest soil
- Manure/ Compost
- Sand
- Farm Implements for Nursery
- Spades
- Hoes
- Soil Sieve
- Sack or buckets to carry soils
- Rake
- Machetes
- Poly-tubes
- Local material
- Cans or plastic containers for watering seedlings
- Poly-bag or wasted containers to subsidize Poly-tubes for seedlings

- How many members have nurseries and what problems have you encountered previously?
- What limitations do you face in carrying out nursery enterprises?
- Why have you not started a nursery before?
- Is there an available market for the seedlings produced in this group nursery?

## 2. Host farm and tree nursery site selection.

- Discuss in general suitable sites for tree nurseries.
- Identify basic requirements for a suitable nursery site which should have easy access to water and a fence to protect against animal browsing (homework for the group).
- Visit previously identified nursery sites.
- Select a site and host farm for the group.
- Sign site agreement forms between host farmer and the group.

## 3. Watering rules.

- Establish watering rules (timing and amount) and rotation of groups to care for seedlings.

## 4. PCE design.

- Discuss PCE design.
- Discuss group contributions.
- Identify existing affordable technologies.
- Develop PCE design

## 5. Preparation of nursery site.

- Clear the bushes and uproot stumps.
- Level the ground.
- Construct a fence resistant to animals (if not already in place).

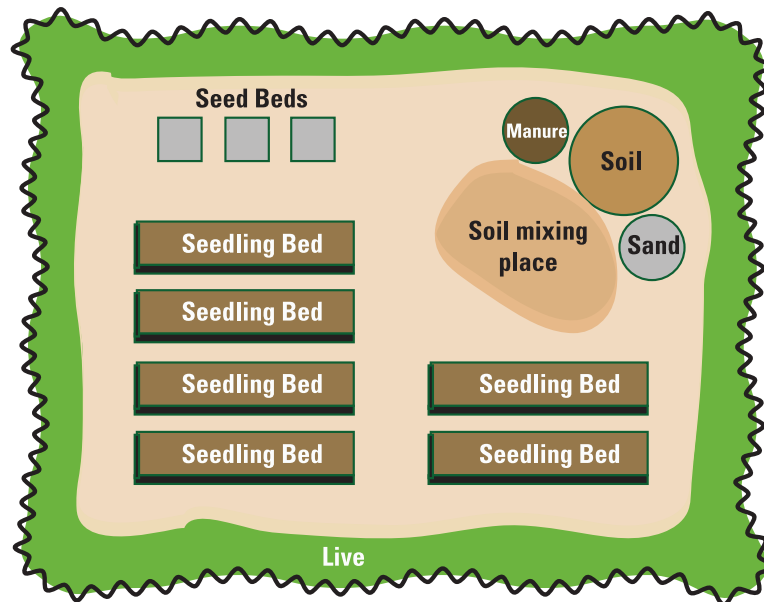
## 3

continued

## STEP 8

**6. Site design layout.**

- Prepare nursery layout design.

**7. Preparation of enterprise and PCE proposal.**

- With “A Standard List of Nursery Material and Procurement Responsibility” (see page 166), identify material to be provided by the group and procured by the project.
- Prepare and complete the “Enterprise and PCE Proposal” provided on page 167.



### 8. Purchase and delivery of nursery materials.

- Facilitators and the field coordinator confirm all materials are ready to be purchased and delivered in a timely manner to their respective groups.
- Prepare delivery notes according to the proposal submitted by the groups.
- Group's members confirm receipt of materials to the group. The chairperson signs the delivery note.

### 9. Construction of tree nursery.

Prepare and complete the Enterprise and PCE Proposal.



### Lessons Learned

#### 1. Submission of proposal.

- Timely action in the planning and preparation of the nursery enterprise is necessary to ensure that nursery materials are acquired on time.

#### 2. Group nursery and IGA.

- If markets are identified, IGAs, through the selling of seedlings, should be promoted in the nursery enterprise. This will encourage members' proactive learning.

## 3

## STEP 8

### A Standard List of Nursery Material and Procurement Responsibility

Item	Quantity	Responsibility		Total
		Group	Project	
Regular soil				
Forest soil				
Manure/compost				
Sand				
Farm implements for nursery				
Spades				
Hoes				
Soil Sieve				
Sack or buckets to carry soil				
Rake				
Machetes				
Poly tubes				
Local material				
Cans or plastic containers for watering seedlings				
Poly bag or wasted containers to subsidize poly tubes for seedlings				
<b>Total</b>				







3

STEP 8







# Step 9 Exchange Visits

## 3

### STEP 9

<b>Purposes</b>	<ul style="list-style-type: none"> <li>■ Know the activities and performance of other FFS groups and facilitators.</li> <li>■ Provide opportunity for members to undertake self evaluation compared to the host FFS.</li> <li>■ Exchange ideas, techniques and methodologies between FFS groups and facilitators.</li> <li>■ Assist participants to think in new ways.</li> </ul>
<b>Main Outputs</b>	1. Exchange Visit report.
<b>Time Estimate</b>	<p><b>Four weeks in total</b></p> <ul style="list-style-type: none"> <li>- 1-3 sessions for preparation including budget</li> <li>- One session for implementation</li> <li>- One session for reviewing the visits</li> </ul>
<b>Important Points</b>	<p><b>1. Timing.</b></p> <ul style="list-style-type: none"> <li>■ The timing of exchange visits must be carefully planned. If the group organization is weak, earlier timing of an exchange visit is recommended.</li> <li>■ The date of visit should coincide with the day of routine session for the host FFS.</li> <li>■ It is difficult to carry out exchange visits during the rainy season. Where possible arrange the timing of exchange visits for drier months.</li> <li>■ Based on experience the best timing is when the food crop has not yet been harvested.</li> </ul> <p><b>2. Transportation.</b></p> <ul style="list-style-type: none"> <li>■ The facilitator should make transportation arrangements well in advance – if necessary.</li> </ul>

## 3

## STEP 9

continued

**Sequence of  
Activities**

**3. Cancellation.**

- Due to unpredictable events, sometimes planned exchange visits may be cancelled; e.g. very bad weather, or a social event such as a funeral affecting the group that will host the visit.
- Communicate well with the host FFS for cancellation and decide an alternative date if necessary.

**4. Arrangement by the Host Groups.**

- Careful arrangement by the host FFS is necessary to ensure the exchange visit is successful.
- The host group should be ready to receive the group and proceed with the day's programme.
- Have open time for discussion to exchange ideas and opinions between the groups.

**5. Cost.**

- Exchange visits can be carried out at low cost by visiting neighbouring FFSs. Encourage frequent visits to neighbouring FFSs.

**1. Identification of the group to be visited.**

- Share preliminary agreement/conditions of the project among members for exchange visits.
- Identify an FFS group and date to visit through group discussion.

**2. Preparation of preliminary budget plan and transportation arrangement.**

- Facilitators and group leaders prepare budgets.
- Submit the budget plan to the project.
- Arrange transport – if necessary.

**3. Preparation of Exchange Visit Plan (see page 174).**

- Prepare detailed visit plans including time for departure and transportation if necessary.



- Communicate with the group to be visited either verbally or in writing.

#### **4. Implementation of Exchange Visits.**

- Implement exchange visits.

#### **5. Review of Exchange Visit (see page 175).**

- Review the exchange visit and summarise the experience into the Exchange Visit Report.

### **Lessons Learned**

#### **1. Earlier Planning of Exchange Visits.**

- The facilitators should initiate early planning to ensure adequate time for preparation.

#### **2. Voluntary-basis Exchange Visit.**

- Where possible, exchange visits should be carried out on a voluntary basis (without financial assistance from the project) by visiting neighbouring FFSs.

3

STEP 9

### Exchange Visit Proposal

Date: \_\_\_\_\_

Name of the Group	District
-------------------	----------

**Host FFS**

**District and Location of Host FFS**

Item	Quantity	Unit Price	Total	Responsibility
Cost covered by the Project		Ksh		
Cost covered by Groups		Ksh		
Total cost for enterprise		Ksh		

**Purpose of the Visit**

**Weakness points to be strengthened by visiting the Host FFS?**

**Strength to demonstrate to the Host FFS?**

Name and signature of the Chairperson

Date

\_\_\_\_\_

\_\_\_\_\_

**Comments from Facilitator**

Signature of Field Coordinator

Date

\_\_\_\_\_

\_\_\_\_\_



**Exchange Visit Report****Date:**

<b>Your Group Name</b>		<b>District</b>		<b>Community</b>	
<b>Visited Group</b>		<b>District</b>		<b>Community</b>	

Subject	Observation	Evaluate The Group Visited	Point %	Evaluate Your Group in comparison	Point %	Reasons for the evaluation
AESA in General		Good		Good		
		Fair		Fair		
		Poor		Poor		
FFS Session in General		Good		Good		
		Fair		Fair		
		Poor		Poor		
Enterprise in General		Good		Good		
		Fair		Fair		
		Poor		Poor		
PCE in General		Good		Good		
		Fair		Fair		
		Poor		Poor		
Performance of Farmer Facilitator		Good		Good		
		Fair		Fair		
		Poor		Poor		
Performance of Facilitator		Good		Good		
		Fair		Fair		
		Poor		Poor		

What did you learn from them? (if anything)	
What did you teach them? (if anything)	
Comments from Facilitator	

Name and signature of the Chairperson

Date

\_\_\_\_\_

\_\_\_\_\_



# Step 10 Farmer Facilitator Selection

## 3

### STEP 10

<b>Purposes</b>	<ul style="list-style-type: none"> <li>▪ Select farmer facilitators.</li> </ul>
<b>Main Outputs</b>	Farmer Facilitators (FFs)
<b>Time Estimate</b>	<p><b>Three weeks: One week for nomination</b>  <b>One week for selection</b></p> <p><b>Training of Facilitator: One week</b></p>
<b>Important Points</b>	<ol style="list-style-type: none"> <li><b>1. Clear explanation of the role.</b> <ul style="list-style-type: none"> <li>▪ Facilitators must provide a clear description of the role of farmer facilitators.</li> </ul> </li> <li><b>2. Do not select candidates because he/she is a leader.</b> <ul style="list-style-type: none"> <li>▪ Knowledge and facilitation skill is the most important attribute for being a FF. Therefore, facilitators should make sure that their group does not select farmer facilitators simply because they are leaders of the group.</li> </ul> </li> <li><b>3. Criteria for selection of farmer facilitators.</b> <ul style="list-style-type: none"> <li>▪ Level of attendance in FFS;</li> <li>▪ Level of adoption of PCE in their own farms;</li> <li>▪ Willingness to contribute their time to run FFS;</li> <li>▪ Communication skills;</li> <li>▪ Physical fitness;</li> <li>▪ Willingness to stay in the community;</li> <li>▪ Socially accepted by the community; and</li> <li>▪ Reasonable level of basic literacy.</li> </ul> </li> </ol>
<b>Sequence of Activities</b>	<ol style="list-style-type: none"> <li><b>1. Briefing session for FFs.</b> <ul style="list-style-type: none"> <li>▪ Role of Farmer Facilitators and their specific tasks.</li> </ul> </li> </ol>

continued

**2. Nomination of candidate.**

- Nominate several candidates, usually in pair(s).

**3. Approval of Groups.**

- Candidates approved by FFS members.

**4. TOF seminar.**

- A week long Training of Facilitators (TOF).
- Written test to evaluate the candidates' basic level of FFS knowledge.

**5. FFS by Farmer Facilitators.**

- On the completion of TOF seminar, candidate FF should facilitate FFS sessions in their mother groups.

**6. Farmer Facilitator Evaluation (see page 179).**

- Evaluation of FFs by facilitators or project staff towards the end of the FFS (before the graduation).
- Those who pass the evaluation will be selected as FFs.

## Farmer Facilitator Evaluation Sheet

Name		FFS	
Sex		Attendance	
District		Facilitator	

1. Willingness to help and share information with other members.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
2. Transparent, accountable and trustworthy.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
3. Literacy level.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
4. Understanding of FFS concept and practice.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
5. Socially accepted.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
6. Health and physical condition.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
7. Time management.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
8. Communication skill.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
9. Leadership skill.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor
10. Level of adoption of FFS at his/her own farm.  
Good 

5	4	3	2	1
---	---	---	---	---

 Poor

Comments:

Facilitator

Coordinator

Signature

Signature

Date

Date







# Step 11 Participatory Evaluation

## 3

### STEP 11

#### Purpose

- Check the progress of members' learning.
- Improve facilitators' performance and group activities.

#### Main Outputs

1. Ballot Box exercise report
2. PCE analysis
3. Revised RuralInvest Module 2
4. Cost and benefit analysis report
5. Farm self analysis report
6. Self evaluation report
7. Way forward report

#### Time Estimate

**Three to four weeks**

#### Sequence of Activities

##### 1. Ballot Box.

- Special topic on ballot box exercise.
- Prepare questions (at least 15) on manila papers and ballot boxes.
- Prepare ballot papers according to the number of members.
- Set up appropriate polling stations.
- Prepare a ballot box result sheet.
- Review questions together after the exercise.



A group member helping an illiterate member to read questions

## 3

## STEP 11

continued

**Conduct the ballot box exercise at the beginning of the FFS in order to measure the knowledge level of FFS members.**

**2. PCE analysis.**

- Set up criteria for PCE Analysis.
- Implement PCE Analysis by sub groups.
- Select best options for their individual farms.

**3. Review of RuralInvest Module 2 Profile.**

- Review the RuralInvest Module 2 Profile based on FFS experiences and findings to prepare for the following cost and benefit analysis.

**4. Cost and Benefit analysis.**

- Agree on the plot size to be used in the analysis.
- Set up appropriate units, e.g acres, kg, bags, etc.
- List inputs and cost.
- Extrapolate yields in units.
- Reach consensus on the farm gate prices.
- Calculate profits / loss per plot.
- Rank the plots against profits.
- Prepare a report.

**5. Farm self-analysis report.**

- Distribute the report format to the members in order to have a better understanding of questions.
- Sub group discussion.
- FFS group discussion.
- Compile the report.

**6. Self-evaluation report.**

- Sub group discussion.
- FFS group discussion.
- Prepare the report.

### 7. Way-forward report.

- Sub group discussion.
- FFS group discussion.
- Prepare the report.



## 3

## What is Participatory Evaluation?

## STEP 11

Participatory Evaluation (PE) entails the active involvement of FFS members including facilitators in the process of assessing change and impact. The table below summarizes some of the differences between conventional evaluation and PE.

### Differences between Conventional and Participatory Evaluation

	Conventional	Participatory
Who	External experts.	Farmers, Facilitators, Project staff.
What	Predetermined indicators.	Farmers identify own indicators.
How	Focus on scientific objectivity.	Self evaluation using simple methods adapted to local culture.
When	Upon completion or mid ter.	Frequent small scale assessment & evaluations.
Why	Accountability to funding agencies.	To empower local people to initiate, control and take corrective action.

The PE helps farmers to increase ownership as a result of activities and reflect on their performance for progressive improvement. When you conduct a PE, use Final Session Report (Annex 3 9).

### Possible challenges in participatory evaluation.

PE relies mainly on self evaluation and group discussion. It does not provide an exact assessment or numerical answer. There are limitations in the accuracy of data used. In most cases data collection is retrospective and must be interpreted with caution if used for formal external analyses. The importance of PE lies in the fact that it facilitates an evaluation process by the FFS members themselves. It develops their analytical processes and judgement.

The following are some potential problems, which a facilitator may experience while conducting a PE:

- Farmers may not remember figures well;
- Farmers tend to overestimate figures;
- There might be data loss;
- Loss of plant or products through pests and animals;
- Consumption of the crops before harvesting;
- Data analysis can be tedious especially for the first time; and
- Illiterate members would require more time.

**Participatory evaluation that can be used in FFS.**

1. Ballot box exercise report.
2. PCE analysis and field day proposal.
3. RurallInvest Module 2 revised.
4. Cost and benefit analysis report.
5. Farm self analysis report.
6. Self evaluation report.
7. Way forward report.



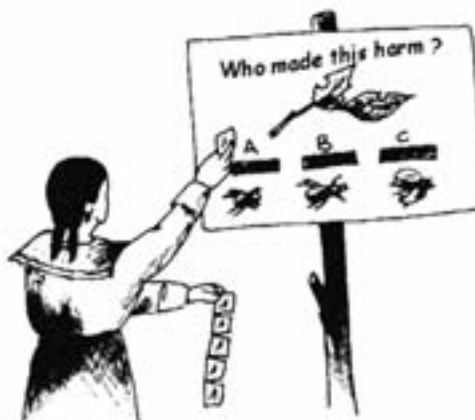


**Preparation:**

1. Prepare 15 to 20 questions focused on important knowledge and techniques in regard to the FFS enterprises and curriculum (see examples of questions below).
2. Prepare ballot boxes with questions. Try to simplify and use the least possible number of letters/words. Prepare three pockets below the question and mark them with multiple choice answers. The pockets are the ballot boxes into which the FFS members cast their "ballot" – in the form of their ID number.
3. Display specimens next to the question. This makes the question clearer, especially for illiterates.
4. Place the questions around the host farm using poles or by fixing on trees.

**Implementation:**

1. Assign each participant an ID number and provide them the ballot string with this number. Record each participant's ID number.
2. Explain to the participants that each board has a question with three answers but only one answer is correct. On each question board they should put their ID number ballot in the pocket showing their selected answer.
3. Each participant answers separately at each question. Blow the whistle when the allocated time (1 or 2 minutes per ballot station) has been reached. Continue the exercise until all participants have answered every question.
4. Discuss with illiterate members one week before to find a most comfortable way to help them to undertake this exercise.

**Evaluation:**

1. After finishing the session, the facilitator will hold a plenary session with the group asking questions such as:
  - How do you feel about this activity?
  - What have you learnt from the exercise?

## 3

## STEP 11

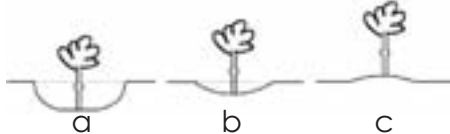
- How can we improve the session?
  - Did you like to analyse each question?
2. Review the answers for each question while the questions are still mounted on the board.
  3. Analyse the result in the office, evaluate the participants' performance and prepare a report (Annex 3 9 1).

**Notes for Facilitators.**

1. The facilitator should prepare the questions at home/office. The questions must be practical and based on the availability of the specimens and materials. They should not be formulated from textbooks.
2. The samples should be fresh/live and maintaining their colours, with evident symptoms and characteristics.
3. The facilitators should arrive earlier to prepare and collect specimens on the day of this exercise.
4. If possible, ask for help from a colleague or a farmer facilitator in undertaking the session.
5. Take care when disclosing the results of the ballot. Do not disclose to those members who do not want to know the results.



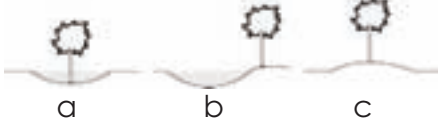

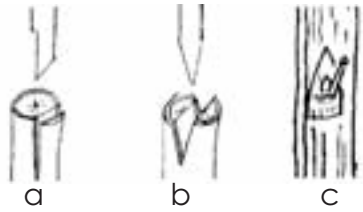
## Example of Ballot Box Exercise

Cropping Techniques	
Which is the proper spacing for maize? a. 1 X 1 ft b. 1 X 3 ft c. 3 X 3 ft	Who caused this harm (Drawing/Specimen) a. Stalk Borer b. Lady Bug c. Cut Worm
Fruit Orchard	
Which is proper spacing for mangoes? a. 2 X 2 m b. 5 X 5 m c. 7 X 7 m	Which is Apple mango? a. (Specimen) Kent b. (Specimen) Apple c. (Specimen) Vandyke
Grafted mango should be planted:	
	
Tree Species	
Which tree has a lot of branches? a. Grevillea b. Senna siamea c. Eucalyptus	Which tree is not termite resistant? a. Mukau b. Senna siamea c. Eucalyptus
Which tree does not coppice? a. Grevillea b. Eucalyptus c. Mukau	Which fruits are not edible for man? a. Bula (Vitex doniana) b. Mukau c. Tamerindo
Which tree is not eaten by cattle? a. Mulberry b. Calliandra c. Cypress	Which tree is not eaten by goats? a. Mukau b. Grevillea c. Eucalyptus
What is the problem of Mukau? a. Germination b. Termites c. Kukauka rahisi	

## 3

## STEP 11

## Example of Ballot Box Exercise

Tree Management	
<p>Mukau should be planted:</p>  <p>a                  b                  c</p>	<p>If you see buds in Mukau, what will you do?</p> <p>a. Toa b. Acha ikue c. Piga dawa</p>
Nursery Techniques	
<p>Which tree is better for seed collection?</p>  <p>a                  b                  c</p>	<p>How often do you water nursery seedlings?</p> <p>a. Daily b. Weekly c. Monthly</p>
<p>What is bad for Mango seeds?</p> <p>a. Soak b. Cut the seed coat c. Boiling in the water</p>	<p>Which is good for Grevillea Seed?</p> <p>a. Sow dry b. Soak c. Boil in water</p>
<p>How often should you do root pruning?</p> <p>a. Daily b. Weekly c. Monthly</p>	<p>Which is wedge grafting?</p>  <p>a                  b                  c</p>
Pest & Diseases	
<p>Which one is a pest?</p> <p>a. Stalk borer b. Bee c. Earthworm</p>	<p>Which one is a beneficial insect?</p> <p>a. Grasshopper b. Weevils c. Black ants</p>
PTD & AESA	
<p>What is not true? PCE is:</p> <p>a. To compare techniques b. To make better decision c. To increase workload</p>	<p>Which is not true? AESA is:</p> <p>a. To assess development of crop b. To find disease and pest c. To show the officers</p>

# PCE Analysis Session

## 3

### STEP 11

#### Objectives.

To assess and evaluate the result of PCE at the final stage of an enterprise and enhance members' capacity to analyse at the end of FFS. Emphasise:

- What has been observed between the plots?
- Which one looks better for your farm?
- Why do you think so?

