



# **MANUAL**

## **FARMER FIELD SCHOOL FOR EXTENSION WORKERS**

**MINISTRY OF AGRICULTURE, FORESTRY AND FOOD SECURITY  
(MAFFS)**

**SMALLHOLDER COMMERCIALIZATION PROGRAMME (SCP)**

**GLOBAL AGRICULTURE AND FOOD SECURITY PROGRAMME  
(GAFSP)**

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# **MANUAL**

## **FARMER FIELD SCHOOL FOR EXTENSION WORKERS**

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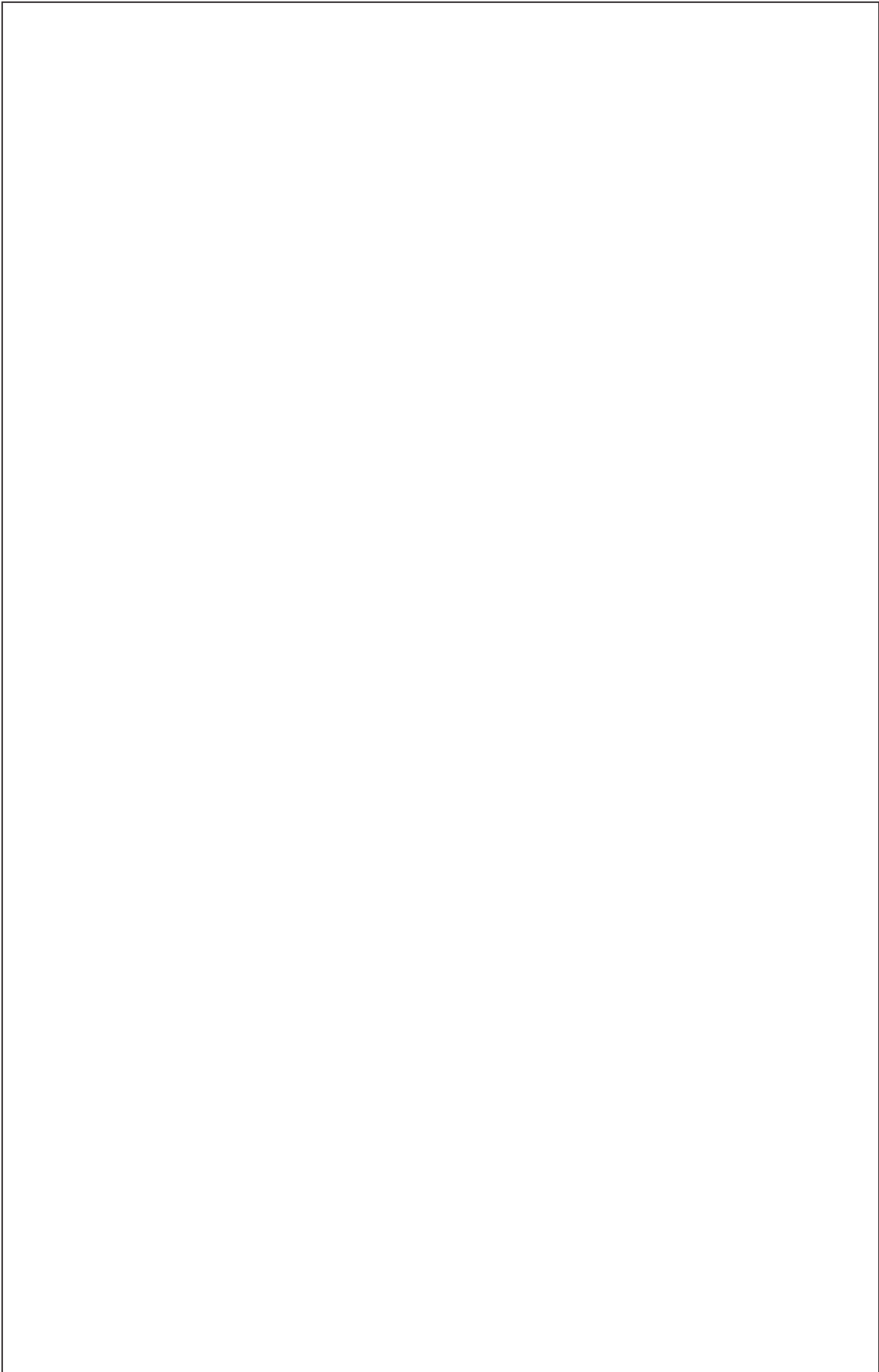
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# FFS MANUAL

## INTRODUCTION





## 1. INTRODUCTION

With the purpose of helping smallholder farmers in building knowledge and skills and making their farms more profitable, the Farm Field School (FFS) approach have been applied in Sierra Leone for over ten years.