#### Procedure.

PCE analysis sessions should be conducted for each enterprise. This session can be made in two steps, first identify criteria to evaluate PCE and secondly do the detailed analysis when the PCE is in the final stage of development (growth).

#### Question 1: What difference has been observed between the plots?

Step 1.

Ask each sub group to define their own criteria to evaluate the results (treated/new technique and control/ traditional) by comparison. Try not to interfere in the definition of those criteria. Those criteria are then put in a matrix as below.

#### Evaluation Criteria/Comparative (Examples)

- Labour
- Farm inputs/chemicals
- Total expense
- No. of plants dried/survival rate
- Health of plants / vitality
- Level of pest / termite attack
- Total yield
- Value of product
- Profit
- Quality of the product
- etc.

Comparison	Plot 1	Plot 2	Comment
Labour			
Water to the plants			
Fertilizer			
Manure			
Health of Plants			
Presence of pests			
Decision-making			
No. of application			
Quantity of food/chemical application			
No. of fruits			
Yield			
Profit			

## 3

## STEP 11

Step 2.

Once each group has their identified criteria, record the analysis for the plots as shown in the following matrix:

Evaluation Criteria	Plot 1	Plot 2	Plot 3	Comment
Yield				
Manure				
Fertiliser				
etc.				

Step 3.

Finally present in the plenary session and let the participants identify advantages and disadvantages of each plot and treatment. Each criterion must be analysed and noted in the column for comment. Discuss among the group why those results came about, and the benefit and disadvantage of each practice applied in the plots.

**Question 2: Which one seems more suitable for your farm?**

**Question 3: Why do you think so?**

Step 4:

Finally discuss how PCE and AESA are contributing to analysis and decision making.

**Question 4: How has PCE contributed to your conclusions?**

**Question 5: How has AESA contributed to your conclusions?**

**Note to facilitators:**

1. Prepare and conduct the visual (drawings) session together with the matrix, so that the analysis can be more visual and less quantitative. Fewer letters and numbers but more drawings are the key for good understanding for the benefit of farmers.
2. Define which parameters of comparison will be used in the picture: whether it is number or size. Try not to mix parameters, which may confuse farmers.



3. Prepare matrix paper, cards or materials before a session.
4. For this session you must review all materials developed by the farmers with regard to the target enterprise (PCE and AESA). Apart from existing data, you can add other criteria or observation such as health of trees or water contamination etc., if appropriate.
5. Be present throughout the session since at the end of the session farmers must be convinced which application of the criteria and principles of FFS will help them to manage their crop better.
6. Prepare PCE Analysis report (Annex 3 9 2).

## 3

# Cost Benefit Analysis Session

## STEP 11

## Objectives.

To help members to be aware of the cost implication of enterprises and to understand the importance of analysing expenditure and profit through simplified calculation exercises (reporting format is available in Annex 3 9 3).

## Considerations.

Analysis should be made enterprise by enterprise. You can prepare the matrices on newsprint in advance of the session.

## Procedure A. Summarising Yield and Profit.

Calculate input and output of the enterprise in a simplified way, using figures from the PCE.

### Step 1: Calculation of total expenditure.

Try to calculate how much you spend on each plot.

	Plot 1	Plot 2	Plot 3
Seeds	Ksh.	Ksh.	Ksh.
Manure	Ksh.	Ksh.	Ksh.
Fertiliser	Ksh.	Ksh.	Ksh.
Other farm input	Ksh.	Ksh.	Ksh.
Labour Cost*	Ksh.	Ksh.	Ksh.
Total	Ksh.	Ksh.	Ksh.

\*Note: Calculation of the labour cost is important but also complicated. If the difference in labour requirement between the plots is very small then it is better to neglect calculation of labour costs. If there is a significant difference in labour requirements then first estimate the number of labour days for each plot and then multiply by the local daily wage cost – even if the labour is provided by the farmer or his family without cost. This allows a value to be assigned to any extra labour inputs.

**Step 2: Calculation of the yield**

Measure how much yield you have got from each plot.

	Plot 1	Plot 2	Plot 3
Yield	Bags	Bags	Bags

**Step 3: Calculation of Gross benefit**

Calculate the total value of the products.

	Plot 1	Plot 2	Plot 3
Yield: from Step 2	Bags	Bags	Bags
Price per Bag*	Ksh.	Ksh.	Ksh.
Total Value: Gross profit (No. of Bags X Price/Bag)	Ksh.	Ksh.	Ksh.

\*Use the market price even if farmers do not sell the product.

**Step 4: Calculation of Net profit**

Calculate net profit subtracting total expenditure from gross profit.

	Plot 1	Plot 2	Plot 3
Total Value: from Step 3 (Bags X Price: Gross profit)	Ksh.	Ksh.	Ksh.
Total Expenditure: from Step 1	Ksh.	Ksh.	Ksh.
Profit: Net Profit (Gross Profit - Expenditure)	Ksh.	Ksh.	Ksh.

**Concluding Questions:**

**Question 1:** Which treatment needed more input?

**Question 2:** Which plot had the higher yield?

**Question 3:** Which plot resulted in the highest profit?

**Question 4:** Did the plots have any other advantages other than yield and profit?

Mention some:

**Question 5: Overall, which treatment option seems more suitable for your own farms?**

## 3

## STEP 11

**Procedure B. Quantification of Yield and Profit.**

If you think the members are capable and have enough time to conduct the session, then try to quantify the cost per acre/ha on the basis of each plot as follows:

**Step 1: Calculation of Plot Area.**

Calculate the total host farm area excluding protection area, and divide by the number of the plots. If farm size was 30 m X 20 m and you divided it in 3, so the area of one plot is 200 m<sup>2</sup>.

LENGTH X WIDTH = TOTAL PLOT AREA / NUMBER OF PLOT = PLOT AREA  
e.g. 30 m X 20 m = 600 m<sup>2</sup> / 3 plot = 200 m<sup>2</sup>

**Step 2: Find a coefficient for acreage.**

You can calculate a coefficient for acreage by calculating how many plots are able to fit within an acre.

e.g. 4,000 m<sup>2</sup> (1 acre) / 200 m<sup>2</sup> (plot size) = 20 times

**Step 3: Quantification of input and yield by acreage**

If you multiply any figure drawn from your plot calculation such as input, yield, value or profit by the above coefficient, you can get the quantified figure on a per acre basis.

FIGURE PER PLOT x COEFFICIENT = FIGURE PER ACRE

e.g. KSH. 1,200 (Input/plot) x 20 = KSH. 24,000 (Input/acre)

KSH. 3,000 (Value/plot) x 20 = KSH. 60,000 (Input/acre)

	Plot 1	Plot 2	Plot 3
Yield	Bags	Bags	Bags
Quantified Yield per acre (Yield x Coefficient)	Bags	Bags	Bags
Total Product Value	Ksh.	Ksh.	Ksh.
Quantified Value per acre (Value x Coefficient)	Ksh.	Ksh.	Ksh.
Cost/Expenditure	Ksh.	Ksh.	Ksh.
Quantified Cost per acre (Cost x Coefficient)	Ksh.	Ksh.	Ksh.
Profit	Ksh.	Ksh.	Ksh.
Quantified Profit per acre (Profit x Coefficient)	Ksh.	Ksh.	Ksh.

# Farm Self-Assessment Session

## 3

### STEP 11

#### Objectives.

To help group members to evaluate themselves through the changes that have occurred in their fields such as the number of seedlings produced, trees planted and yields. Project management and facilitators can check their adoption level and viable/appropriate techniques as well.

#### 1. Seedlings Production.

**Question 1: How many & what kind of seedlings were produced by the GROUP before and after FFS?**

Tree Species	No. of Seedlings produced Before FFS	No. of Seedlings produced During FFS
Avocado (Root Stock)	0	250
Avocado (Grafted)	0	30
Eucalyptus	0	50

**Question 2: How many & what kind of seedlings were PRODUCED by EACH MEMBER before and after FFS?**

Who	Tree Species	No. of Seedlings produced Before FFS	No. of Seedlings produced During FFS
Tom	Avocado (Root Stock)	0	50
	Avocado (Grafted)	0	40
Josephina	Caliandra	0	250
	Muvesi	0	25
	Mukau	0	10
Ali	Grevillea	20	120
	Eucalyptus	20	120

## 3

## STEP 11

**2. Tree Planting on Farm.**

**Question 3: How many & what kind of trees were planted on YOUR (EACH MEMBER'S) lands before and after FFS?**

Who	Tree Species	No. of Trees Planted Before FFS	No. of Trees Planted During FFS
Peter	Mukau	0	20
	Mango (grafted)	0	36
Mariam	Caliandra	0	120
	Marverry	0	80
	Mukau	0	5
Idi	Cordia	0	10
	Grevillea	20	80

**3. Crop Yield.**

**Question 4: How has CROP YIELD in YOUR (EACH MEMBER'S) agricultural lands been increased/decreased after FFS?**

Who	Tree Species	Before FFS		During FFS	
		Yield (bags)	Area (Acre)	Yield (bags)	Area (Acre)
Paul	Maize	4	1	5	1
	Beans	2	1	3	1
Joseph	Maize	6	2	14	2
	Pigeon Peas	1	1	2	1
	Sorghum	3	1	3	1
James	Millet	2	1	4	1
	Green Gram	1	1	1.5	1



#### 4. Changes in the Farm.

**Question 5: What differences can you observe in YOUR (EACH MEMBER'S) farm lands before and after FFS?**

Changes	Before FFS	During FFS
Maize Planting	At random (No proper spacing)	We put line before planting and plant 3 feet X 3 feet
Fertilizer	Never used because we thought it will destroy the soil	We apply one teaspoonful to each seed
Manure application	Just broadcast	Spot application when we sow the seeds
Farm observation	Approx. once per month	Almost every 3 days
Protection from livestock	Free grazing after harvesting	Fenced and protected whole year
Appearance of the farm in your community	Nobody cares	Neighbours start asking what I am trying

## 3

## Self Evaluation Session

## STEP 11

### Objectives.

In order to evaluate the level of empowerment and weakness, this session tries to help participants become aware and conscious of what they have gained throughout the FFS process and from FFS (reporting format is available in Annex 3 9 4).

### Question 1: What was your most exciting finding/experience in FFS?

Ask each member's personal impression of what they found most useful or interesting in FFS. e.g. "mango grafting would improve my farm", "I was really surprised how fast trees grow!" etc. and separate them into several categories on the newsprint.

Most exciting experiences
1.
#

### Question 2: What was your most disappointing experience in FFS?

Some people might be too shy to talk openly about their negative feeling about the FFS. You can ask members to write on cards and collect them for later discussion.

Most disappointing experiences
1.
#

### Question 3: Which kind of change have you observed in YOUR GROUP before and after FFS?

Changes	Before FFS	After FFS
1.		
#		

**Question 4: Which kind of change can you observe in YOURSELF before and after FFS?**

Changes	Before FFS	After FFS
1.		
#		

**Question 5: How do you evaluate FFS compared with previous extension services?**

Finally, ask members for an overall impression of Livelihood Farmer Field School and to evaluate the services through FFS in comparison to previous extension services (Very Good, Good, Fair, Bad, Very Bad) and report the result to HQ.

## 3

## Way Forward Session

## STEP 11

### Objective.

To help a group become aware of the need for planning for self reliance activities and to promote continuous group activities with PCE/FFS/IGA after graduation (reporting format is available in Annex 3 9 5).

### Procedure.

The facilitator should facilitate the group to conduct sub group sessions for the following four key issues and to discuss the way forward among themselves.

*Use the questions below as the guide for facilitation.*

#### 1. PCE/AESA

- Do you feel it is necessary to continue PCE and AESA? And WHY do you feel so?
- Are there any topics not yet covered or that need to be reinforced among the enterprises learnt?
- Do you have other enterprises that you would like to learn and try?
- Can you continue with PCE and AESA in your own farm?
- How will you manage to get the inputs for those PCE?

#### 2. Income Generation Activities (IGA)

- Will you continue with existing IGAs such as a tree nursery for fund raising?
- Do you feel that is enough?
- Do you want to start a new IGA such as poultry or goat keeping?
- How will you learn about that?
- Will you need some technical assistance or inputs?
- How can you get that technical support and who will pay for it?

#### 3. FFS

- Do you think it is necessary to continue with FFS sessions for PCE and IGA as conducted before?

- Why do you feel so?
- How will you organise your group? Same members? Same by laws? Will you meet weekly as it was before?
- How can you get a specialist for a special topic? How often will you ask them to come?
- How much will it cost?
- Will you pay for it?
- How do you finance those activities? By yourself or finding other sources of funds?
- How do you procure the materials and inputs?

#### **4. Other activities.**

- Do you have other ideas for group activities other than PCE/AESA/IGA/FFS?

#### **5. Preparation of Action Plan.**

After presentations by all sub groups, hold a group discussion to come up with a plan for the way forward after graduation and future proposals for action. Commitments by the participants are also important since the plan should be implemented.

#### **6. Comments & Recommendations.**

Finally provide the members with some suggestions and recommendation in relation to the plan for the way forward.





# Step 12 Field Day

## 3

### STEP 12

#### Purpose

- Provide the FFS members with an opportunity to display and share the results of their PCE and other experiences.
- Motivate neighbouring non member farmers with the result of new technologies demonstrated in the host farm and also empower/build self esteem of the group members by showing their good efforts.
- Reinforce cohesion among group members and raise awareness among other community members, the government and other organisations in the area in promoting FFS and receiving support.

#### Main Outputs

1. Field Day Reports

#### Time Estimate

**Three to five weeks**

#### Important Points

##### 1. Timing.

- Should be done when the PCE results are available for demonstration.
- Should be done as an FFS activity (one FFS day will be converted to a field day).

##### 2. Contents.

- Facilitators **should confirm**:
  - Group should be confident and willing to show their result of FFS to the neighbours.
  - FFS must believe **“There is something we want to show.”**
  - Facilitators must confirm **“There is something to be shown.”**

##### 3. Lack of Clear conscious of field day.

- Many members may find it difficult to understand the importance of field days. Explain clearly the purpose of

## 3

## STEP 12

Sequence of  
Activities

continued

a field day e.g. exposure to neighbours and improve of presentation skills of the members.

**4. Lack of Clear conscious of Field Day**

- Many members may find it difficult to understand the importance of field days. Explain clearly the purpose of a field day e.g. exposure to neighbours and improvement of presentation skills of the members.

**1<sup>st</sup> week****1. Planning (see page 210).**

- Preparation of a Field Day activity proposal.
- Initiate invitation for guests and publicity.

**2<sup>nd</sup> week****2. Procurement.**

- Purchase of required materials.

**3. Site preparation.**

- Allocation of duties and rehearsals.

**3<sup>rd</sup> week****4. Field day.**

- Implementation of Field Day.
- Typical Field Day Programme is as follows:
  - Arrival of visitors & registration
  - Host farm visit & demonstration
  - Assemble/prayer
  - Introduction
  - Presentation of learning result
  - Folk media/group dynamics
  - Speeches
  - Vote of thanks
  - Prayer
  - Refreshment/lunch
  - Departure



#### 4<sup>th</sup> week

##### 5. Compilation of the field day report.

- Preparation of Field Day Report through sharing experiences.

#### Special Topic

##### 1. Prior to the field Day.

- What is a Field Day?

##### 2. After the field Day.

- Experience sharing.

#### Lessons Learned

##### 1. Number of community participants.

- Invite government officials including the village chief who can officially to announce the event.

##### 2. Mobilisation of resources

- Funds needed to carry out a field day must be disbursed immediately after the planning is completed.

##### 3. Interests from community participants.

- After the field day, there are always people who wish to join FFS. It is recommended for them to form a group and wait for the next round of FFS.
- New members would not be accepted to join an ongoing FFS. They should undertake the full cycle of an FFS.

continued



#### 4. Poor attendance.

- Poor attendance is usually due to improper announcement and publicity.
- Interference from unexpected social events such as funeral and rains.

#### 5. Preparation.

Preparation of field days is not easy for the members. Facilitators need to support FFS members as much as possible.

#### Experience Sharing & Evaluation of Field Day

A wrap up discussion should be held after the Field Day either the same day or in the following FFS session. This is a good opportunity for experience sharing on the findings. Reflect on the Field Day experiences and ask “What was good and what was bad” for analysis of the Field Day. Evaluate the Field Day using the Field Day Report format below.

**Field Day Proposal** Date: \_\_\_\_\_

Name of the Group	District
-------------------	----------

**Date of Field Day**

**Place of Field Day**

Item	Quantity	Unit Price	Total	Responsibility
Cost covered by the Project		Ksh		
Cost covered by Groups		Ksh		
Total cost for enterprise		Ksh		

**Purpose of the Field Day**

**Key points to demonstrate at the Field Day**

**Name and signature of the Chairperson** **Date**

\_\_\_\_\_

**Comments from Facilitator**

**Signature of Field Coordinator** **Date**

\_\_\_\_\_





**Field-Day Evaluation Report by Group**

Date	Name of the Group	District	Community
Overall Results			
Attendance	No	Evaluation of Field Day Points: 1 - 10	Overall Comments What went well? What went badly?
Members			
Guest of Honour			
Visitors			
Total			
Reaction of Guests			
Enterprise 1	Evaluation Points: 1 - 10	Comments	
Enterprise 2	Evaluation Points: 1 - 10	Comments	
Enterprise 3	Evaluation Points: 1 - 10	Comments	
Comments of Facilitator			
Name and signature of the Chairperson			Date





# Step 13 **Preparing Project proposals with RuralInvest Module 3**

## 3

### STEP 13

#### Purpose

- Prepare project proposals with RuralInvest Module 3.

#### Main Outputs

1. Project Proposals
2. Memorandum of understanding between the project and farmer groups or loan agreements between a bank and farmer groups

#### Time Estimate

**3 to 8 weeks**

#### Important Points

1. **Skip this step if the project does not have RuralInvest Capacity.**
  - This step should be skipped if the project does not have RuralInvest capacity or offer support to FFS groups in preparing investment project proposals.
2. **Need to have a RuralInvest Technical Support Unit.**
  - Experience with RuralInvest has shown that the definition of 'Blocks' is often difficult for both farmers and facilitators. All projects using RuralInvest must have a RuralInvest Technical Support Unit (TSU) which can provide guidance and assistance as necessary to facilitators.
3. **Do not rush but provide constant backstopping to FFS groups in proposal preparation.**
  - The process of project proposal preparation can take a long time, depending on the amount of information which needs to be gathered. It might not be completed before the FFS graduation (Step 14).
  - Facilitators would need to provide backstopping and advice to groups preparing proposals with RuralInvest Module 3.

## 3

## STEP 13

continued

**4. Farmers should play the central role in preparing and reviewing the proposal.**

- Farmers can and should be involved in investigating and defining costs, prices, activities and other aspects of the proposed enterprise. However, the actual calculation of enterprise feasibility will require the use of a computer, and would normally occur at the local office of the parent project (or the home base of the facilitator if not a project employee). It is then the responsibility of the facilitator to print out and discuss the results of the analysis with the applicant group.

**5. Investment projects need to be linked with private sector.**

- This manual recommends that if groups are interested in income generation enterprises, it would be appropriate to provide them with loans rather than grants.
- It is often useful to develop financing mechanisms with private sector financing agencies under a Public Private sector Partnership (PPP).

**6. Scale-up of enterprises mean increasing risks of failures.**

- Investment for enterprise development is different from the FFS itself, which is conducted under a protected and minimum risk environment. Therefore, facilitators should respect the decisions of farmers in the selection of enterprises for investment – after all, it is farmers' responsibility. However, facilitators should provide as much advice and support in enterprise development investment as possible using the results of FFS.

**7. Composition and organization of groups for enterprise development.**

- Normally, FFS members will need to form several groups or clusters for enterprise development, as enterprise management becomes difficult with many participants.



**Sequence of  
Activities**

- The composition and organization of a group to carry out enterprise development has a major impact on the success of an enterprise. Thus, facilitators should not interfere in the composition/distribution of members.

**1<sup>st</sup> week****1. Review of results of the participatory evaluation and selection of the Group Project.**

- Compare results of the participatory evaluation with the Profile that was prepared in Step 3 (RurallInvest Module 2).
- Each group must decide on the type of enterprise to be developed and discuss the both the project objective and potential markets.
- Look at the RurallInvest Module 3 Data Gathering Formats (Annex 3 10) and exchange views on what is to be described in each format.
- Remember, the Module 3 formats are used only for collecting and organizing information; the actual calculations and analysis will have to be done on a computer by someone fully trained in Module 3.

**2<sup>nd</sup> week****2. Proposal Preparation with RurallInvest Module 3 Format.**

- Discuss and fill in the Beneficiary/Group Analysis and qualitative analysis sections. These may need to be modified again after all price, cost and other data has been collected.

**3<sup>rd</sup> week****3. Identification of investment and general costs.**

- Discuss and identify the items required for the investment itself and the expected general costs of the enterprise.
- Identify the group members responsible for investigating the unit cost of each investment item.

## 3

## STEP 13

continued

**4<sup>th</sup> week****4. Completion of Investment and general costs.**

- Complete the “Investment Costs” and “General Costs” formats.
- Review the total investment costs and determine whether the group would likely to be able to re pay the total investment amount if the capital is borrowed from a bank.
- Consider whether some purchased materials and items can be substituted by cheaper locally produced materials.
- Review whether the level of ‘own resources’ that the group would contribute to the project is too little compared to the total investment amount. For an income generating investment, it should be more than 20%.

**5<sup>th</sup> week and onward****5. Preparation of full proposals.**

- It may also be appropriate that the TSU review the estimates made by the groups and assist the facilitators to prepare the final analysis. Until all parties (farmers, facilitator and, if involved, TSU) agree, the proposal details may need to be revisited several times.

**6. Submission of proposals to the project.**

- Once approved by the applicants, the facilitator and the TSU, the proposal should be formally submitted for final review and approval at central level.
- Those proposals not supported by the project (TSU at the central level) would be returned to the group for further revision, until all comments from the TSU at the central level are reflected.

**7. Finalizing of Module 3 proposals.**

- Depending on the types of projects – whether the parent project itself directly finances the group project or whether the parent project just facilitates the groups



in accessing loans from banks, the accepted project proposals would be passed to the next step of preparing financing agreements.

- If the parent project finances the individual group projects using internal funds, a Memorandum of Understanding (MOU) would be prepared and signed (a sample is attached below).
- Proposals that were approved by the parent project but still required further modifications from the project partner bank would need to be revised again according to the comments from the bank.
- The groups that are getting loans from the bank would fill out a “Loan Application”.



**Sustainable Livelihood Development Project  
in the Mau Complex**

**Letter of Agreement  
on Procurement of Investment Items  
and  
Repayments to Kenya Forest Service through Equity Bank**

1. This agreement is jointly entered between Kenya Forest Service, the FAO Representative, and the group known by the following name.

FFS Name: .....

Registration Certificate No.: .....

District: .....

2. This agreement has been entered on a voluntary basis without any coercion and is for the procurement of investment items listed in the proposal and quotations attached to this Letter of Agreement (LOA). **The group members listed in Attachment 1 will procure the agreed investment items listed in Attachment 2. If the funds are not used for the purposes provided for in this agreement, FAO and KFS shall have the right to (i) terminate this LOA immediately (ii) stop all further assistance, (iii) obtain from the group full reimbursement of all disbursed funds within 30 days from the date of notice of the termination of the LOA.**

3. This agreement has the following conditions.

1. The group has the following responsibilities:

- Use the funds strictly for the procurement of the items specified in this LOA. The group under this LOA has to report to the field coordinator of the project when unit cost and numbers of procured items differ from the quoted price and the number.
- Submit proof of the procurement of the investment items (receipts and photos) to the field coordinator of the project within 30 days of the completion of procurement.
- All the procurement agreed in Attachment 2 have to be completed within 3 months after the receipt of the agreed amount.
- Maintain and submit an expenditure report to the project.
- Repay the loan to the designated account according to the repayment plan agreed with Equity Bank, including an interest rate of 1.25% per month on the borrowed amount.

2. **The Project has the following responsibilities:**

- Provide the agreed amount of funds through Equity Bank Account.
- Provide technical and managerial backstopping.
- Audit the procurement and use of the investment items.
- Monitor the enterprise activities financed by the project.

4. The present Agreement shall be governed by general principles of law, to the exclusion of any single national system of law.

5. Any dispute between FAO and the Group Members arising out of this Agreement shall be settled by mutual agreement. If the parties are unable to reach agreement, either party shall have the right to request arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL), as at present in force. FAO and the Group Members agree to be bound by any arbitration award rendered in accordance with the above, as the final adjudication of any such dispute.

**Signed.**

On behalf of the group		On behalf of KFS		FAO	
Name of Chairperson	Date	Name of Coordinator	Date	Name of Representative	Date
Signature		Signature		Signature	





3

STEP 13









# Step 14 Graduation

## 3

### STEP 14

#### Purpose

- To mark the end of the successful FFS learning cycle.
- To motivate the members to practice the knowledge they have acquired on their own individual farms.
- To celebrate the farmers achievements and acknowledge time taken by farmers.

#### Main Outputs

1. Farmer as experts
2. Award of certificates
3. Graduation report

#### Time Estimate

**Four weeks**

#### Important Points

##### 1. Graduation budget.

- Transport
- Lunch

##### 2. T-shirts.

- Under the ISFP, the FFS members were encouraged to organize themselves to purchase T shirts with their contributions as mementos of FFS and graduation.

##### 3. Logistics.

- Logistics is the most complex exercise. If the project organizes a collective graduation ceremony by inviting neighbouring FFSs to a designated venue facilitators may have to organize transport for the group members.
- Print the certificates and carefully verify the names of graduates.

##### 4. Arrangement & Preparation by group.

- Prepare:  
Presentation materials on learning results (Posters, AESA

## 3

## STEP 14

continued

charts, Result Analysis, etc.);  
 Folk Media/Dynamics;  
 Graduation clothing (T shirts, caps) (optional);  
 Presentation and Folk Media/Dynamics;  
 The venue (by the host group);  
 Tents and arrange chairs; and  
 Refreshment or lunch using the graduation budget allocated to each group.

#### 5. Sharing of experiences.

- The FFS graduation is not just a ceremony but also an opportunity for experience sharing.
- Visitors should be guided by a host member to share the experiences as much as possible.

#### 6. Promotion of FFS groups.

- Use the event for promotion of the FFS groups since village officials and many stakeholders are also invited to attend.
- Follow up activities may be proposed by other donors, NGOs or key stakeholders.

#### 7. Participatory evaluation (final sessions) reports.

- Prior to the graduation ceremony, the group must complete a Participatory Evaluation (Final Sessions) so they can present their achievements during the graduation.

### Sequence of Activities

#### 1<sup>st</sup> week

##### 1. Evaluation and confirmation of qualification.

- Confirm eligibility to graduate from the attendance list.
- Members who have failed to attend 70% of all sessions would not qualify for graduation.

#### 2<sup>nd</sup> week

##### 2. Planning for graduation.

- Confirm fund availability.

- Date setting for graduation.
- Identify graduation venue.
- Notify the graduates.
- Prepare a graduation programme.
- Invite guests.

### 3<sup>rd</sup> week

#### 3. Preparation.

- Set the venue (by the host group).
- Prepare a list of graduates.

### 4<sup>th</sup> week

#### 4. Graduation.

- See “Proposed Time Table for FFS Graduation”
- Complete the graduation report.



continued

### **Organizing the Graduation Ceremony**

A graduation marks the end of a successful FFS learning cycle. Unlike many other extension approaches, FFS has a very clear end to the programme. This leads to the farmers' conscious change to become self-reliant. Through well-managed FFS sessions, dependency is often no longer an issue for many graduates.

The graduation ceremony is usually organised by the farmers, facilitators and the coordinating offices, not by the field coordinator. It is also a forum to pass on the lessons learnt during the FFS to the public; similar to the field days. The harvest obtained from PCE will be displayed, and FFS participants dramatise (using folk media) all lessons learnt at the FFS. Participants are awarded a certificate by the supporting agency/programme. At the same time, other community members will be attracted and may develop an interest to join the next planned FFS in their locality.

### Visiting the Host Farm



### Presentation of Learning Results



### Presentation of Group Dynamics/Folk Media



## 3

## STEP 14

## Proposed Time Table for FFS Graduation

Time	Topic
9:00	FFS Groups Assemble
9:15	Registration
10:00	Opening
10:00	Prayers
10:05	Visiting Host Farm
10:15	Presentations of Groups
11:00	Group Dynamics
11:15	Speech <ul style="list-style-type: none"> <li>■ FFS Representative</li> <li>■ District representative</li> <li>■ Provincial representative</li> <li>■ Project team representative</li> </ul>
11:45	Guest Speech <ul style="list-style-type: none"> <li>■ Local leaders: Chief, Councillors, District officers, District commissioner etc</li> <li>■ Chief Guest</li> </ul>
12:15	Presentation of Certificates
12:30	Vote of Thanks
12:45	Refreshments
13:00	Prayers
13:15	Departure



## Graduation Report

Date: \_\_\_\_\_

Date		Venue		District	
Starting Time		Ending Time		Total Participants	Persons

## Attendance

	Group Name	Graduates Attended	Total Member Attended
Graduated Group	1.		
Graduated Group	2.		
Graduated Group	3.		
Graduated Group	4.		
Graduated Group	5.		

## Key Guests

	Designation		Designation
Guest 1		Guest 5	
Guest 2		Guest 6	
Guest 3		Guest 7	
Guest 4		Total Number of Guest Attended	

## Observations / Findings / Comments

Ceremony Arrangement in general
Group Presentations
Guests Speech
Others

Name and signature of the Facilitator

Date

\_\_\_\_\_

\_\_\_\_\_

## 3

## STEP 14

## Example of Graduation Certificate







# Annex 1. Enterprise Catalogue

# Livelihood Farmer Field Schools Enterprise Catalogue



SUSTAINABLE LIVELIHOOD DEVELOPMENT  
PROJECT IN THE MAU FOREST COMPLEX

## About this Enterprise

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This catalogue has been prepared for Livelihood Farmer Field Schools (LFFS) under TCP Sustainable Livelihood Development in the Mau Forest Complex. Each menu represents a learning enterprise package, which consists of the benefit, cost estimate, remarks, period for establishment and management, possible layout with illustrations and some pictorial images. Most of the learning options are designed in combination with income generating or livelihood support activities to attract farmers' interest in participation.

The group members are expected to select their LFFS learning enterprise from this Activity Catalogue and develop a learning plan after conducting the "Learning Expectation Session". Please read the enterprises carefully and discuss among the members which option might be the most appropriate in your area and worth trying through LFFS. This catalogue may help the members to learn some possible solutions for livelihood improvement and environment conservation which they can practice on their own farms in parallel to the learning process.

11<sup>th</sup> March, 2010

James M. Kimondo  
& Shinji Ogawa



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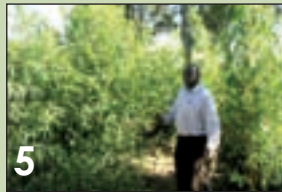




# How to select Learning Enterprises

## Step 1

**Select Forestry  
Related Enterprise**  
From the options



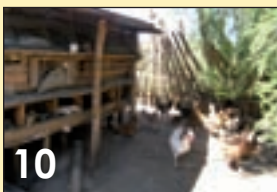
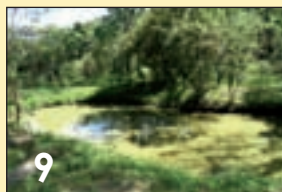
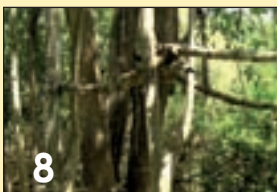
**Select Tree  
Nurseries**



Since you need  
seedlings

## Step 2

**Select Livelihood  
Improvement  
Enterprise**  
From the options



**Identify Your  
Learning Enterprise  
for LFFS**

# 1. Wood Lots for Timber



**Grevillea wood lot**

## Cost Estimate [an example]

Requirement	Quantity	Unit Price (Ksh.)	Total
Seedlings of Species 1	9 + (1)*	10/seedling	100
Seedlings of Species 2	9 + (1)*	10/seedling	100
<b>Option 1 (Fertiliser Testing)</b>			
Seed of Food Crop (Common)	1.2 kg	50	60
Fertilizer	5 kg	50	250
Manure	15 debes	Local collection	
<b>Option 2 (Variety Testing)</b>			
Seed of Food Crop (Improved)	0.6 kg	250	150
Seed of Food Crop (Common)	0.6 kg	50	30
Total with Option 1			510
Total with Option 2			380

\*for replacement

## Benefit

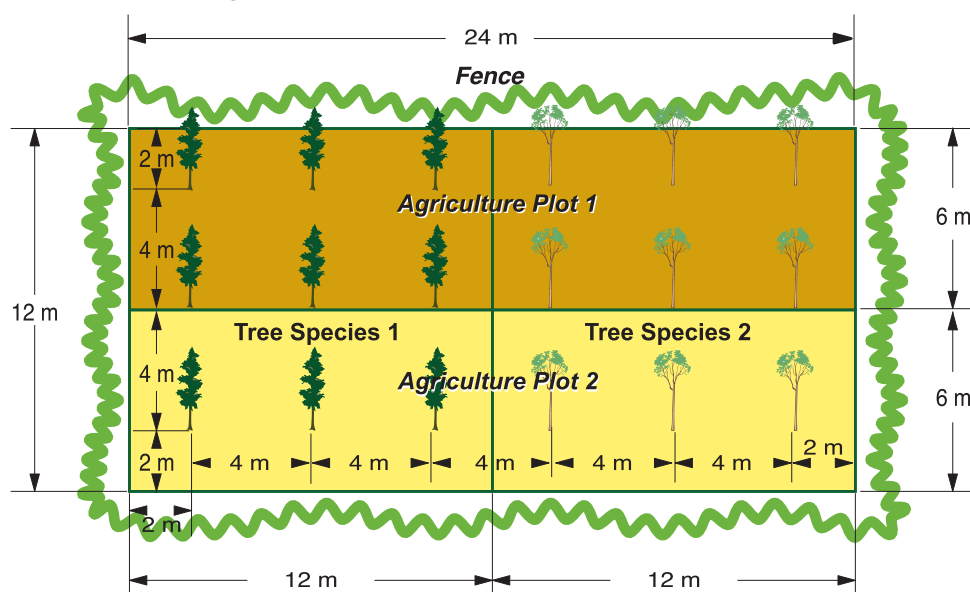
- Provision of timber after 12–20 years for domestic use and income generation.
- Soil is continuously covered and protected against erosion.
- Farmers could produce food crops for one to two years until trees cover the land.
- Provision of firewood from pruning and thinning from woodlot.
- Provision of fodder by some species like Grevillea.

## Remarks

- Seedlings can be produced in nurseries, if the nursery enterprise has been selected by the group.
- No more intercropping two to three years after the establishment of wood lot.
- After tree establishment there is no income up to the time the trees are harvested.

## Possible PTD Design

Species Testing with Crop Experiment



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation	1–2 days
Planting	1 days
Monitoring	Every 4 weeks
Tinning	After 5–6 Years
Harvesting	After 12–20 Years



## 2. Wood Lots for Poles & Firewood



**Eucalyptus tree planting**

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Seedlings of Eucalyptus	9 + 36 + (5)*	10/ seedling	500
Seed of Food Crop (Improved)	0.6 kg	250	150
Total			650

\*for replacement



## Benefit

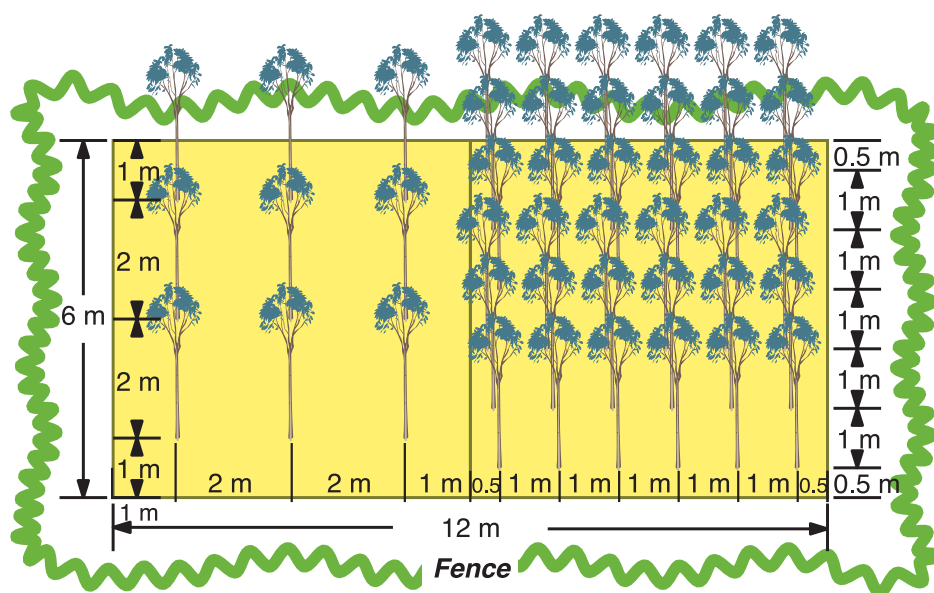
- Provision of construction poles and firewood for household use or sale to the existing market.
- Generation of income within a short period (3 to 5 years) if the products are sold to the market.
- Farmers could produce food crops for the first year if trees are planted in wider spacing.
- Stumps will protect the land continuously if coppicing species like Eucalyptus are planted.

## Remarks

- Seedlings can be produced in the nurseries, if the nursery enterprise has been selected by the group.
- After one year, the tree crowns will interfere with crop production – no more crops planting.

## Possible PTD Design

Species Testing with Crop Experiment



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation	1 2 days
Planting	1 days
Monitoring	Every 4 weeks
Harvesting	After 3 4 Years

## 3. Fruits Orchard



**Eucalyptus tree planting**

Cost Estimate (an example)			
Requirement	Quantity	Unit Price (Ksh.)	Total
Fruit Seedlings (Variety 1)	3 + (1)*	150	600
Fruit Seedlings (Variety 2)	3 + (1)*	150	600
Fruit Seedlings (Variety 3)	3 + (1)*	150	600
Manure	4.5 bags	Local Collection	
Option 1 (Fertiliser Testing)			
Seed of Food Crop (Common)	3.6 kg	50	180
Fertilizer	15 kg	50	750
Manure	455 debes	Local collection	
Option 2 (Variety Testing)			
Seed of Food Crop (Improved)	1.8 kg	250	450
Seed of Food Crop (Common)	1.8 kg	50	90
Total with Option 1			2,730
Total with Option 2			2,340

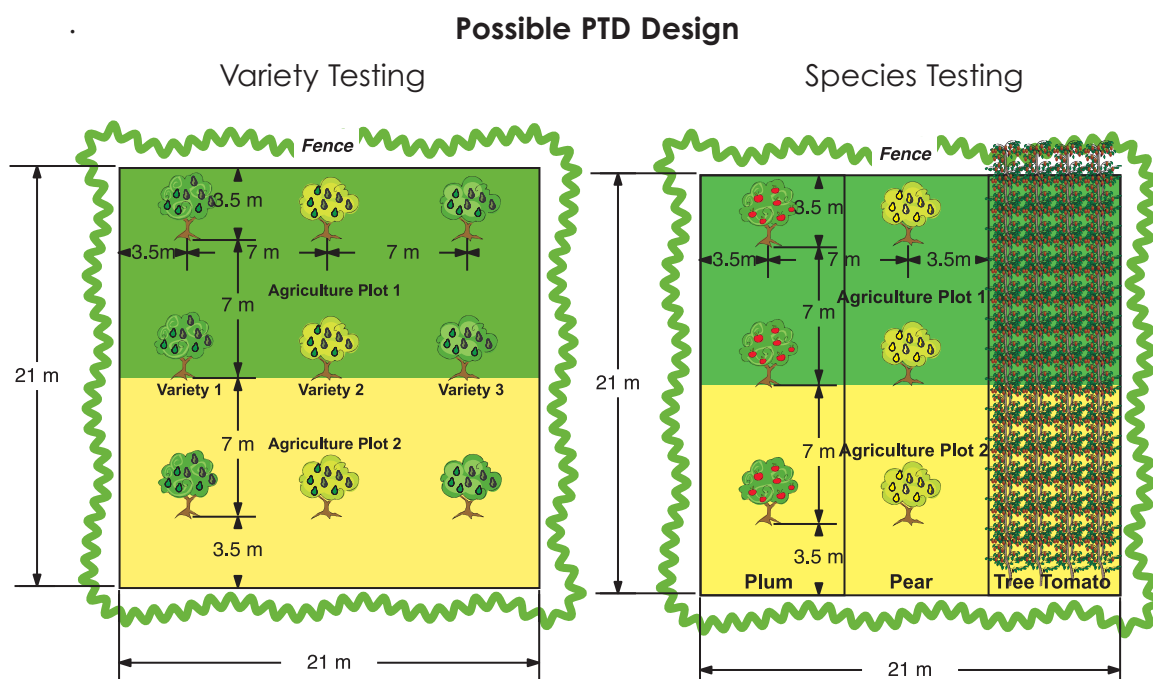
\*for replacement

## Benefit

- Provision of fruits within a short period (2-3 years) if the fruit trees are grafted.
- Distribution of income throughout the year if there are several varieties planted.
- Provides nutrients and vitamins to the household from the fruits.
- Combined crops provide food at same time.
- Provision of scions for grafting to expand orchard.

## Remarks

- Fencing of Fruits Orchard is necessary for protection against animals.
- They require intensive care for pests and diseases and require fungicides and pesticides especially during flowering and fruiting.
- Spacing of trees varies depending on the species (Consult a Specialist).



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation	1 days
Planting	1 days
Monitoring	Every 4 weeks
Harvesting	After 3-5 Years

## 4. Fodder Bank for Livestock



Provision of fodder

Silk worm production

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Fodder Tree Seedlings (Species 1)	30	10 / seedling	300
Fodder Tree Cuttings (Species 2)	30	10 / seedling	300
Fence	36 m	Local material	
Total			600



## Benefit

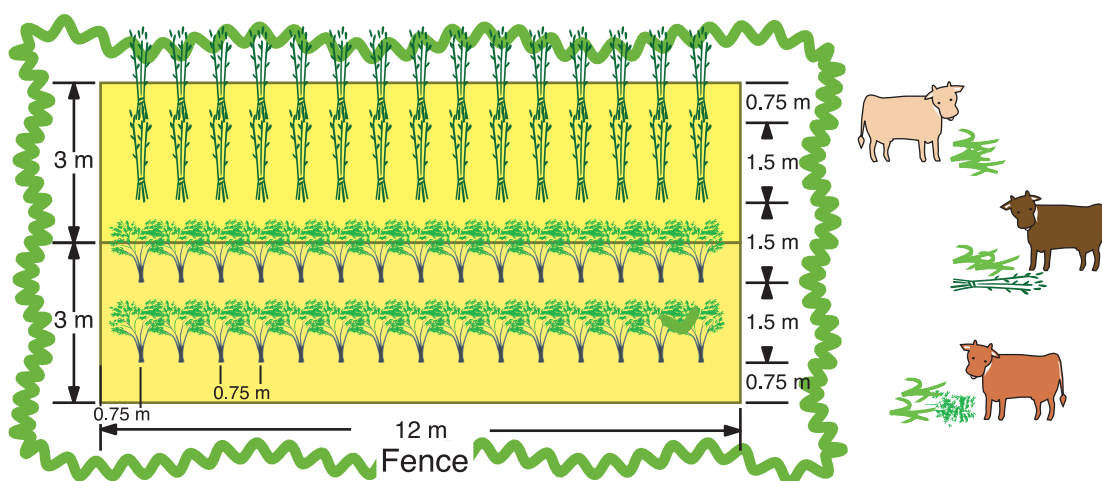
- Provision of fodder for livestock in dry season after 2 to 3 years.
- Protection of slopes, river banks or farm boundaries with fodder tree species.
- In case mulberry trees were planted, provision of feed for silk worm for silk production in future (Comprehensive training necessary).