FAO and MAFFS have cooperated in the implemented the FFS approach for farmers based on an innovative, participatory and interactive learning approach. As a result, smallholder farmers are learning to investigate and acquiring skills for production technologies and marketing techniques.

This guide is meant for those involved in facilitating the continuation of the learning process for farmers graduated in FFS, grouped in FBOs and managing ABCs. The tools and principles provided here improve planning and analyses of field studies and prepare trainers to facilitate scientific method to farmers.

Farmers are and will be a driving force for community development in Sierra Leone. In the FFS, farmers learn about the basic principles and processes in their crop ecosystem. They do simple studies, compare treatments, and learn through their own observations. They learn to ask and answer questions by finding out themselves.

However, experience has shown that FFS graduates often require follow-up training to develop their newly acquired knowledge and skills according to the local circumstances. The innovation process associated with the use of modern cultivation techniques (sowing, fertilizers, etc.) need to enter the “confirmation phase stage” where farmers can clearly recognize the benefits of using the innovation. Once the confirmation stage is in place, the farmers will be able to integrate the innovation into the routine farming practices and promote the innovation to other farmers in the village.

## 2. THE FFS AS ALTERNATIVE SOURCE FOR PROVIDING EXTENSION SERVICES

The traditional way of transferring technologies to farmers has proved inadequate in complex situations when faster and bigger changes are required during the growing and vegetation period. In many countries, this approach of giving services “top-down” was complex and expensive for small farmers.

Furthermore, farmers in developing countries are characterized by a lack of proper involvement in identifying problems, evaluating and implementing possible solutions.

There is also a trend of traditional extension service providers to become less financed by governments and more commercial in regards to services they offer.

The FFS is an alternative approach that focus on strengthening farmer’s and the rural communities’ capacity in analysis of their production and in identifying their main constraints, as well as in testing possible solutions. By adding their own knowledge to existing information, farmers eventually identify and adopt the most suitable practices and technologies to their farming system. As a result, they are in position

*FFS is a capacity building method based on adult education principles using groups of farmers. The farmers learn through observation and experimentation in their own fields, allowing them to improve management skills and become knowledge experts on their own farms. Farmers are encouraged to handle their own farm decisions in which they apply experiences and test new technologies.*



to become more productive, profitable and responsive to changing conditions.

FFS usually comprises a group of 20–30 farmers who meet regularly over a defined period of time, a crop production season for example, to validate (new) production options with the help of a facilitator.

In the FFS approach, it is vital to identify members of the community that can become lead farmers and in a position to mobilize members and provide feasible facilitation.

Management decisions are made at the end of every meeting. After the end of the crop season, farmers continue to meet and share information inside the group. The idea is for the group to have proper skills and capacity for preparation of eligible production programmes and to provide financial sources for its realization. The sources could vary from the SCP, donor's projects, rural financing institutions, private businesses ready to establish cooperation in various forms, such as contract farming.

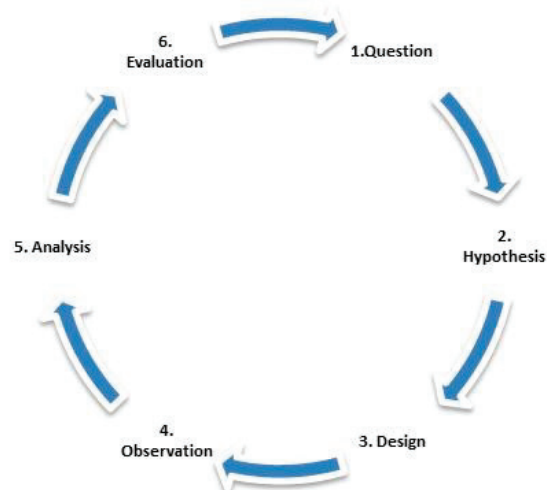
A FFS is a dynamic process, not a goal. It aims at increasing the capacity of farmers to test new technologies in their own fields and assess the results.

### **3. THE LEARNING CYCLE**

The facilitator plays a crucial role in the FFS. If he/she guides too much, the study will be planned how *he/she* had in mind, not according to the participant farmers. Even though the farmers do participate, they are not in charge at the planning stage, and will not have the sense of “ownership” over the process. Conversely, if the facilitator plays a laissez-fair role, leaving everything up to the farmers while keeping to the background, some opportunities for learning will be missed.

The key, it seems, is to provide tools for guiding farmers to use the right methods, and to introduce basic principles for enriching content and understanding. If used correctly, these tools and principles bring forward the potential skills, creativity and knowledge of the group of the participating farmers. This is what facilitating is about. To facilitate FFS, a certain confidence is necessary, which is gained through regular practice and through direct involvement in field activities.