## Remarks

- Fodder tree seedlings such as Mulberry, Calliandra, Sesbania, Leucaena can be produced in the nurseries.
- Mulberry seedling can be produced vegetatively from cuttings.
- Trees planted must be fenced permanently but more especially in early stage of establishment.
- In case of Sesbania, trees have to be replanted after 3 4 years.

## Possible PTD Design

### Species Testing



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation	1 days
Planting	1 days
Monitoring	Every 4 weeks
Harvesting	After 2 3 Years

## 5. Bamboo Planting



Bamboo planting after three years



Bamboo Seedlings



Bamboo baskets

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Native Bamboo Seedlings	8	100	800
Exotic Bamboo Seedlings	8	100	800
Seed of Food Crop (Common)	1.0 kg	50	50
Manure	2 bags	Local Collection	
Fence	64 m	Local material	
Total			1,650

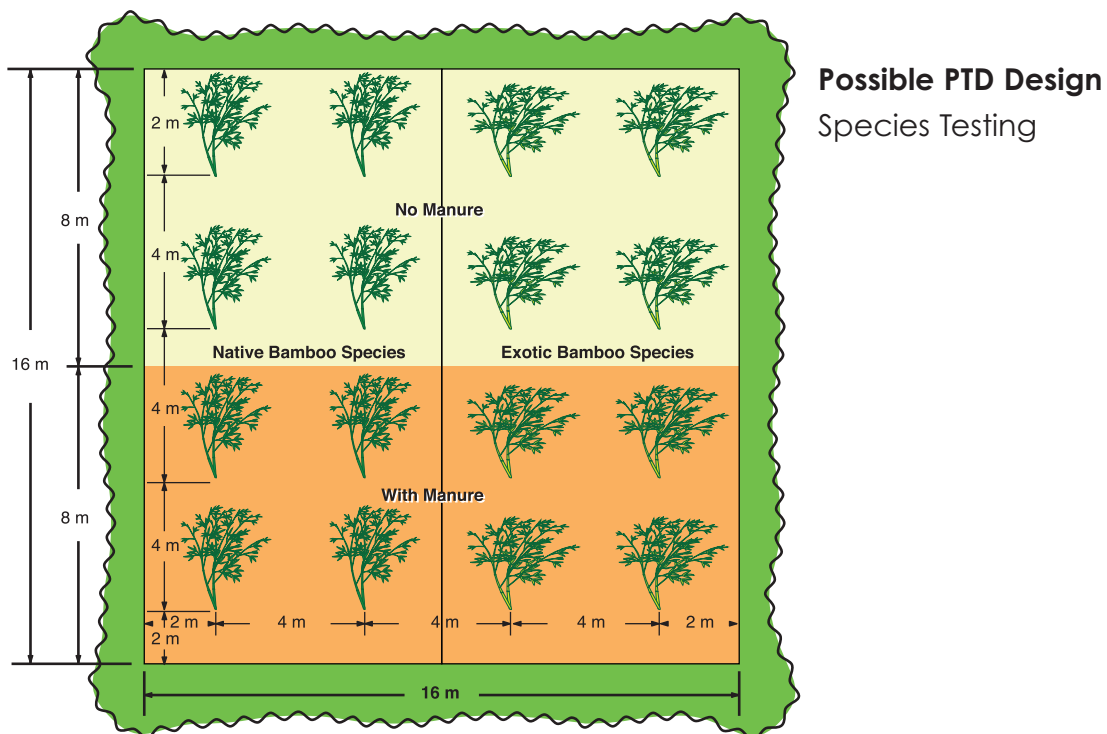


## Benefit

- Production of bamboo materials for both domestic and industrial use after 4 to 8 years.
- Soil and land conservation in steep areas.
- Production of fodder in dry period when the bamboos are well established.
- Employing appropriate harvesting method, replanting will not be necessary for a very long period.

## Remarks

- Seedling can be produced in the nursery, if the nursery enterprise has been selected by the group.
- Fencing of the bamboo planted area is crucial since they are very palatable to animals.



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation	1 day
Planting	1 day
Monitoring	Every 4 weeks
Harvesting	After 3 5 Years

## 6. Tree Nurseries



**Eucalyptus tree planting**

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Seeds of various tree species			1,500
Polythene tubes (small)	2,000	0.4	800
Polythene tubes (big)	500	0.6	300
Nursery Soil	32 bags	Local Collection	
Forest Soil	12 bags	Local Collection	
Compost Manure	8 bags	Local Collection	
Sand	12 bags	Local Collection	
Jembe *	2	180	360
Spade *	2	250	500
Panga *	2	150	300
Soil sieve	2 m	200/m	400
Watering Can	2	300	600
Fence	40 m	Local material	
Fungicide	200g	350	350
Insecticide	200ml	Herbal Medicine	
Secateurs	2	500	1,000
Knife	5	Local material	
Scion	350	5	1,750
<b>Total</b>			<b>7,860</b>

\* Use existing farm implements as much as possible to reduce the cost.

## Benefit

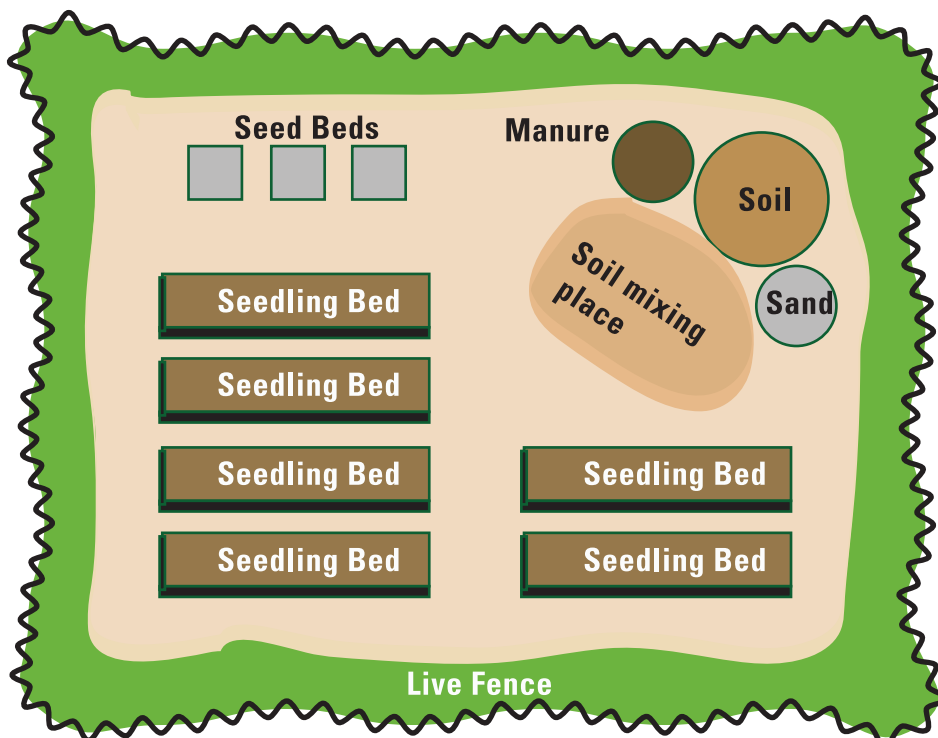
Whichever forestry related enterprise you take, tree seedlings will need to be produced. Although a small scale nursery requires daily care and constant supply of water, it is easy to start and manage, and has the following advantages:

- Members can raise the required species.
- It may supply seedlings at low cost and close to the planting sites
- It may act as an income generating activity if the seedlings are sold.

The table on the left, which estimates nursery materials may help members to calculate the total amount of required fund for establishment.



### Possible Layout



## 7. Home Garden



Home garden with several types of vegetables



Cabbage



Snow Pea

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Seeds of Vegetable 1	50 g	500/250g	100
Seeds of Vegetable 2	50 g	750/250g	150
Seeds of Vegetable 3	1 Kg	50/Kg	50
Seeds of Vegetable 4	2 Kg	50/Kg	100
Manure	4 bags	Local Collection	
Fungicide	200g	350	350
Insecticide	200ml	Herbal Medicine	
Fence	32 m	Local material	
Total			750

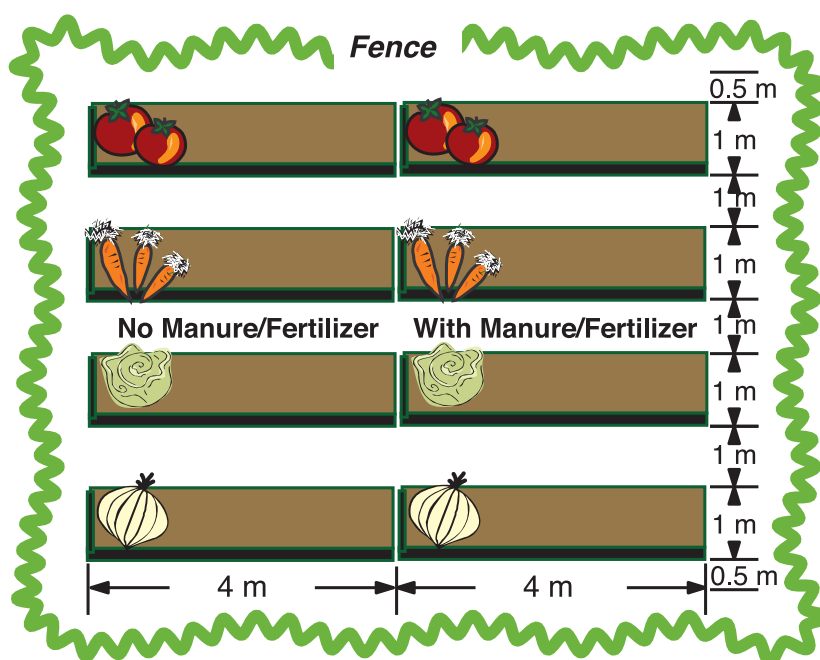
## Benefit

- It can be started on a very small piece of land.
- It provides food (vegetables, tubers, fruits, herbs, spices, etc.) and improves nutrition.
- Generation of income within a short period (3 to 8 months) if harvest is sold to the market.

## Remarks

- They require intensive care to control pests and diseases sometimes through use of fungicides and pesticides.
- Fencing of all of the planted area is necessary.
- It is also good to conduct a market price survey.

## Possible PTD Design



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation	1 day
Planting	1 day
Monitoring	Every week
Harvesting	After 3 8 months



## 8. Beekeeping



A FFS apiary with several types of hives

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Langstroth Beehive	1	4,000	4,000
Kenya Top Bar Hive or Box Hive	1	2,500	2,500
Local Beehive	2	500	1,000
Wire mesh (Queen Excluder)	1 m	200	200
Hanging Wire	10 m	20	200
Treated Posts	3	200	600
Suits	1	4,000	4,000
Smoker	1	1,000	1,000
Beehive Tool	1	350	350
Gum Boots	3	900	2,700
Torch	1	200	200
Total			16,750



## Benefit

- Provides honey for consumption and sale.
- Requires little labour input after installation.
- Gives quick returns on investment.
- Improves cross pollination of surrounding plants and crops thus increasing production.

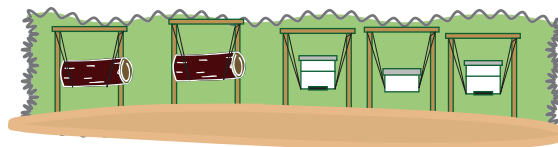
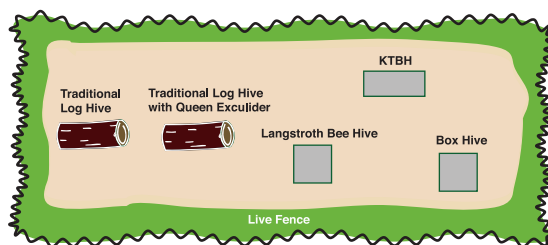
## Remarks

- Initial cost of establishment and accessories is high.
- Requires enough experience in proper management of bees, apiary and honey harvesting and processing.



Improved log hive with queen excluder

## Possible PTD Design



Langstroth & Box type Bee hives



Snow Pea

## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land preparation	1 days
Hive setting	1 days
Monitoring	Every week
Harvesting	After 3 5 months

## 9. Fish Farming



**Small fish pond prepared for fish farming**

### Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Fingerlings of Tilapia	80	3	240
Fingerlings of Catfish	8	5	40
Feeds (Initial)	50 Kg	30	1,500
Fish Net	4	200	800
<b>Total</b>			<b>2,580</b>

If you employ manual labour for digging the fish pond, it will cost around 12 man/day (12 MD x 300 = Ksh. 3,600)

## Benefit

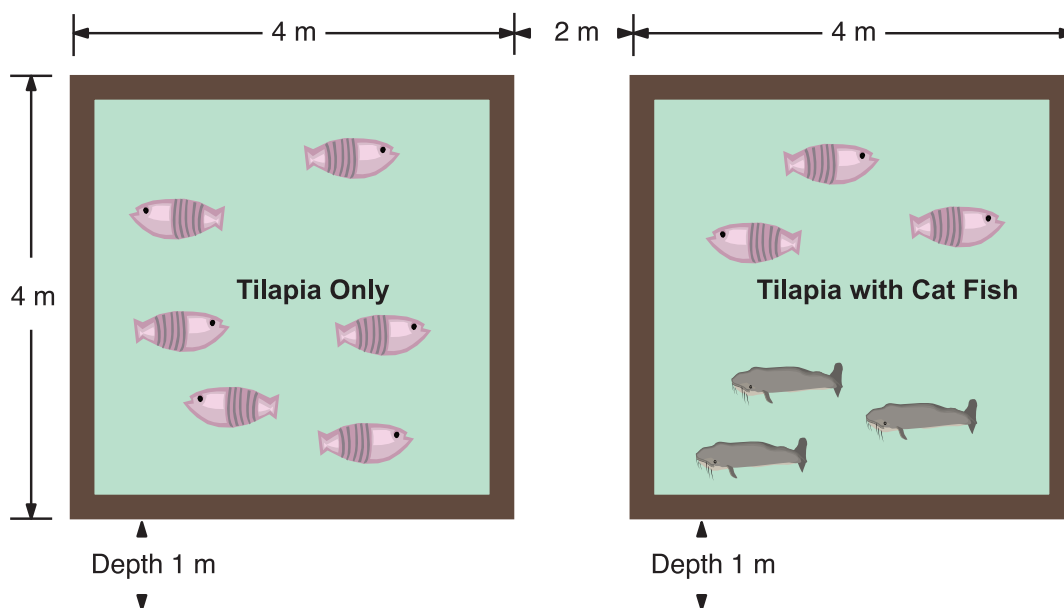
- Provision of food and source of protein.
- Generation of income within a short period (8 to 12 months) if the product is sold in the market.
- Requires little labour input after installation.
- Fish can feed on larvae of harmful insects like mosquitoes.

## Remarks

- In case of porous soil, use of plastic sheet at the bottom and sides of the ponds is recommended.
- Fingerlings have to be carefully sourced.
- It is recommended that fingerlings from other sources be added after 2 years to revitalise productivity.

## Possible PTD Design

- Compare size of different fish species if their fingerlings are available.
- Compare different feeding practices (Traditional and Concentrated).



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Land marking & preparation of ponds	3 days
Releasing	1 day
Monitoring	Every week
Harvesting	After 8-12 months

# 10. Poultry Keeping



**semi-caged**

**Free**

## Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Day old chick (Grade)	20	70	1,400
Chick (Local)	20	30	600
Housing Material			500
Wire mesh	8 m	200	1,600
Feeders	2	200	400
Drinker	2	200	400
Drugs & Vaccines			1,200
Feed (Initial)	70 kg	50	3,500
<b>Total</b>			<b>9,600</b>

## Benefit

- Provides meat/eggs for consumption and sale.
- Requires little labour input.
- Gives quick returns on investment.
- Poultry manure provides good fertilizer and animal feed.

## Remarks

- Diseases eg NCD, Typhoid & coccidiosis have to be taken care of.
- Requires daily monitoring for feeding, watering and collection of eggs, thus a full time assignment of members.

## Possible PTD Design

- Compare the period until initial egg production between Local and Grade chicken.
- Compare the production of eggs between free, semi caged and fully caged chicken.
- Compare the two different types of feeds on both Local and Grade chicken.
- Compare the frequency of egg production and price of eggs from Local and Grade chicken.

## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Preparation	2 days
Monitoring	Every week
Production	After 6 8 months



# 11. Dairy Animal Management

(only in case the group provides animals)



## Cost Estimate (an example)

Requirement	Quantity	Unit Price (Ksh.)	Total
Cuttings of Napier Grass	216	5	1,080
Seeds of Rhodes Grass	2 kg	600	1,200
Fertilizers	6 kg	50	300
Housing Material		Host farmer's Cost	
Drugs, Mineral licks, Vaccines, Acaricides		Host farmer's Cost	
<b>Total</b>			<b>2,580</b>



## Benefit

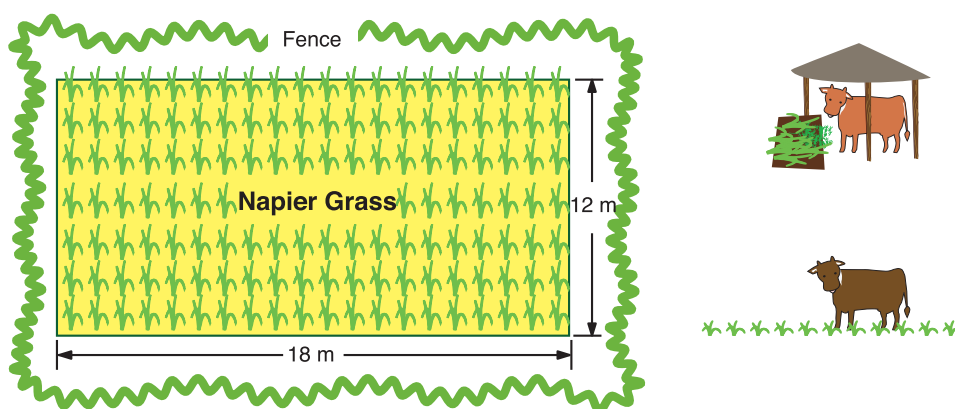
- Better milk production in quantity and quality.
- Zero grazing allows use of limited space.
- Good source of manure for crops and fodder production.
- Animal is confined hence no need to roam around.

## Remarks

- Use member's existing livestock as host animals.
- Use existing livestock keeping structure or construct small paddocks or zero grazing unit if required.
- Fodder bank should be established nearby (with Napier Grass or/and Rhodes grass).
- Simple silage practice can be introduced to ensure availability of animal feed during dry period.
- Need to have adequate water nearby and hygiene is of outmost importance.
- Highly labour intensive.

## Possible PTD Design

- Compare the milk production before and after start of feeding animals with cut and carry fodder grass.
- Compare health of animals before and after feeding animals with cut and carry fodder grass.
- Compare the workload or labour needed before and after start feeding with cut and carry fodder grass.



## Establishment & Management Period

Activities	Duration
Planning & Designing	1 day
Preparation	1 day
Planting	1 day
Monitoring	Every week



## Annex 2. Study Guide

# Livelihood Farmer Field Schools Enterprise Study Guide



SUSTAINABLE LIVELIHOOD DEVELOPMENT  
PROJECT IN THE MAU FOREST COMPLEX

## About this study guide

---

This Study Guide has been prepared for Livelihood Farmer Field Schools (LFFS) under TCP Sustainable Livelihood Development in the Mau Forest Complex. Each activity or enterprise represents a learning package, which consists of the objectives, materials, possible layout, procedure and questions to discuss.

Most of the learning options are designed in combination with income generating or livelihood supporting activities to attract farmers' interest in participation.

The group members are expected to select their LFFS learning enterprise from the Enterprise Catalogue and develop learning plan after conducting "Learning Expectation Session". Please, read the menu of enterprises carefully and discuss among the members which option might be most appropriate enterprises in your area and worth trying through LFFS. The catalogue is supposed to help members to discover some possible solutions for livelihood improvement and environment conservation.

The emphasis of this guideline is on self guiding as it is written in simple straight forward language for both technical staff as well as the farmer facilitators. The implementation of this guideline will improve the performance of different groups and provides a diversity of options for the farmer field schools not only in the project area but in other areas as well.

11<sup>th</sup> March, 2010

James M. Kimondo  
& Shinji Ogawa

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# 1. Wood Lots for Timber

## Objectives

In this trial you will compare the performance of two timber species planted with agricultural crops at a moderate spacing and crop yields during the first one or two years.

## Material

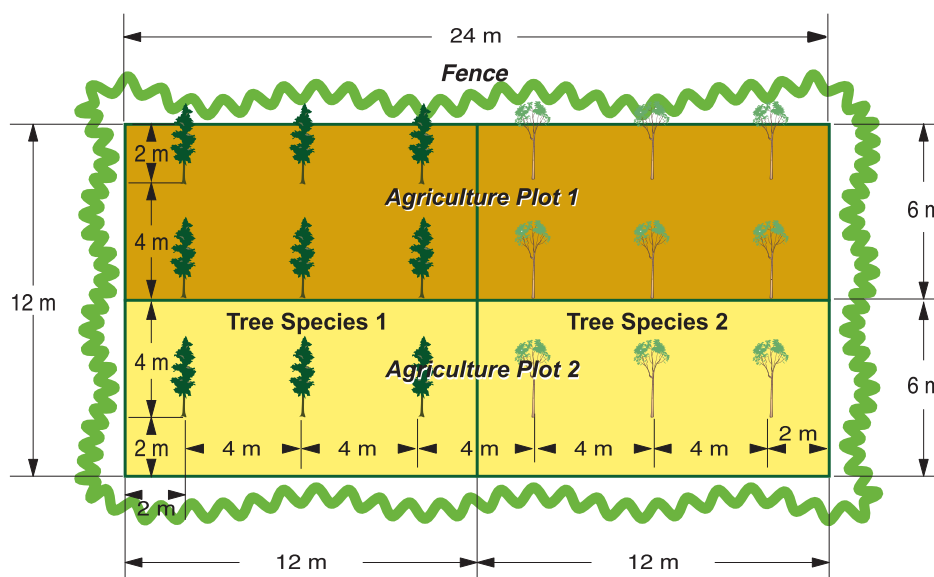
Implements for land preparation and cultivation, supply of maize/sorghum/millet seeds, seedlings of species 1 and species 2 as chosen by the group, sticks, tape measure, ruler, string, note books and pencil.

## Layout

Implements for land preparation and cultivation, supply of maize/sorghum/millet seeds, seedlings of species 1 and species 2 as chosen by the group, sticks, tape measure, ruler, string, note books and pencil.

## Procedures

1. Select a piece of land measuring 24m by 12m with relatively uniform soil characteristics on a flat or gently sloping area. This land should be provided by one member of the group – the “host farmer”.
2. Prepare the land by clearing of bushes and shrubs before the rain season starts. The land should also be ripped using an oxen plough to increase infiltration of rainwater.



3. Divide the plot into two equal plots of 12m by 12m for the two (2) tree species before the rains start as shown in the layout above.
4. At the same time, divide the plot perpendicular to the first division into two equal plots of 24m by 6m for agriculture crop testing: you can compare a new variety of maize against local variety; one crop variety with manure and without; or one crop variety with fertilizer and without.
5. Stake out the two plots at a spacing of 4m by 4m before the rains start.
6. Dig tree planting holes measuring at least 30cm by 30cm wide and 30cm deep.
7. Before the onset of the rains, identify a source of seedlings of the selected species, purchase and deliver them near the planting site.
8. Construct fences surrounding the plot. This is done to ensure that the whole plot is protected from animals even after harvesting of crops.
9. After the onset of the rains, plant the tree seedlings of the two selected species as early as possible so that they can take advantage of the rains for a long period.
10. Plant the agricultural crop for the trial selected. Use the recommended by agriculture extension officers in your area for spacing between rows, and seeds in a row.
11. Weed the plot according to normal farming practice. Oxen ploughs should be used to plough the land between crops to improve water infiltration and its subsequent conservation.
10. At regular intervals during the season, monitor crop and tree growth i.e. tree survival, tree damage, tree height, crop length, number of live and dead leaves and record the observations of at least three (3) maize plants in each of the four plots of 12m by 6m. Observe pests and diseases both in trees and crops.
13. When the crops are ready, the group should meet and agree on the day to harvest.
14. From each of the four plots of 12m by 6m harvest carefully each plot separately and measure the yields from each plot and compare the yields.
15. Compare the survival and height of the two tree species selected.

### Questions to discuss

- Was there a crop yield difference between the different plots?
- Was there any difference in tree height growth and survival between the two selected species in year one and year two?
- Were there any advantages and/or disadvantages of intercropping each tree species with food crops?
- What were some of the problems encountered in the establishment and management of the woodlot?

## 2. Wood Lots for Poles and Firewood

### Objectives

In this trial, you will compare the performance of a wood fuel species planted at two different spacings. Agricultural crops like beans can be planted in both plots at different spacing to compare the yields during the first year.

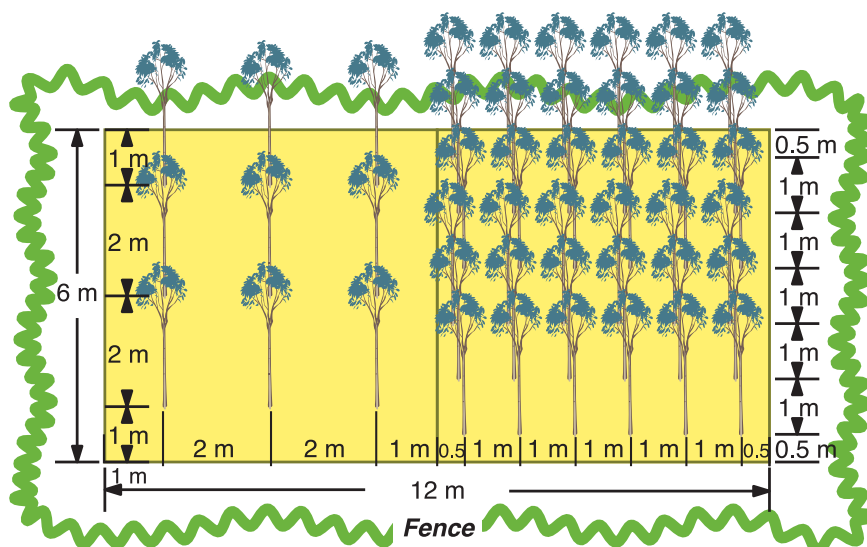
### Material

Implements for land preparation and cultivation, supply of beans, seedlings of wood fuel species as chosen by the group, sticks, string, tape measure, ruler, pencil and note books

### Layout

### Procedures

1. Select a piece of land measuring 12m by 6m with relatively uniform soil characteristics on a flat or gently sloping area. This land should be provided by one member of the group – the “host farmer”.
2. Prepare the land by clearing the bushes and shrubs before the rainy season starts. The land should also be ripped using an oxen plough to increase infiltration of rainwater.



3. Divide the plot into two equal plots of 6m by 6m for two (2) tree species before the rains start as shown in the layout above.
4. At the same time, divide the plot into two equal plots of 6m by 6m for agriculture crop testing, you may compare: a new variety of maize against local variety; one crop variety with manure against without; or one crop variety with fertilizer against without.
5. Stake out one plot at a spacing of 2m by 2m and the other at 1m by 1m before the rains start.
6. Dig tree planting holes measuring at least 30cm by 30cm wide and 30cm deep.
7. Before the onset of the rains, identify where seedlings of the selected species are available, purchase and deliver them near the planting site.
8. Construct fences surrounding the plot. This will be done to ensure that the whole plot is protected from animals for a long period after harvesting of crops.
9. After the onset of the rains, plant the tree seedlings of the two selected species as early as possible so that they can take advantage of the rains for a long period.
10. Weed the plot according to normal farming practice. Oxen ploughs should be used to plough the land between crops to improve water infiltration and its subsequent conservation.
11. At regular intervals during the growing season, monitor crop and tree growth i.e. tree survival, tree damage, tree height, crop height, number of live and dead leaves and record the observations of at least three (3) maize plants in each plot of 24m by 6m. Observe pest and disease both in trees and crops.
12. When the crops are ready, the group should meet and agree on the day to harvest.
13. From each of the two plots of 6m by 6m, harvest carefully each plot separately, measure the yields from each of the plot and compare the yields.
14. Compare the survival and height of the two tree species selected.

### Questions to discuss

- Was there a crop yield difference between the two plots?
- Was there any difference in tree height and survival between species 1 and species 2 after one and two years?
- What were some the problems encountered in the establishment and management of the woodlot?
- Were there any advantages and/or disadvantages of intercropping each tree species with food crop?

## 3. Fruit Orchards

### Objectives

In this trial you shall test the performance of different varieties of fruits e.g. avocados or citrus in terms of size and quality of fruits, the flowering and fruiting time, and pest and drought resistance.

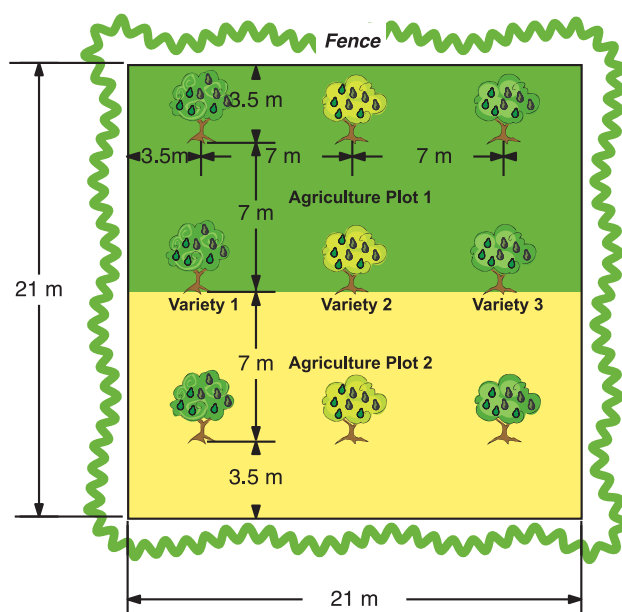
### Material

Implements to prepare the land and undertake cultivation, seedlings of different grafted avocado varieties, maize/sorghum/millet and bean/green gram seeds, notebooks, pencils and measuring tapes to be obtained.

### Layout

#### Procedures

1. Select a relatively flat field of 22 by 22 metres.
2. Before the start of the rains, clear the land of bushes and shrubs. This should also be ripped using an oxen plough to increase infiltration of rainwater.



3. Mark the planting points at a spacing of 7m by 7m in 21m by 21m plot so that the plot has 9 fruit trees. Dig holes of 90cm by 90cm by 90 cm for the planting of the fruit tree seedlings. This is only applicable for avocados; for the other fruit tree seedlings, use 60cm by 60cm as shown in the layout above.



4. At the same time, divide the plot into two equal plots of 21m by 10.5m for agriculture crop testing. You may compare: a new variety of maize against local variety; one crop variety with manure against without, or one crop variety with fertilizer against without.
5. In each fruit seedling planting hole, put a third of a 90kg bag of animal manure. Mix it with the topsoil to fill the hole.
6. Select three appropriate fruit varieties (Avocado: Hass, Fuerte, Gwen, Bacon, Pinkerton, Reed, Lamb Hass and Zutano among others.)
7. Before the onset of the rains, identify where the selected varieties of Avocado fruit seedlings are available, purchase and deliver them near the planting site.
8. Plant the agriculture crops between the rows of fruit trees using the spacing recommended by agriculturists for the area.
9. Plant pigeon peas in the outer strip of 2.5m width surrounding the plot. This will be done to ensure that the whole plot is protected from animals for a long period.
10. Immediately after the onset of rains, plant the three different varieties of Avocado fruit tree seedlings each in its own row of three trees.
11. Weed the plot according to normal farming practice. Oxen plough should be used to plough the land between crops to improve water infiltration and its subsequent conservation.
12. During the growing season, monitor the crop growth rate, count the number of leaves, number of cobs, and record other observations of three (3) maize plants in each plot of 21m by 10.5m. Also monitor pests and diseases.
13. At regular intervals, monitor the fruit seedling survival, height and count the number of branches and branchlets of the fruit trees, any pest and disease problems and monitor the time of flowering for each fruit tree species.
14. When the crops are ready, the group should meet and agree on the day to harvest.
15. From each of the two (2) plots of 21m by 10.5m carefully harvest each plot separately and measure the yields from each of the sub plots.

### Questions to discuss

- At what time did the different fruit varieties start flowering and fruiting?
- Is there any difference in crop yield in the first and second year? What is the probable cause?
- Which variety among the three fruit varieties performed best?
- What are the advantages and disadvantages of having different varieties of fruit trees?

## 4. Fodder Bank for Livestock

### Objectives

In this trial you shall discover the benefits of growing fodder trees on the farm for feeding livestock. Fodder is green vegetation from trees that is harvested and fed to animals without allowing the animals to feed directly on them. Manual harvesting of fodder helps to ensure the availability of animal feed during the dry season.

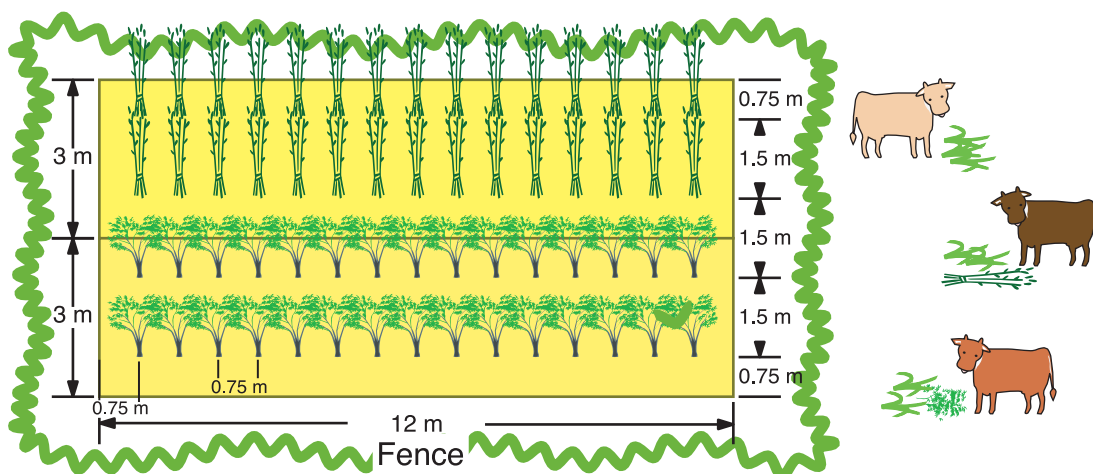
### Material

Implements for land preparation and weeding, supply of seedlings/cuttings of the two selected species and beans/green gram, sticks, notebooks, pencil, ruler and tape measure.

### Layout

### Procedures

1. Select a field with relatively uniform soil characteristic on a flat or gently sloping land.
2. The land should be at least 6m by 12m so that two species may be tried on plots of 3m by 12m each.



3. Before the rainy season, clear the bushes and shrubs. The plot should also be ripped using an oxen plough to increase infiltration of rainwater.

4. Stake the plots for the planting spots at a spacing of 1.50m by 0.75m. Dig holes of 30cm by 30cm by 30 cm for the planting of the fodder tree species seedlings as shown in the layout above.
5. Before the onset of the rains, identify where seedlings of the selected two species are available, purchase and deliver them near the planting site.
6. Plant beans/green gram between the rows of trees in the two plots uniformly using the spacing recommended by agriculturists for the area.
7. Construct fences surrounding the plot. This will be done to ensure that the whole plot is protected from animals for a long period after harvesting of crops.
8. After the onset of the rains, plant the fodder tree seedlings as early as possible so that they can take advantage of the rains for a long period.
9. Weed the plots according to normal farming practice. Oxen ploughs should be used to plough the land between crops to improve water infiltration and its subsequent conservation.
10. At regular intervals during the year, monitor the following in all the plots: height growth of the planted trees, survival of the trees and the number of branches. Monitor pests and diseases on both trees and crops.
11. Harvest the crops from each plot separately and record the yields.
12. When the fodder is ready for harvesting, measure the weight of the fodder harvested in each plot every time in kilograms. Feed the same amount to a specific number of animals and compare the result with the common animal feeds.
13. Do a cost benefit analysis to evaluate the advantages and disadvantages of growing the two different fodder tree species together with agricultural crops.

### Questions to discuss

- Is there any difference in yield i.e. weight of material cut from the two fodder tree species; what do you think was the reason?
- What are the advantages and/or disadvantages of cutting and carrying the feed to the animals?
- Was there a noticeable change in health and milk production among the animals fed on the fodder?
- Was there any fodder species preference among the livestock?
- Were there any problems encountered while introducing the animals to the fodder?

## 5. Bamboo Planting

### Objectives

In this trial you shall discover the benefits of growing fodder trees on the farm for feeding livestock. Fodder is green vegetation from trees that is harvested and fed to animals without allowing the animals to feed directly on them. Manual harvesting of fodder helps to ensure the availability of animal feed during the dry season.

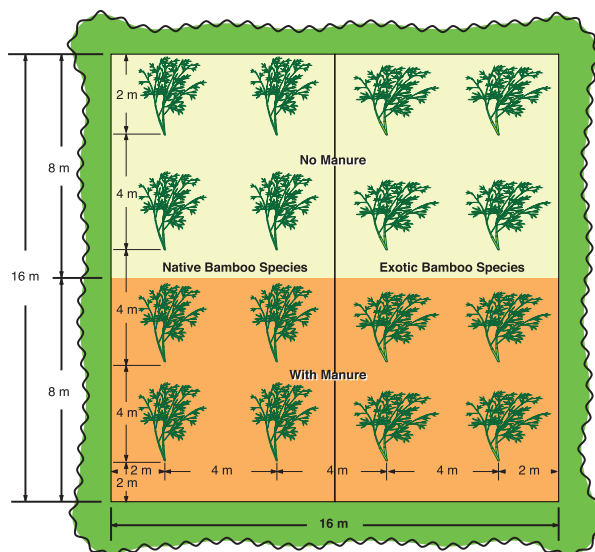
### Material

Implements for land preparation and weeding, supply of seedlings/cuttings of the two selected species and beans/green gram, sticks, notebooks, pencil, ruler and tape measure.

### Layout

### Procedures

1. Select a relatively flat field of 16 by 16 metres.
2. Before the start of the rains, clear the land of bushes and shrubs. This should also be ripped using an oxen plough to increase infiltration of rainwater.



3. Mark the planting points at a spacing of 4m by 4m in the 16m by 16m plot so that the plot can take 16 bamboos. Dig holes of 30cm by 30cm for the planting of the bamboo tree seedlings.

4. At the same time, divide the plot into two equal plots of 16m by 8m for agriculture crop testing: you may compare one crop variety (maize) with fertilizer against without.
5. Select two bamboo varieties (Indigenous/Local and Exotic).
6. Before the onset of the rains, identify where the selected varieties of bamboo seedlings are available, purchase and deliver them near the planting site.
7. Plant the agriculture crops between the rows of bamboo using the recommended spacing by agriculturists for the area.
8. Construct a fence surrounding the plot. This will be done to ensure that the whole plot is protected from animals for a long period.
9. Immediately after the onset of rains, plant the two varieties of bamboo seedlings each in a 16m by 8m plot as shown in diagram above.
10. Weed the plot according to normal farming practice. Oxen ploughs should be used to plough the land between crops to improve water infiltration and its subsequent conservation.
11. During the growing season, monitor the crop growth rate, count the number of leaves, number of cobs, and record other observations of three (3) maize plants in each plot of 8m by 8m. Also monitor pests and diseases.
12. At regular intervals, monitor the bamboo seedling survival, height and count the number of new shoots and any pest and disease problems for each bamboo variety.
13. When the crops are ready, the group should meet and agree on the day to harvest.
14. From each of the four (4) plots of 8m by 8m carefully harvest each plot separately and measure the yields from each of the sub plots.
15. Crops can be planted in the second year in the same manner.

### Questions to discuss

- How was the yield difference between the crops planted with fertilizer/manure and without?
- Is there any difference in crop yield between the first and second year? What is the probable cause?
- Which variety of bamboo performed better in terms of survival and growth?

## 6. Tree Nurseries

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### a. Seed pre-treatment using water

The process of germination starts once the seeds have obtained an adequate amount of water thus initiating the development of the young embryo. The intake of this water varies with species depending on the prevailing condition. In this trial, you are to learn through comparison whether pre treating seeds with hot water or soaking them in cold water overnight will improve their germination.

#### Treatments

- Soak seeds in cold water overnight
- Pre treat seeds with hot water
- Control (do not soak)

#### Duration

1 Month.



#### Procedures

1. Select a tree species for trial and obtain some seed of the same. Divide randomly some 300 seeds into three equal portions of 100 seeds each. Subject one portion to hot water pre treatment; soak one portion in cold water overnight while you leave the other portion untreated. Sow the three portions under similar conditions. Check daily and water the seedbed when it is dry.
2. When germination starts, count germinated seedlings from each treatment on a daily basis and prick out.

#### AESA parameters

Number of germinated seedlings and time taken.



### Summary table

Treatment	Germination (no. of seedlings by day)	Total no. of seedlings	Germination %	Remarks
	1 2 3 4 5 6 7 8 9 10 11 12 13..... .....24 25 26 27 28 29 30 31			
Hot water				
Cold water				
Control				

### Questions to discuss

- How many seedlings germinated in each seedbed?
- How many days did it take for the seed to start germinating in each treatment?
- How long did it take for germination to end in each treatment?
- Apart from the time of germination, is/are there any other difference(s) in the characteristics of seedlings?
- What were the advantages and disadvantages of the two different pre treatments in terms of germination and health of the seedlings?

### b. Species germination performance

After sowing of seeds of different species, some will germinate immediately while others will take some time. While delay in germination is not a negative effect, it is necessary for you to know for planning purposes which species germinate fast and those that are slow. This shall therefore guide in the future planning of nursery activities so that seedlings are retained in the nursery for as little time as is necessary to produce a healthy and sturdy stock.

#### Treatments

The various commonly sown species in the locality shall be divided in two general groups. These are the slow growing and the fast growing species. They shall be sown under similar conditions in specific parts of a seedbed.

#### Duration

1 Month

#### Procedure

A seedbed shall be prepared and divided into four sections. In each section 100 seeds of a single species shall be sown. The whole bed shall have the same soil media, watering regime and cover for shade if applied. The germinated seedling shall be counted and pricked out into the pots.

Slow growing species shall be germinated between May and June while the fast ones shall be sown between December and January.

### AESA parameters

Number of germinated seedlings.

### Summary table

Species	Number of seedlings Germinated by day	Total no. of seedlings	Germination %	Remarks
	1 2 3 4 5 6 7 8 9 10 11 12 13..... .....24 25 26 27 28 29 30 31			
A				
B				
C				
D				

### c. Difference between direct and indirect seed sowing

Seeds can be sown either directly into poly bags where they are maintained until they are ready to plant out in the field or they can be sown in seedbeds and later pricked out into bags. Normally the procedure used depends on the size of the seed; for very small sized seeds, it is advised that the same are sown in seed beds while the big sized ones can be sown using either method. The objective of this trial is to determine the most appropriate sowing method for large sized seed.

### Treatments

Direct and indirect sowing of seed.

### Duration

2 months

### Procedure

Take 200 big size seeds of the same species and divide them into two sets of 100 seeds each. Sow 100 into individual pots and sow the remaining 100 into a seedbed. Subject the seeds to similar watering and shade if any is provided. Give time for germination to take place as observations are made regularly.

### AESA parameters

- Numbers of germinated seed
- The period taken to germinate and
- Number of seedlings established.

#### d. Difference between direct and indirect seed sowing

In this trial you will learn through comparison the best soil mixture to use in raising seedlings. Some soils have adequate plant nutrients while others are deficient in a number of plant nutrients. As a result some soils shall greatly improve with addition of either manure or fertilizers but others will register minimal growth improvement. You will therefore compare the growth performance of seedlings in the usual soil on the farm with seedlings of the same species grown in the same soil mixed with: manure, sand, fertilizer or a combination of the same.

#### Treatments

These are application of a mixture of:

- Soil, manure, sand and fertilizer
- Soil, manure and sand
- Soil and manure
- Soil only



#### Procedure

Assemble the materials at the nursery i.e. soil, sand, manure and fertilizer. Mix them into proper proportions. From each mixture, pot 100 containers of equal size. Transplant one hundred seedlings of the same species and size into each of the four different batches of containers. The pricking out should be done on the same day. All the seedlings should be given the same treatment thereafter as part of the management.

Arrange each treatment in one block for easy identification. Monitor the growth performance of the seedlings in each treatment every week and record the observation. Measure the height of five (5) randomly selected seedlings in each treatment once a week.

**Duration**

2 to 3 months

**AESA parameters**

Height of seedlings and the girth

**Questions to discuss**

- Which kind of problems have you observed in each treatment?
- Are there any advantages and/or disadvantages of using sand, fertilizer or manure in the potting soil?

**e. Species performance**

Different tree species grow at different rates under similar conditions. However, while many species are suitable for timber production, their growth rates are quite different. As a result some provide the products at an early age than the others.

The objective of this trial is to determine the growth rates of timber producing species at the nursery stage.

**Treatments**

The species are Cypress, Pine, Eucalyptus and Grevillea.

**Procedure**

Assemble 50 young seedlings of relatively uniform size and age of each of the four species: Cypress, Pine, Eucalyptus and Grevillea. Subject them to similar growing conditions but specifically ensuring no water logging conditions prevail at any time. Sample 5 seedlings randomly of each species during AESA taking every two weeks.

**Duration**

3 months

**AESA parameters**

Height of seedlings and the girth

**f. Shade effect**

In this trial you shall test the effect of shade on the growth development of different species to determine those species that may require shade

and those that can be raised in the open. You shall compare the growth development of seedlings of each species both under shade and in the open sun. The seedlings shall be tested both during the wet season and the dry season. The other nursery treatments for the seedlings such as watering, soil mixture or weeding shall be maintained the same so that the only difference is the application of shade.



Seedlings in the open



Seedlings under shade

### Procedure

#### **Stage 1:** shading after pricking out for 2 months

Place ten seedlings of a specific species under shade and ten in an open area. Observe for one week and conclude the result.

#### **Stage 2:** shading during the dry season

Place ten seedlings of the same species as in stage 1 above under shade and ten in an open area. Water adequately to keep both treatments under the same moisture condition since the trial is to compare seedlings in the sun and those under shade and not watering frequency (obviously in open area, the seedlings may require more frequent watering).

### AESA parameters

**Stage 1:** Survival rate

**Stage 2:** Height, girth, number of leaves, survival and a statement of their growth vigour

As these trials take a short period, the FFS may decide to try several species, one at a time to gain knowledge on the different species they encounter in their locality.

### **g. Types of seedling beds**

There are numerous types of seedling beds in use. However, some are more appropriate for use in different climatic zones than others. In this



trial, you are expected to learn the different types of bed to use in your area. Two types of beds shall be considered: these are the sunken beds and the raised beds. The other nursery conditions shall be maintained the same, which is, the species, age of seedlings, spacing, size of pots and the watering regime.



Raised seedling bed



Sunken seedling bed

#### **Procedure**

Immediately after pricking out, put 50 seedlings into each of these two beds.

#### **Duration**

1 month

It is possible to conclude this test even within a shorter period depending on the growth rate of the species.

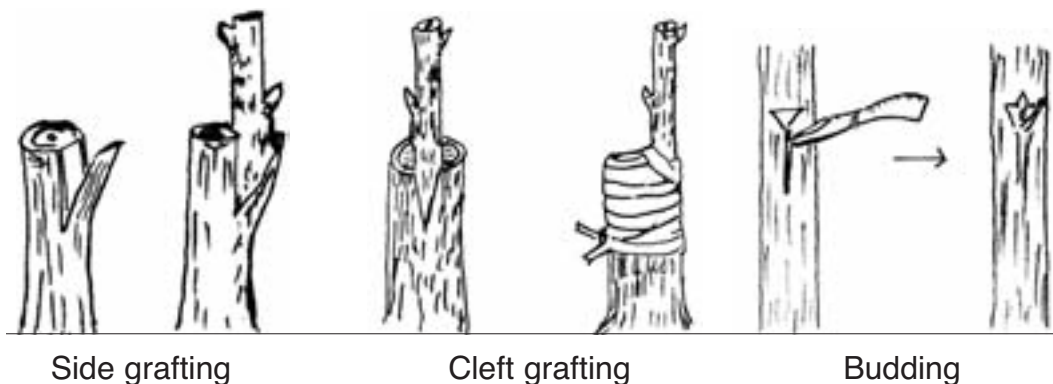
#### **AESA parameters**

Height, girth, survival of seedlings, number of leaves.

### **h. Different techniques of grafting**

In this trial, you are expected to learn the different grafting techniques for mangoes. The main question shall be; which among the various grafting techniques is more appropriate than the others? Two grafting techniques shall be compared; these are the side or splice grafting and the top, cleft or wedge grafting. The other conditions including the size of rootstock, the source and size of scion and the general management of the grafts shall be maintained as similar as possible. For mangoes, the best season for this practice is May. The grafts shall be observed for a period of four (4) weeks.





Side grafting

Cleft grafting

Budding

### Procedure

Select 50 rootstock of relatively the same size for two grafting treatments. Acquire 60 scions also of equal size as the root stock from a common source for mangoes. Prepare and graft 25 root stocks using top grafting and the other 25 using side grafting. Observe weekly and record the number of success.

To ensure the person responsible for grafting does not get tired doing one technique and do the other rather badly, the 2 techniques should be implemented simultaneously and the same person(s) should do both.

### AESA parameters

Number of successful grafts, number of branches developed, girth.

### Questions to discuss

- Which method was more difficult and why?
- Which method was more successful and why?
- What were the advantages and disadvantages of both grafting techniques?

### i. Post grafting management of seedlings

In this trial you are expected to learn through comparisons the most appropriate technique for successful grafting in as far as the covering of the grafts is concerned. The key question shall then be: do we need to cover the newly grafted seedlings with a polyethylene bag?

The treatments in this trial shall be: newly grafted seedlings covered with polyethylene bags and others not covered. The other management practices shall be maintained as similar as possible including the variety of fruits, the grafting technique and all other nursery practices.



Covered grafts



Not covered

**Duration**

21 days

**Procedure**

Graft 50 seedlings of mangoes of the same variety and cover each seedling with a polyethylene bag. Graft another 50 seedlings using the same batch of scions and root stock and leave them uncovered. Put all the grafted seedlings close together such that they are tended together at all times including during watering.

**AESA parameters**

Number of successful grafts.

**j. Effect of age of root stock on rate of grafting success**

While undertaking grafting, it is often that the required rootstocks are not available in the nursery. These are consequently obtained from other nurseries, where they are normally remnants from the previous year's stock (which are generally old) or the newly raised stock, which are often very young and tender. The objective of this trial is to establish which is the most appropriate rootstock to use for grafting in such situations?

**Treatment**

Two types of rootstocks of the same species shall be obtained: old and young. These shall be grafted with scions from the same source and grafted using the same technique. For each batch, 20 grafted seedlings shall be prepared. All of them shall be subjected to similar nursery practices.

**Duration**

21 days

**Procedure**

Graft 20 old seedlings of mangoes and another 20 young ones using the same batch of scions. Put all the grafted seedlings together but in a

manner that is easy to identify each of them. Give the grafted seedlings similar nursery management practices.

To ensure the person responsible for grafting does not get tired doing one rootstock and do the other rather badly, the 2 rootstocks should be implemented simultaneously and the same person(s) should do both.

#### **AESA parameters**

Number of successful grafts.

#### **k. Effect of position of a seedling in a seedling bed**

This trial presupposes that the position of a seedling in a bed has some bearing on the tending and therefore the health of the seedling. The key question then is; does the position of the seedling in a bed affect its growth performance?

#### **Treatment**

A total of 144 seedlings of the same species shall be pricked out on the same day into polyethylene tubes/bags of the same size filled with the same soil medium. These shall be arranged in a 12 by 12 arrangement in a bed. The seedlings shall then be subjected to similar tending practices



#### **Duration**

3 months

#### **Procedure**

After pricking out, arrange the seedlings in rows of 12 until the 12th row. Seedlings in the outer 2 rows on all 4 sides shall be considered as being in the periphery while those in the inner 8 by 8 rows shall be considered to be in the middle. Therefore, 80 seedlings are in the periphery while 64 are in the middle.

**AESA parameters**

Survival, height growth, girth.

**I. Effect of fertilizer and manure on seedling growth**

The soil in our farms is normally deficient in plant nutrients due to continuous cultivation. However, this is the only soil available on the farm for raising the forest trees before planting them in the field.

While the growth rate may be negatively affected by lack of or limited plant nutrients, addition of fertilizer and/or manure may improve the growth rate and therefore shorten the nursery duration. The key question in this trial therefore is: is there any effect on the growth rate of seedlings as a result of adding either fertilizers or manure?

**Treatment**

Select 300 young seedlings of the same species, age and in similar containers. Divide them into 3 batches of 100 seedlings each. In batch 1 add fertilizer (approximately 5 gm per seedling). In batch 2 add manure (2 handfuls per seedling) and then mix thoroughly with the soil and water heavily. Batch 3 shall be left as the control.



Fertilizer

Manure

Control

**Duration**

3 months

**Procedure**

Put 300 seedlings of relatively the same size in 3 batches of 100 seedlings each. Among the first batch of 100 seedlings, add fertilizer at the rate of 1 teaspoonful per seedling. In the second batch add manure at the rate of one handful per seedling while the third batch shall be left as it is.

Subsequently give similar nursery management treatments to the 3 batches.

**AESA parameters**

Height growth, girth.

### m. Watering frequency

The common believe among tree growers, is that watering must be carried out twice daily at all times to produce healthy vigorously growing seedlings. As a result there is a general tendency of over watering of seedlings in some situations, such as during cold period thus causing retarded growth or death of seedlings. This is especially so among pine seedlings. Consequently as tree growers, you need to know how frequently you should water the seedlings of different species.

#### Treatment

Treatments involving different watering frequency shall be applied. These are:

- Water once daily
- Water twice daily and
- Water once every other day



Once per day



Twice per day



Once every other day

#### Duration

4 months

#### Procedure

Select 150 seedlings of the same species that are relatively young and of the same size. Divide them into 3 batches of 50 seedlings each.

Seedlings in batch 1 are to be watered once daily, batch 2 to be watered twice a day while batch 3 shall be watered after every other day. All other nursery practices should be maintained the same for all three batches. For example you shall use the same water source, seedlings put in pots of same size and watering must be done properly and at the same time (either evening or morning for all seedlings whenever it is done).

#### AESA parameters

Height growth, girth, survival.



## n. Effect of root pruning on seedlings growth

Root pruning involves the cutting back of roots of seedlings that normally develop beyond the confines of the container. It is done to ensure that the seedlings do not get established in the nursery. Therefore it remains easy to shift seedlings in the nursery from one point to the other including taking them to the field during planting. However, this operation interferes with the normal growth of the seedlings. Consequently, considering that it is essential that sturdy seedlings of the right size must be raised in the nursery, the key question is, is it necessary to root prune?

### Treatment

After pricking out 100 seedlings into polyethylene bags, divide randomly into two groups of 50 seedlings. One batch of 50 seedlings shall be subjected to root pruning whenever the roots develop beyond the confines of the container while the other batch of 50 seedlings shall be left with no disturbance. Other nursery operations shall be maintained in a similar manner as much as is practical. During weeding of seedlings, the ones not to be root pruned should not be lifted, as this causes the roots to be severed.



Seedlings not root pruned



Root pruned seedlings

### Duration

4 months

### AESA parameters

In the nursery: Height, girth.

In the field: Survival, height growth.



## 7. Home Garden

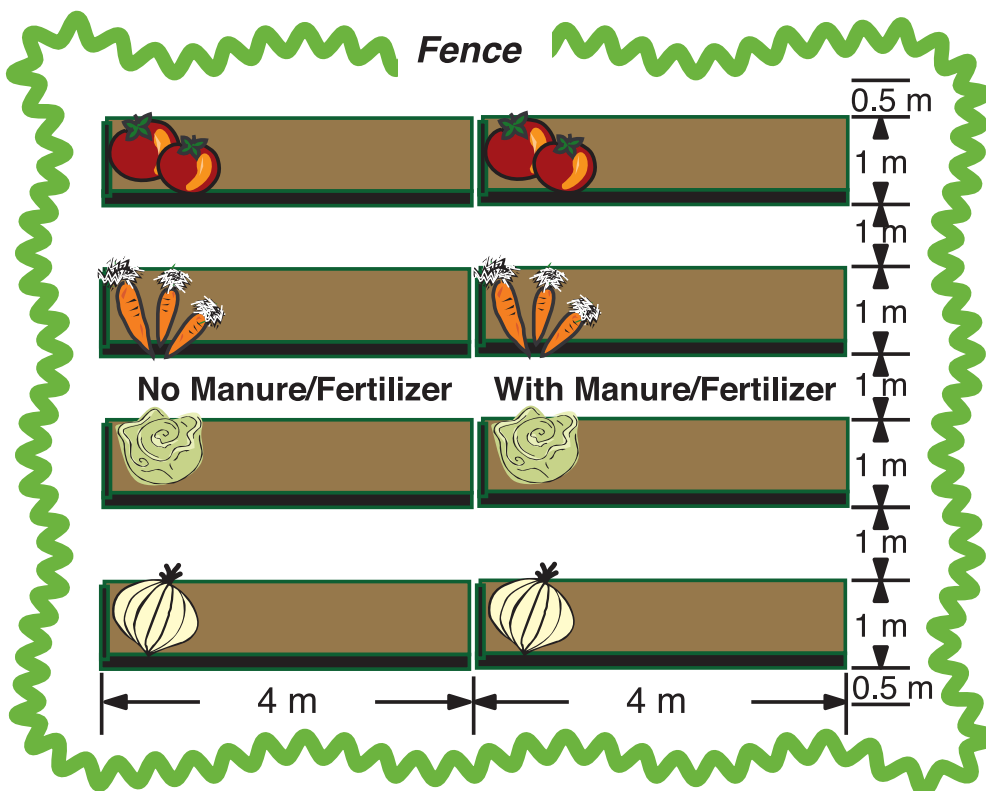
### Objectives

In this trial, you will test the four main species or varieties of vegetables, root crops, herbs/medicinal plants or spices, in the traditional home garden. You shall practice the propagation and management, monitor the performances and compare the production and cost effectiveness.

### Material

Implements for land preparation and cultivation, seeds of several vegetables, small fruits, root crops, herbs/medicinal plants/spices, locally available organic manure, fertilizer, chemicals, tape measure, ruler, sticks, string, notebooks and pencil.

### Layout



## Procedures

1. In each sub group select one favourable species to try. If there are many sub groups intending to try the same species, it may be necessary to differentiate the subgroups by assigning different varieties of the same species and compare their performance. The facilitator shall, while respecting the members preferences, guide them not to select inappropriate species, which are unlikely adapt to the environmental conditions of the particular location.
2. Select a piece of land measuring 8m by 8m with relatively uniform soil characteristics on a flat or gently sloping area near the homestead. This land should be provided by one member of the group – the “Host Farmer”.
3. Members shall also enter into an agreement with the host farmer on the sharing of the product after harvesting.
4. Prepare the land by clearing and hoeing before the sowing.
5. Mark and stake out the plot (8m by 8 m) with sticks or poles in four small planting ridge of 1m by 4m as shown in the layout. The ridges should be along the contour.
6. Divide each row into two and agree on which side to apply manure/fertilizer and which side to be left as the control (see the layout figure). Apply manure/fertilizer into the side of the row agreed by the group.
7. Construct a fence to protect from livestock including chicken.
8. Develop the seedbed separately for the species, which require it. Transplant to the rows developed. If the species do not require a seedbed and the planting materials are big enough, plant directly into the rows.
9. Develop the ridges and plant the seed/seedling/planting materials. Spacing and height of rows will depend on the species selected. If you are not sure consult an agriculturalist. Each species shall be planted at the spacing recommended.
10. The group can reduce the cost of chemicals by using tobacco, Datura, hot pepper, Neem or other herbal extract, etc.
11. Weed the plot according to normal farming practice.
12. At regular intervals during the season, monitor crop growth performance i.e. height, circumference, number, width and length of leaves; number and size of cobs, and record the observation of at least three plants in each plot of 4m by 1m. Observe pest and disease both in crops also.

13. When the vegetables/root crops/herbs/medicinal plants/spices are ready, the group should meet and agree on the day to harvest.
14. During harvesting, record the yields and if the produce is sold, record also the income from each side of 1m by 4m ridge and each of the four vegetable species or varieties for further cost benefit analysis.

**Questions to discuss**

- Was there any yield difference between the half ridge with fertilizer/manure or mixture of fertilizer and manure, and the control (the half row without manure or fertilizer)?
- What measures has the group put in place to ensure harvesting is done well?
- Were there any advantages and disadvantages of using fertilizer or manure on the yields?
- What were some of the problems encountered in the establishment and management of the garden?

## 8. Beekeeping

### Objectives

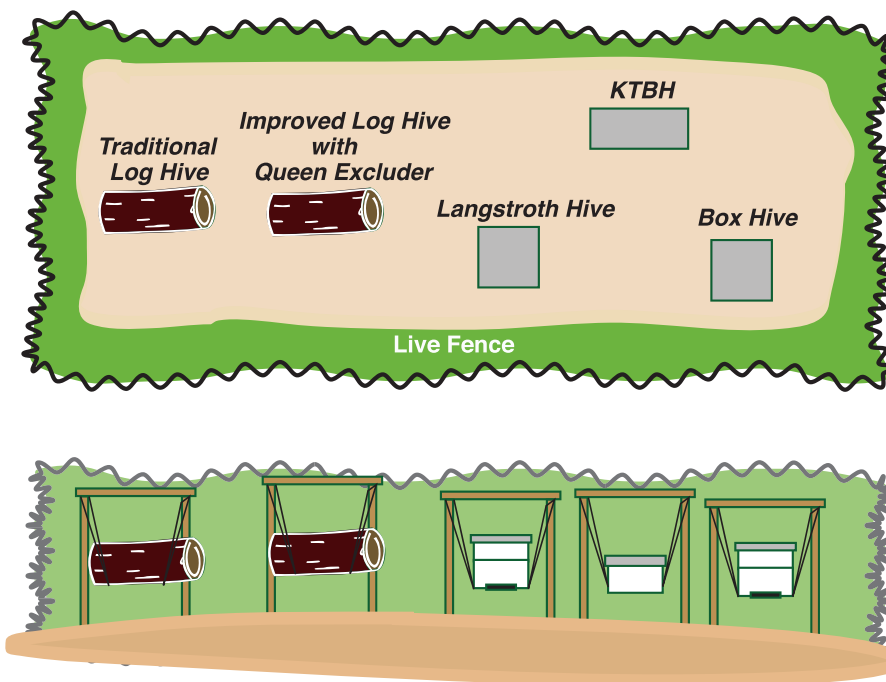
Beekeeping generates income in the short term through production of honey, beeswax and other products (2 to 3 times a year depending on season and environmental conditions). For learning purposes, in this trial you will compare the performance of several types of bee hives: Langstroth hive, Box hive (similar to Langstroth type but without an inner frame), Traditional log hive, Improved log hive with queen excluder and Kenya Top Bar hive (KTBH) to determine the most appropriate type for the members.

### Material

Langstroth Beehive, Kenya Top Bar Hive or Box Hive, Local Beehive, Wire mesh (Queen Excluder), Hanging Wire, Treated Posts, Bee Suits, Smoker, Hive Tools, Gum Boots, Torch..

### Layout

2 to 3 types of hives can be selected depending on the provided learning budget.



## Procedures

1. At the beginning of the enterprise, you can ask members to list all flowering plants around the site including crops and weeds e.g. Acacia, Eucalyptus, Beans, Sun flower so that they can understand the existing vegetations or resources which will benefit the bees. Since nectar and pollen are the principal diet for bees, farmers should understand which kinds of flowering plants are available in the area. Through long term AESA observations on flowers, farmers may realize and appreciate the importance of existing vegetation especially forest resources.
2. Start preparing in February or August. March and September are good months for accumulation of honey by bees because the intensity of sunlight is high during these months. March is also a flowering season for many acacia trees.
3. Site selection and Preparation: The site for an apiary should be far from human activity such as homesteads and grazing areas. The site should have shade for hives and free from weeds and bushes, which will attract ants or other bee enemies.
4. Colonization: Initially start with only the Brood Box (without Super Box) in the apiary. When bee swarms in the area start (usually end of March), hang or put the hives on the trees at the height of 2 to 3 m, the usual height the traditional hives are hung. This is because swarms of bees usually fly at that height. If natural forest is close to your place, you can hang the box temporarily in the forest to catch bees.
5. Transferring the colonised hive to permanent site and first inspection: After 2 weeks, put down the hives at the apiary and conduct the first practical/open hive inspection. If the colony has developed in less than 4 frames out of 10 to 11, you can conclude that it is a weak colony. In this case release the queen and hang hive again to catch another swarm. If more than 5 frames are occupied, you can conclude it is a strong colony and you can continue with the colony. [Whether a colony is strong or weak will depend on the queen's capacity but if you keep weak colonies for a long time, this will attract wax moth which eventually destroys them].
6. Weekly AESA observation (Visual Inspection): Visual observations should be conducted during weekly AESA sessions. The following parameters are important to be considered.

### General Site Observations:

- Cleanliness or sanitary condition: Weeds/grasses around the apiary
- Activeness of bees: Whether bees are flying in and out actively
- Pests and Enemies around: are there ants or beetles getting into the hive?
- Ants (Preventable by hanging hive with wire smeared with grease)
- Big Beetles (Reduce the size of entrance holes in hive)

**Others Surrounding Environment Analysis:**

- Availability of Flowers: Flowering Plants, Species, Quantity
  - Availability of Water: Source (Rivers, Ponds, Others), Distance
- Information on which month different kind of flowers are available in the area or the phenological data of the different tree species collected by the groups will be a very good source of information for new farmers who want to start beekeeping and even for researchers.

An example of AESA sheet is shown in next page:

- 7.** Monthly inspection: Conduct practical open hive inspection monthly. Wear bee suits properly, use smoker to reduce aggressiveness of bees. Open hives to inspect pests and diseases, count how many frames are occupied by the colony. For monthly AESA, both visual & practical open hive inspection data should be recorded. Practical AESA parameters are as follows:

**Colony assessment:**

- Number of frames occupied
  - Pests and enemies in the Hive
  - Diseases
- 8.** If you find that all frames in the brood box are fully occupied during monthly inspection and there are many flowers around, put queen excluder and super box on the top of brood box. Only honey will be stored in the super box since the queen will not be able to lay eggs in the super box. If you find all the frames in the first super box are occupied and again there are still many flowers around, you could add a second super box for increased honey production.
  - 9.** The amount of honey, that is, weight produced and the prices sold from each hive will be recorded for each hive separately. The data will be summed and analysed after 6 months or one year to compare the performance of each hive in terms of quantity of honey produced and income generated.





**Questions to discuss**

- How many Kilograms of honey have been produced from each type of hive (calculate per year); which type produced more honey?
- Which hive produced better quality honey?
- From the different types of hives, are there any other products rather than honey that you may get in future?
- Which type of hive is easier to manage?
- Compare the cost of each hive and the quantity of honey harvested. Which is the most cost effective type?

## 9. Fish Farming

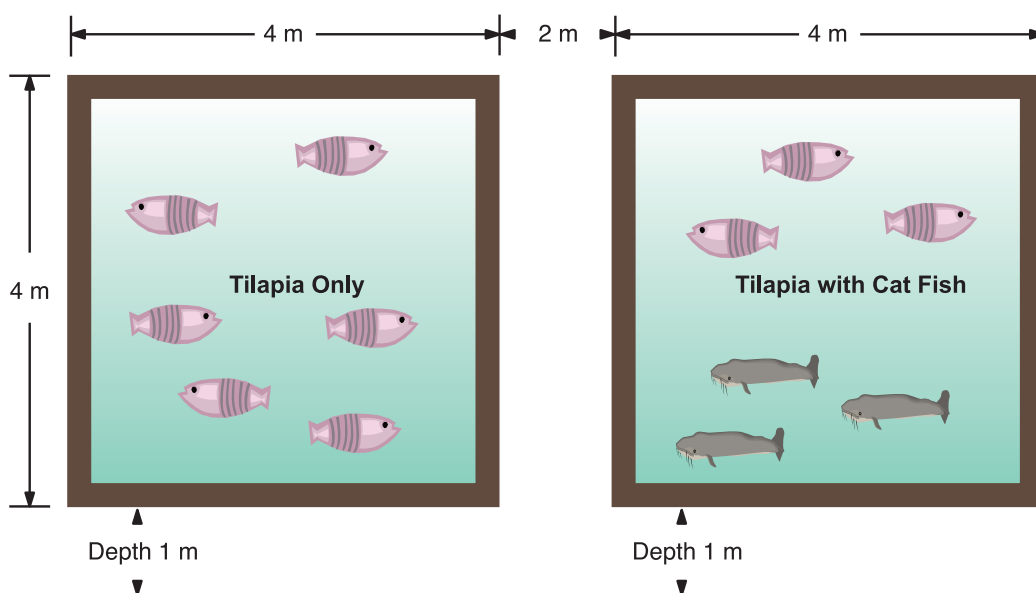
### Objectives

In this trial you will introduce a comparative experiment either between sole species and combined species of fish in the pond.

### Material

Fingerlings of Tilapia, Catfish, Fish Feeds (Initial), Fish Net.

### Layout



### Procedures

1. Select a relatively flat site where there is permanent water at all times. Clayish soil is better.
2. Construct two fish ponds. The commercial size of fish pond should be 200 to 300m<sup>3</sup> but for FFS practice and experiment, 4m x 4m x 1m (16m<sup>3</sup>) will be applicable. If the ponds are constructed close to each other, it will be easy to connect them together after the experiment. The depth of the pond should not be more than 1m.
3. In case the area has poromeric (porous) soil, use plastic sheet at the bottom and sides to maintain water in the pond.

4. Consult your fishery officer to get advice especially in construction design of the appropriate pond.
5. Put fresh water into the pond. Appropriate depth will be 70 80 cm. Refill the water after the initial soaking, to the 70 80 cm depth. Leave for a few days to warm the water. For Tilapia, 24 30°C is a favourable temperature.
6. Find and purchase fingerlings of Tilapia (*Oreochromis niloticus*) and Catfish (*Clarias gariepinus*) and release into the ponds according to the plan of experiment (in case of two 4 x 4m pond, 40 Tilapia fingerlings in each pond and 8 of fingerlings of Catfish in one of the ponds. Feed them with same quantity of concentrated feed several times per day or as instructed by the fishery officers in the area.
7. If two species of fingerlings are not available, release the same number of Tilapia fingerling into both ponds (in case of two 4m x 4m pond, 40 Tilapia fingerlings in each pond). Feed one pond with concentrated feed and the other with traditional feed.
8. Monitor fish and water condition every week. Sample some fish and measure them on a monthly basis.
9. After 10 to 12 months, capture all fishes and measure their weight and evaluate the results of both ponds.

#### Questions to discuss

- In which pond was the growth of Tilapia better? Is there any advantage of combining tilapia with catfish in the same pond?
- In which pond was the growth of Tilapia is better when fed with different feeds? Is there any advantage in using concentrated feed over the traditional feed?
- Among the male and female fish, which grew faster? What kind of growth strategy can be taken to improve fish growth?
- In your opinion, is fish farming really profitable considering the cost and work load involved?

# 10. Poultry Keeping

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## Objectives

In this trial you will introduce a comparative experiment either between local and grade chicken or the difference in growth of same class of chickens under traditional and modern feeding system.

## Material

Day old chick (Grade layer), Chick (Local breed), Housing Material, Wire mesh, Nails, Feeders, Drinkers, Drugs & Vaccines, Feed (Initial).

### Procedures 1. Different types of chicken

1. Agree among members on which type of chicken rearing method; free range, semi caged or full caged the group is going to use.
2. Construct two appropriate sized cages as agreed among the members.
3. Procure same number of local and grade chick e.g. 20 local chick and 20 grade ones.
4. Feed both of them with the same chick feed using the same quantity and frequency as recommended by the livestock officer of the area.
5. At regular weekly intervals during the year, monitor the size and health condition among the local and grade chicken.
6. When they start laying eggs, record the number produced daily for one month.
7. Summarise the production among local and grade chicken and analyse the result and conclude.

### Procedures 2. Different methods of chicken rearing

1. Agree among members on the type of chicken the group is going to raise and how many.
2. Agree among members on the husbandry methods; free range, semi caged and full caged, the group is going to compare.
3. Purchase agreed number (e.g. 40) of agreed type of chicken and divide into two populations (e.g. 20 + 20).
4. One group may be reared semi caged while the other is left free ranging.
5. Feed both of them using the same diet with equal quantity of feed at the frequency recommended by the livestock officer of the area.

6. At regular weekly intervals during the year, monitor the size and health condition in both groups of chicken.
7. When they start laying eggs, record the number of egg produced daily for one month by each group.
8. Summarise the production under both husbandry and analyse the results and conclude.

**Procedures 3.** Different types of feed

1. Agree among members on which types of chicken the group is going to raise and how many.
2. Agree among members on which type of chicken rearing method; free range, semi caged and full caged the group is going to use.
3. Purchase the agreed number (e.g. 40) of agreed type of chicken and divide into two populations (e.g.20 + 20).
4. Feed one population with the diet recommended by the livestock officer while the other is reared through traditional or conventional practice.
5. At regular weekly interval during the year, monitor the size and health condition in both groups of chicken.
6. When they start laying eggs, record the number of egg produced daily for one month.
7. Summarise the production from both groups of chicken, analyse the result and conclude.

**Questions to discuss**

- Was there any difference in the period before initial egg production between local and grade chicken?
- Was there any difference in the production of eggs between free range, semi caged and full caged chicken?
- Was there any difference between the two different types of feeds on both local and grade chicken?
- Was there any difference in the frequency of egg production and price of eggs from local and grade chicken?



# 11. Dairy Animal Management

## Objectives

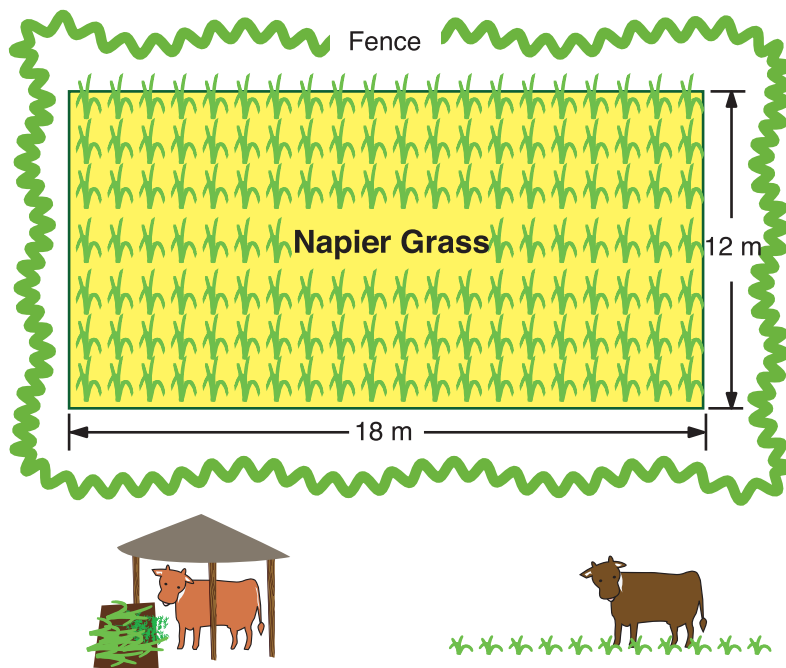
In this trial you will introduce and experiment with cut and carry fodder grass for dairy animal feeding and evaluate the change in milk production, health condition of animals and general workload before and after introduction of the system.

## Material

Napier Grass Cuttings, Fertilizers, Housing Material for making paddocks or zero grazing unit, Nails, Drugs, Mineral licks, Vaccines, Acaricides.

## Layout

## Procedures



1. Select a field with relatively uniform soil characteristic on a flat or gently sloping land. The land should be at least 12m by 18m.
2. Before the rainy season, clear the land of bushes and shrubs. This should also be ripped using an oxen plough to increase infiltration of rainwater.

3. Before the onset of the rains, identify where the cuttings of Napier Grass are available.
4. After the onset of the rains, purchase and deliver Napier Grass cuttings to the planting site.
5. Mark the planting spots in the plots and dig planting holes at a spacing of 1m by 1m. Plant Napier Grass cuttings as early as possible so that they can take advantage of the rains for a long period.
6. Construct a fence surrounding the plot. This will be done to ensure that the whole plot is protected from animals at all times.
7. Weed the plot according to normal farming practice. An oxen plough should be used to plough the land between crops to improve water infiltration and its subsequent conservation.
8. At regular weekly intervals during the year, monitor the following in the plot: height growth of the planted grass, milk production and the health condition of the animal.
9. When the fodder grass has been established, harvest and weigh fodder and start feeding the animals.
10. Record milk production daily and health condition of the animals weekly.
11. Evaluate the advantages and disadvantages of feeding Napier grass to milking animals.

**Questions to discuss**

- Was there any difference in milk production before and after feeding animals with “cut and carry” fodder grass.
- Was there any difference in the health of animals before and after feeding animals with “cut and carry” fodder grass.
- Was there any difference in the workload or labour requirement before and after starting to feed the animals with “cut and carry” fodder grass?



## Annex 3. Repository of Templates

## Annex 3-1. FFS Session Checklist 1

District	Division	Date
Group name	Membership	
Facilitator Name	No. of Sessions carried out so far	

Check Item	Observations/Problems	
Group performance in general		
Attendance of members (Check Register Book. Is it recorded properly?)	Attendance at the particular day	Attendance general until date
Schedule/Time Table (Existing, Are they followed, Flow of activities, Starting time & Ending time?)		
Time keeping?		
Learning Norms (Existing? How? Are they followed?)		
Learning site general (Location, seating facilities, etc.)		
Use of stationary (Check proper use and use of colors in AESA Chart)		
Are they enough? Is there lack or shortage of any learning material? Need addition of any?		

Check Item	Observations/Problems	
Sub-groups (Existing? Name? Motto? Number? Role? Active?)		
The Host team Existing? Role? Active?		
The Role of the Facilitator Mode of Facilitation How?		
Enterprises  How is host Farm Establishment? Progress so far?		
PTD  Is it relevant? Well addressed to farmers needs? Need to modify or change?		
AESA taking, Processing & Presentation (Stage of crops, AESA sheet)	Date Started:	No. of AESA to date
	NB: If no AESA that day, ask for last AESA taken and get the details	
Special Topics  Existing? Which topic covered? Was it relevant? Mode of Presentation: (Teaching or Facilitating?)		

Check Item	Observations/Problems
Group Dynamics Which type? Level of Participation? Is the message clear? Is it relevant?	
Record Keeping Existing? Which type of records?	
Weekly Report Was it written properly? Is input and extension cost well calculated?	
Monitoring by other officers Who visited? Partial visit or full backstopping?	
Level of Empowerment Equity among members? Transparency? Full Participation? Confidence? Knowledge/ Techniques, etc.	
Other IGAs	
Level of funding	
Other Remarks:	



## Annex 3 2. FFS Session Checklist 2

Backstopping Officer		Facilitator Name	
FFS Name		District	
Date		Attendance	M: F:

## Group Performance Check Items

1	Punctuality Starting Time	Good, Fair, Poor	2	Punctuality of Farmers	Good, Fair, Poor
3	Display of Timetable	Good, Fair, Poor	4	Sub groups	Good, Fair, Poor
5	Participation of Host Team	Good, Fair, Poor	6	Time Keeper	Good, Fair, Poor
7	Equal Participation in AESA Taking	Good, Fair, Poor	8	Appropriateness of AESA Measurement	Good, Fair, Poor
9	AESA Note Taking	Good, Fair, Poor	10	Time Allocation for AESA Taking	Good, Fair, Poor
11	Use of Colour in AESA Preparation	Good, Fair, Poor	12	Equal Participation in AESA Processing	Good, Fair, Poor
13	Time Allocation for AESA Processing	Good, Fair, Poor	14	Use of Pointer	Good, Fair, Poor
15	Appropriateness of Today's Topic Maintenance of Stationary	Good, Fair, Poor	16	Use of Talk Ball Coherence of group (group Organization)	Good, Fair, Poor
17	Appropriateness of learning site	Good, Fair, Poor	18	Coherence of Group (Group Organization)	Good, Fair, Poor
19	Appropriateness of Learning Site	Good, Fair, Poor	20	Sitting Arrangement	Good, Fair, Poor
21	Closeness of Learning Site to PTD sites	Good, Fair, Poor	22	Attendance general fill date	Good, Fair, Poor
23	Attendance at the Particular Day	Good, Fair, Poor	24	General Attendance until date	Good, Fair, Poor
25	Proper Roll Call Book Keeping	Good, Fair, Poor	26	How have the Norms been followed?	Good, Fair, Poor

## Facilitation Skill Check Item

27	Confidence in Facilitation	Good, Fair, Poor	28	Facilitation VS Teaching	Good, Fair, Poor
29	Tone of Voice	Good, Fair, Poor	30	Plainness of Language	Good, Fair, Poor
31	Facilitation Skills in Encouraging Equal Participation	Good, Fair, Poor	32	Sensitivity for Socially Vulnerable Groups	Good, Fair, Poor

## Facilitation Skill Check Item

33	Wrap up Skills after AESA Presentation	Good, Fair, Poor	34	Knowledge and preparation of Today's Topic	Good, Fair, Poor
35	NOT Taking Lead (Dominance)	Good, Fair, Poor	36	Neutrality in Facilitation	Good, Fair, Poor
37	Punctuality	Good, Fair, Poor	38	Use of Sub groups	Good, Fair, Poor
39	Use of Local Knowledge	Good, Fair, Poor	40	Flexibility	Good, Fair, Poor
41	Understanding of Enterprises	Good, Fair, Poor	42	Respects to Farmers	Good, Fair, Poor

## Gender &amp; Illiterate Consideration Check Item

43	Attendance of Women Members	Good, Fair, Poor	44	Seating Position of Women Members	Good, Fair, Poor
45	Women's participation in Sub Group Activity	Good, Fair, Poor	46	AESA Presentation by Women	Good, Fair, Poor
47	Women's participation in Discussion	Good, Fair, Poor	48	Women's Participation in Dynamics	Good, Fair, Poor
49	Overall Interest by Women Members	Good, Fair, Poor	50	Talk Ball to Women	Good, Fair, Poor
51	Equal rights and Responsibility between Men and Women	Good, Fair, Poor	52	Equal overload to Women	Good, Fair, Poor
53	Participation of Illiterates in Sub Group Activity	Good, Fair, Poor	54	Arrangement/Support for non literate Members	Good, Fair, Poor

## Remarks of the Backstopper

## Remarks of FFS Facilitator

FFS Facilitator: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

Backstopper: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_

## Annex 3-3. Mobile Phone Weekly FFS Report

	Questions	Reporting Value
1.	Code of FFS	
2.	Date	
3.	Starting time	
4.	End time	
5.	No FFS Members attended on time	
6.	No of FFS Members came late	
7.	No of FFS Members left earlier	
8.	No of FFS Members absent	
9.	Did Facilitator come to the Session?	Yes / No
10.	Did Facilitator come on time?	Yes / No
11.	Performance of Facilitator	Excellent/Good/Fair/Poor/Bad
12.	Performance of FFS Members	Excellent/Good/Fair/Poor/Bad
13.	Issue to discuss with PMU?	Yes / No
14.	Do you authorize payment to Facilitator?	Yes / No
15.	Total Saving up today.	Ksh.
16.	Balance of Group Learning Fund	Ksh.
Issues to be discuss with PMU:		
Observations		

Annex 3-4. Facilitator's Monthly Report

Name of Facilitator		Enterprise(s)			Date			
Name of FFS		1.		2.		3.		
Week	Date	AESA No.	Attendance	Host Team	Field Activities	Special Topics	Group Dynamics	Remarks
1								
2								
3								
4								
5								
Observation(s)		Group Problem(s)			Recommendation(s)			
Concluding Remarks:								

Annex 3-5. Problem Report by Facilitators

Facilitator Name	District	FFS	Date
Problem	Action Taken/ Countermeasures	Suggestions by the Facilitator	Recommendation by HQ

Annex 3-6. Empowerment Process Report

Group	District	Division	Month
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**Individuals Members**

Examples of Change	No.	Name	Changes Observed	Background/Remarks
<ul style="list-style-type: none"> <li>• Participation in group activity improved</li> <li>• Became confident in presentation</li> <li>• Became less shy in front of others</li> <li>• Became more social to others</li> <li>• Became better in self-explanation</li> <li>• Tried new ideas by him/herself</li> <li>• Taught what he/she learnt to others</li> <li>• Realized own hidden talent</li> <li>• Became respected by others</li> <li>• Became disciplined</li> <li>• Attend to other functions</li> <li>• Started to go to a formal school/studying</li> <li>• Got employment</li> <li>• Got more income</li> <li>• Got more time to try other new things</li> <li>• More diversified farm/ GA activities</li> </ul>	1			
	2			
	3			
	4			
	5			



**Group**

Examples of Change	No.	Changes Observed	Background/Remarks
<ul style="list-style-type: none"> <li>• New bylaw/reinforced existing bylaw</li> <li>• Time management improved</li> <li>• More cohesive</li> <li>• Full participation by all members</li> <li>• More participation in decision making</li> <li>• Less dominance of group officials</li> <li>• improved leadership skill</li> <li>• Started new group activities/ GAs</li> <li>• increase of group fund</li> <li>• Applied/Acquired fund/assistance</li> </ul>	1		
	2		
	3		
<ul style="list-style-type: none"> <li>• More transparent in fund management</li> <li>• Group fund accounting improved</li> <li>• Less disparity among the members</li> <li>• Participated in community events</li> <li>• Became popular with the neighbors</li> <li>• increase of members</li> <li>• Related to the formation of new group</li> </ul>	4		
	5		


Note & Report when the changes were observed

Annex 3-7. Group Location Map

Name of FFS:	
District:	
Facilitator:	

Legend:	
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**MODULE 2 PROFILE FORMAT – INVESTMENT COSTS**

ENTERPRICE TITLE: \_\_\_\_\_ Date: \_\_\_\_\_

COMMUNITY: \_\_\_\_\_ ORGANISATION: \_\_\_\_\_

INVESTMENT (Item)	UNIT OF MEASUREMENT	QUANTITY	COST PER UNIT	TOTAL INVESTMENT		LIFE OF ITEM (years)	SAVINGS VALUE		ANNUAL INVESTMENT COST 11 = (D-10)/8
				TOTAL 5 = 3*4	APPLICANT CONTRIBUTION 6		PER UNIT 9	TOTAL 10 = 9*8	
1	2	3	4			8			
<b>3.1.A. GOODS – MATERIALS</b>									
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
<b>3.1 SUBTOTAL - GOODS</b>									
<b>3.1.B. LABOUR</b>									
1.									
2.									
3.									
4.									
<b>SUBTOTAL - LABOUR</b>									
<b>TOTAL</b>									



## MODULE 2 PROFILE FORMAT

### INCOME AND OPERATING COSTS PER ACTIVITY

Complete this page for each product, crop or activity of the project  
When existing activities are affected, complete this page for activities with and without project

Production/Activity:

UNIT OF PRODUCTION: \_\_\_\_\_ NO. OF UNITS OF PRODUCTION \_\_\_\_\_  
(1) (2)

DURATION OF EACH CYCLE (in months to a max. of 12) \_\_\_\_\_ NO. OF CYCLES PER YEAR: \_\_\_\_\_  
(3) (4)

INCOME					
INCOME ITEM 5	UNIT OF SALE (kg, qq, etc.) 6	OUTPUT/UNIT OF PRODUCTION/CYCLE (units sold) 7	SALE PRICE (price/unit) 8	TRANSPORT COST (cost/unit) 9	TOTAL INCOME PER CYCLE $10=7 \times (8-9)$
1.					
2.					
3.					
INCOME PER UNIT OF PRODUCTION PER CYCLE (11)					
INCOME PER UNIT OF PRODUCTION PER YEAR (12) = (11) x cycles per year (4)					
VARIABLE OPERATING COSTS					
INPUTS/MATERIALS 13	UNIT (kg, head, etc.) 14	QUANTITY/UNIT OF PRODN/ CYCLE 15	COST PER UNIT 16	TRANSPORT COST/UNIT 17	TOTAL COST PER CYCLE $18=15 \times (16+17)$
1.					
2.					
3.					
4.					
5.					
6.					
COST OF MATERIALS PER UNIT OF PRODUCTION (19)					
LABOUR 20	NUMBER OF PERSONS 21	WORK PERIOD (day, month) 22	NUMBER OF PERIODS PER CYCLE 23	COST PER PERIOD 24	TOTAL COST PER CYCLE $25=21 \times 23 \times 24$
1.					
2.					
3.					
4.					
LABOUR COST PER UNIT OF PRODUCTION PER CYCLE (26)					
VARIABLE COST PER UNIT OF PRODUCTION PER CYCLE (27) = (19) + (26)					
VARIABLE COST PER UNIT OF PRODUCTION PER YEAR (28) = (27) x cycles per year (4)					
INCOME MINUS VARIABLE COST: PER UNIT OF PRODUCTION PER YEAR (29) = (12) - (28)					



**MODULE 2 PROFILE FORMAT - TOTAL INCOME AND COSTS**

When activities with and without project are considered, total figures of activities without project must be subtracted from total figures of activities with project

PRODUCT OR ACTIVITY (page 3: first line)	NO. OF UNITS OF PRODUCTION (page 3: point 2)	INCOME		VARIABLE COSTS		INCOME MINUS VARIABLE COST	
		PER UNIT/YEAR (page 3: point 12)	TOTAL 3 = 2x2	PER UNIT/YEAR (page 3: point 28)	TOTAL 5 = 3x4	PER UNIT/YEAR (page 3: point 29)	TOTAL 7 = 3x6
1.	1	2		4		6	
2.							
3.							
4.							
5.							
6.							
7.							
<b>TOTAL PER YEAR</b>							

GENERAL COSTS (entire project)	UNIT (year, months, etc.)	NUMBER OF UNITS/YEAR	COST PER UNIT	TOTAL COST PER YEAR
8	9	10	11	12-10x11
1.				
2.				
3.				
4.				
5.				
<b>TOTAL GENERAL COSTS PER YEAR</b>				







### 3-9. Final Session Report

Name of FFS Group: \_\_\_\_\_

District: \_\_\_\_\_

Division: \_\_\_\_\_

Name of Facilitators: \_\_\_\_\_

**3-9-1. Ballot Box Exercise**

No	Questions	No of Members	
		Correct	Wrong
1			
2			
3			
4			
5			
6			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

**Result of Discussion/Observation/Recommendation:**

--



**Result of Discussion 2: Which one seems more suitable for your farm?**

**Result of Discussion 3: And why do you think so?**

**Result of Discussion 4: Advantage of PCE**

**Result of Discussion 5: Advantage of AESA**

**Other Observation/Recommendation:**



### 3-9-3. Result of Cost Benefit Analysis

#### Calculation of total expenditure

	Plot 1	Plot 2	Plot 3
Seeds	Ksh.	Ksh.	Ksh.
Manure	Ksh.	Ksh.	Ksh.
Fertiliser	Ksh.	Ksh.	Ksh.
Other farm input	Ksh.	Ksh.	Ksh.
Total	Ksh.	Ksh.	Ksh.

#### Cost Benefit Analysis

	Plot 1	Plot 2	Plot 3
Yield	Kg	Kg	Kg
Price* per kg	Ksh.	Ksh.	Ksh.
Total Value	Ksh.	Ksh.	Ksh.
Total Expenditure	Ksh.	Ksh.	Ksh.
Profit	Ksh.	Ksh.	Ksh.

#### Quantification

	Plot 1	Plot 2	Plot 3
Quantified yield per acre	Kg	Kg	Kg
Quantified product value per acre (1)	Ksh.	Ksh.	Ksh.
Quantified cost/expenditure per acre (2)	Ksh.	Ksh.	Ksh.
Quantified profit per acre (1) - (2)	Ksh.	Ksh.	Ksh.

#### Result of Discussion/ Conclusions/ Recommendations:

--

### 3-9-4. Result of Self Evaluation Session

Question 1: Most EXCITING experiences by the members:

	Most exciting experiences
1	
2	
3	
4	
5	
6	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

**Question 2: Most disappointing experiences by the members:**

	Most disappointing experiences
1	
2	
3	
4	
5	
6	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	





**Question 5: Changes in the MEMBERS' FARM:**

Changed Where?	Before FFS	After FFS

**Observation/ Comments/ Recommendations:**

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**Question 6: Overall evaluation of the Livelihood Farmer Field School**

5. Very Good      4. Good      3. Fair      2. Bad      1. Very bad

**Observation/ Comments/ Recommendations:**

### 3-9-5. Result of Way Forward Session

#### 1. PCE/AESA

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#### 2. IGA

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#### 3. FFS

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**4. Other activities**

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**5. Proposed Action Plan and the Level of Group Commitment**

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**6. Observations/Recommendations/Comments by Facilitator:**

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## Annex 3-10. RuralInvest Module 3 Format

**Beneficiary/Group Analysis**

Date: \_\_\_\_\_

Project Name: \_\_\_\_\_

Name of LFFS: \_\_\_\_\_

Name of Cluster: \_\_\_\_\_

Name of Representative of the Cluster: \_\_\_\_\_

Location: \_\_\_\_\_ Division: \_\_\_\_\_

District: \_\_\_\_\_ Province: \_\_\_\_\_

Number of families in applicant group: \_\_\_\_\_

Investment Cost : Total Cost \_\_\_\_\_ Cost per family: \_\_\_\_\_

Prepared by: \_\_\_\_\_ Organisation: \_\_\_\_\_ Tel.: \_\_\_\_\_

**Description of Beneficiaries****No of Beneficiaries****Direct beneficiaries**

Men	
Women	
Children	
Total	
Families	

**Indirect beneficiary**

Men	
Women	
Children	
Total	
Families	



### Qualitative Analysis

**Background**

**Project Objective**

**Principal Activities**

**Technologies to be utilised**

**Technical assistance and training requirements**

<b>Environmental sustainability/impact</b>
<b>Anticipated Market</b>
<b>Organization and management</b>
<b>Principal assumptions and risks</b>
<b>Comments/remarks from the LFFS Facilitators</b>







### General Costs

#### SUPPLY AND SERVICES

DESCRIPTION 1	UNIT TYPE 2	NO OF UNITS 3	UNIT COST 4	TOTAL COST		
				TOTAL 5 = 3x4	OWN RESOURCES 6	EXTERNAL RESOURCES 7 = 5-6
1.						
2.						
3.						
4.						
5.						
<b>TOTAL</b>						

#### PERSONNEL

DESCRIPTION 1	UNIT TYPE 2	NO OF UNITS 3	UNIT COST 4	TOTAL COST		
				TOTAL 5 = 3x4	OWN RESOURCES 6	EXTERNAL RESOURCES 7 = 5-6
1.						
2.						
3.						
4.						
5.						
<b>TOTAL</b>						

















## Annex 4. Example of TOF programme for Extension Facilitators

DAY	TIMES	TOPIC	FACILITATOR
SUNDAY		ARRIVAL	
Monday	8.00-10.00	Welcome address Outline of course programme Overview of the project and workshop objectives Overview FFS in forest extension Official opening	
	<b>10.00-10.30</b>	<b>BREAK</b>	
	10.30-1.00	Participatory introduction of participants Leveling of expectation Setting of learning norms Participants grouping and class Functions of host team Ballot box exercise	
	<b>1.00-2.00</b>	<b>LUNCH</b>	
	2.00-4.00	Introduction to FFS methodology (background to FFS) What is FFS Objective of FFS Principles of FFS	
	<b>4.00-4.20</b>	<b>BREAK</b>	
	4.20-6.00	Key characteristics of FFS approach Group dynamic activity (Nine dot game)	

DAY	TIMES	TOPIC	FACILITATOR
Tuesday	8.00-8.20	Recapitulation	Host team
	8.20-10.00	Concept of ecosystem Field work on ecosystem concept	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Presentation and discussion of field work Concept of what is this/what is that? Field exercise Field work presentation	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	Concept of AESA Steps of conducting AESA Field activity on AESA Field work processing	
	<b>4.00-4.20</b>	<b>BREAK</b>	<b>Host team</b>
4.20-6.00	Presentation of field work		

DAY	TIMES	TOPIC	FACILITATOR
Wednesday	8.00-8.20	Recapitulation	Host team
	8.20-10.00	Participatory discussion on forest policy	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Principles of experimentation Introduction to Participatory Technology Development (PTD) Steps in establishing PTD in FFS sites	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	Field Exercise on PTDs Field work processing and presentation	
	<b>4.00-4.20</b>	<b>BREAK</b>	<b>Host team</b>
	4.20-6.00	Examples of Forestry PTDs & Livelihoods PTD (Activity catalogue)	

DAY	TIMES	TOPIC	FACILITATOR
Thursday	8.00-8.20	Recapitulation	Host team
	8.20-10.00	Participatory discussion on group dynamics	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Participatory discussion on special topics concept Concept of participation	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	Conflict management Lessons learnt on FFS and experience-sharing Video show on FFS	
	<b>4.00-4.20</b>	<b>BREAK</b>	<b>Host team</b>
	4.20-6.00	Brief on FFS Field Visit	

DAY	TIMES	TOPIC	FACILITATOR
Friday	8.00-8.20	Recapitulation	Host team
	8.20 -1.00	Field visit: (i) Subuku FFS (ii) Ogligei FFS	All
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	Processing of data from field activity	All
	<b>4.00- 4.20</b>	<b>BREAK</b>	<b>Host team</b>
	4.20- 6.00	Presentation of feedback from field visit	All

DAY	TIMES	TOPIC	FACILITATOR
Saturday	8.00- 8.20	Recapitulation	Host team
	8.20 - 10.00	Introduction to non-formal education methods	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30- 1.00	HIV and AIDS Gender	
	<b>1.00- 2.00</b>	<b>LUNCH</b>	<b>Host team</b>
		FREE	

DAY	TIMES	TOPIC	FACILITATOR
Monday	8.00-8.20	Recapitulation	Host team
	8.20-10.00	Steps in conducting FFS implementation <ul style="list-style-type: none"> <li>• Classical approach</li> <li>• Steps in Livelihood FFS approach</li> </ul>	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Ground working <ul style="list-style-type: none"> <li>• Village Immersion ("Do-it-yourself-in-the-Village")</li> <li>• Formation of new groups</li> <li>• Selection from existing groups</li> </ul> Selection of participants Site and host farmer selection Learning site preparations & stationeries	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	FFS curriculum Field school schedule	
	<b>4.00-4.20</b>	<b>BREAK</b>	<b>Host team</b>
	4.20-6.00	Drug and substance abuse	

DAY	TIMES	TOPIC	FACILITATOR
Tuesday	8.00-8.20	Recapitulation	Host team
	8.20-10.00	Participatory discussion on <ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Folk media</li> </ul>	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Participatory Discussion on <ul style="list-style-type: none"> <li>• Facilitation Skills</li> <li>• Leadership skills</li> </ul>	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	LFFS management formats Participatory Monitoring and Evaluation (P.M. &E)	
	<b>4.00-4.20</b>	<b>BREAK</b>	<b>Host team</b>
	4.20-6.00	P.M. & E continued Ballot Box Exercise Brief on FFS Field Visit	

DAY	TIMES	TOPIC	FACILITATOR
Wednesday	8.00-8.20	Recapitulation	Host team
	8.20 -1.00	Field visit: (i) Thairira FFS (ii) Kikapu FFS	All
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	Processing of data from field activity	All
	<b>4.00- 4.20</b>	<b>BREAK</b>	<b>Host team</b>
4.20- 6.00	Presentation of feedback from field visit	All	



DAY	TIMES	TOPIC	FACILITATOR
Thursday	8.00-8.20	Recapitulation	Host team
	8.20-10.00	Participatory Discussion on • Entrepreneurship	
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Participatory discussion on FFS - • Field days • Graduation • Post graduation activities • Networking & collaboration in FFS	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>Host team</b>
	2.00-4.00	Participatory discussion on • Grant Proposal writing • Finalization of FFS curriculum and action plan	
	<b>4.00-4.20</b>	<b>BREAK</b>	<b>Host team</b>
	4.20-6.00	Way forward/Development of action plan Rehearsal of Mini FFS	

DAY	TIMES	TOPIC	FACILITATOR
Friday	8.00-8.20	Recapitulation Presentation of action plans	Host team
	<b>10.00-10.30</b>	<b>BREAK</b>	<b>Host team</b>
	10.30-1.00	Implementation framework Course Evaluation	
	<b>1.00-2.00</b>	<b>LUNCH</b>	<b>ALL</b>
	2.00-4.00	Presentation of folk media & mini FFS by participants Awarding of certificates Official closing	
SATURDAY		DEPARTURE	

## Annex 5. Example of TOF Programme for Farmer Facilitators

DAY	TIMES	TOPIC	FACILITATOR
Monday	8:00-10:15	Official opening Overview of TOF programme Introduction of participants Leveling of expectation Setting of learning norms Sub-groups & function of host team Overview of the FFS approach	ARGO Head
	<b>10:15-10:30</b>	<b>BREAK</b>	<b>Host team</b>
	10:30-12:30	FFS Time table FFS learning site Host farm	
	<b>12:30-14:00</b>	<b>LUNCH</b>	<b>Host team</b>
	14:00-15:30	Facilitation What is this what is that?	
	<b>15:30-15:45</b>	<b>BREAK</b>	<b>Host team</b>
	15:45-17:00	Concept & Importance of AESA	

DAY	TIMES	TOPIC	FACILITATOR
Tuesday	08:00-08:15	Recapitulation	Host team
	08:15-10:15	AESA practical session Principle of experimentation	
	<b>10:15-10:30</b>	<b>BREAK</b>	<b>Host team</b>
	10:30-12:30	Case study on experimental design Examples of experimental design	
	<b>12:30-14:00</b>	<b>LUNCH</b>	<b>Host team</b>
	14:00-15:30	Participatory discussion on agricultural & forestry enterprises	
	<b>15:30-15:45</b>	<b>BREAK</b>	<b>Host team</b>
	15:45-17:00	Result analysis Field visit briefings Recapitulation	

DAY	TIMES	TOPIC	FACILITATOR
Wednesday	06:30	Departure to FFS site	Host team
	09:00-12:30	Visit FFS group	
	<b>12:30-14:00</b>	<b>LUNCH</b>	<b>Host team</b>
	14:00-17:00	Feedback of FFS activities Experience sharing	

DAY	TIMES	TOPIC	FACILITATOR
Tuesday	08:00-08:15	Recapitulation	Host team
	08:15-10:15	Farming as business Income Generating Activities Cost Benefit Analysis	
	<b>10:15-10:30</b>	<b>BREAK</b>	<b>Host team</b>
	10:30-12:30	Record keeping Learning Proposal Weekly Report	
	<b>12:30-14:00</b>	<b>LUNCH</b>	<b>Host team</b>
	14:00-15:30	Group dynamics / Folk Media Exchange Visit	
	<b>15:30-15:45</b>	<b>BREAK</b>	<b>Host team</b>
	15:45-17:00	Field day Evaluation of FFS	

DAY	TIMES	TOPIC	FACILITATOR
Friday	08:00-08:15	Recapitulation	Host team
	08:15-10:15	Graduation Event Calendar Participatory Discussions on Post graduation activities	
	<b>10:15-10:30</b>	<b>BREAK</b>	<b>Host team</b>
	10:30-11:00	Question & Answer Session	
	<b>11:00-14:00</b>	<b>LUNCH</b>	<b>Host team</b>
	14:00-15:30	Preparation of Facilitation Plan Presentation of Facilitation Plan	
	<b>15:30-15:45</b>	<b>BREAK</b>	<b>Host team</b>
	15:45-17:00	Course evaluation Presentation of Folk Media Official closing	

### Reference and Future Reading

Bishop Sambrook, C. (2003) Labour saving technologies and practices for farming and household activities in Eastern and Southern Africa. Rome, IFAD.

Bishop Sambrook, C. et al. (2004) Conservation agriculture as labour saving practice for vulnerable households. Rome, FAO/IFAD.

Family Health International (2005) Youth participation guide: assessment, planning, and implementation.

FAO & International Institute of Tropical Agriculture (2004). Manual on integrated soil management and conservation practices.

FAO Links Project (2005) Building on gender, agrobiodiversity and local knowledge: a training manual.

FAO (1996) Integrated pest management (IPM), Field guide on gender and IPM.

FAO (1997) A training of trainers course for IPM farmer trainers.

FAO (1999) A manual to facilitate participatory planning activities for community IPM.

FAO (2000) Guidelines and reference material on integrated soil and nutrient management and conservation for Farmer Field Schools.

FAO (2000) Manual on integrated soil management and conservation practices. FAO Land and Water Bulletin No. 8.

FAO (2000) Small ponds make a big difference, integrating fish with crop and livestock farming.

FAO (2001) Future forests book and Teachers' guide.

FAO (2001) Participatory training in farmers' water management. Training manuals.

FAO (2003, a) HIV/AIDS and the livestock sector. (fact sheet).

FAO (2006, b) HIV/AIDS extension fact sheets.

FAO (2003, c) Optimizing soil moisture for plant production, the significance of soil porosity. FAO Soils Bulletin No. 79. Includes companion CD ROM.

FAO (2004) Addressing HIV/AIDS through agriculture and natural resource sectors: a guide for extension workers.

FAO (2004) Family nutrition guide.

FAO (2004) SEAGA guide for extension workers.

FAO (2006) Impact Assessment Report, FAO JICA, Rome.

FAO/UNDP (2002) The empowerment of Farmer Life Schools.

FAO/UNDP/World Education (2004) Farmer Life School Manual.

IIRR (1992) Crops and Cropping Systems. Metrol Manila, Philippines.

IIRR (1992) Livestock and Poultry Production. Metrol Manila, Philippines.

IIRR (1992) Related Agroforestry Livelihood Technologies. Metrol Manila, Philippines.

IIRR (1992) Seeds and Plant Propagation. Metrol Manila, Philippines.

IIRR (1992) Soil and Water Conservation (SWC) Technologies and Agroforestry Systems. Metrol Manila, Philippines.

IIRR (1992) Trees and Their Management. Metrol Manila, Philippines

IIRR (1998) Sustainable Agriculture Extension Manual for Eastern & Southern Africa. Africa Regional Office, Nairobi, Kenya.

IIRR (2002) Managing Dryland Resources, A manual for Eastern and Southern Africa. Africa Regional Office, Nairobi, Kenya

International Potato Center (1999) Farmer Field School for Integrated Crop Management of Sweet potato.

Kenya/Japan Social Forestry Training Project (1991) Social Forestry Techniques. Kitui, Kenya.

Kim Groeneweg, Gertrude Buyu, Danne Romney and Bruno Minjauw (2006) Livestock Farmer Field Schools, Guidelines for Facilitation and Technical Manual. Wolvenstraat 72, 3512 CH Utrecht, Netherlands, ILRI, Nairobi, Kenya.

Peace Corps (2000) Life skills manual.

The Farm Level Applied Research Methods for East and Southern Africa GCP/RAF/334/SWE (2001) A Study Guide for Farmer Field Schools, Water harvesting and Soil Moisture Retention. Ministry of Agriculture and Rural Development, Kenya. FARMESA, Harare, Zimbabwe.

UNICEF & Department of Health South Africa (2001) South African National Guidelines for People Living with TB, HIV/AIDS, and other Chronic Debilitating Conditions.

WFP (2000) WFP Guide to Participatory Techniques and Tools.

World Bank (2003) Education and HIV/AIDS: a sourcebook of HIV/AIDS prevention programmes.

World Vision International (2004) ADP toolkit for HIV/AIDS programming.







The positive experience in implementing the Intensified Social Forestry Project in Semi-Arid Areas in Kenya has resulted in the adoption of the Farmer Field School (FFS) platform by Kenya and other countries for their extension programmes as a management tool that can increase the capacity and responsiveness of both the farmers and the institutions that utilize the approach.

This FFS guide was developed for project designers and managers, as well as field practitioners who intend to use the FFS platform for extension and management support to farm forestry or forestry-based livelihood development. In addition to a basic conceptual framework, the guide provides the know-how for managing effective FFS extension activities, and integration of the FAO RuralInvest toolkit and a mobile-phone based monitoring system in the FFS platform.

Cover page painting by Mr Erias Tesfaye, an artist from a rural town in Ethiopia. The painting is provided as a courtesy to the Participatory Forest Management Project in the Belete-Gera Regional Forest Priority Area, JICA.