To start we, using an example situation (e.g. introduction of a new variety of tomato) should ask the participants what different steps are needed for conducting a field study on the new variety. Which is the first step? How does it start? After that, what next step should be taken? The process could be depicted in six essential steps resembling an experiential learning cycle.



***People remember:***

- ➔ ***20% of what they hear,***
- ➔ ***40% of what they see,***
- ➔ ***80% of what they discover themselves"***

In the FFS farmers learn about the basic principles and processes in their crop ecosystem. They do simple studies, compare treatments, and learn through their own observations. They learn to ask questions and to answer these questions by finding out themselves.

The FFS functions like a primary school, after the completion of which more serious or more applied activities can start. Experience has shown that FFS graduates often require follow-up training to develop their newly acquired knowledge and skills according to the local circumstances. Farmer studies are a key follow-up activity; community-level planning is another important follow-up activity. Targeted training help farmers in conducting studies in an independent and sound manner.

#### 4. HOW TO USE THIS MANUAL?

The overall goal of the SCP-GAFSP is to help farmers increase their food security and income on sustainable basis. The specific objectives include: (i) reducing the gap between national rice production and demand, (ii) increasing household incomes on a sustainable basis. The methodology of this guide is adapted to the project, and in the implementation it should be taken into account that FFS objectives are in line with the project goals/objectives

This Manual is designed to help facilitators understand FFS approach, organization and considerably facilitate the implementation of FFS in the field. You need to be familiar with the contents of guide in order to use this leader guide effectively. Before you start your FFS, you should read through your notes and the facilitator training materials you received. This will refresh your mind. Before the start of the FFS, it is necessary for the facilitator to read the whole Manual several times. Exercises can be used as prepared. However, it is possible to modify them or adapt depending on the current situation in the field.

During implementation, it is not necessary that all of the exercises in the module be performed. Before the session, it is necessary for the facilitator to read them and be familiar with the exercises for this module. In the field, in accordance with the needs of the group, he/she will decide which exercises ultimately to choose, and how to implement them. You need to choose the most appropriate one for a given situation. Exercises should be prepared in time.

Each FFS is unique and must be flexible but without compromising the FFS approach and key FFS principles. The flexibility should contribute to a better quality of work of FFS, and not to justify an incomplete application FFS methodology and curriculum.

In general, people feel more satisfied and achieve more when they can actively contribute to the process of learning. So learning is not just about a teacher giving information. Learning is an active process where a learner goes through an experience and learns from it. There are many ways that we can think of to involve learners in their learning. As much as possible, involve participants in planning project activities. Successful learning will depend on how well you involve members in hands-on activities. Instead of being told “the answers,” they are presented with a question, problem, situation, or activity which they must make sense of for themselves. Try to develop Inquiry. They will have a greater commitment to the project if they have been involved in its planning.

The methods mentioned in this part emphasize active involvement as an effective part of learning. At the same time, we have to remember that participation is optional in some cases. We cannot force people to speak up if they don't want to. As a facilitator, we have to explore other approaches to mobilize their active participation in the programme. If our learners are not so interested in the activities, we have to ask ourselves what is wrong with the approach. Are there better ways of achieving the same objective?” Don't ask “what is wrong with our farmers?”. As you begin to use this process, it may take more time to prepare than demonstration/exercises for meeting. Yet, you will soon find the time spent is well worth the effort.

## 5. WHAT IS IN THIS MANUAL?

This guide provides the "how to", while the field remains the main learning base. It is intended for Facilitators for the purpose of easier understanding and implementation of FFS on project. It consists of 10 modules:

- The **first module** is the Overview of the FFS approach for the purpose of better understanding of FFS approach, preparation and organization of FFS establishment of FFS. It is explained how to start gradually with activities in the process of preparation.
- In the **second module** there are exercises to get started with group work, its organization and the creation of awareness on FFS, build unity and cooperation among the participants.
- In the **third module**, the exercises are designed to develop participants' knowledge of the environment in which farm commercialization is taking place, to create awareness about concept of farming as a business, understand some of the most important aspects of a farm business, understand the costs and income, profits, enterprises profitability and steps to make farm business profitable. The exercises in this module can be implemented immediately after start-up. If you do not have time for these modules they can be left for later and organized during the stage of preparation and implementation of the FFS.
- The **fourth module** contains designed exercises as tools how to identify farming problems and opportunities, related to income generation through agricultural activities. In this module you can analyse the cause of the problems, opportunities, identify a range of potential options, and it explains how to select the most interesting options for studying or testing in the FFS. Experimentation is explained in FFS through study fields, planning and design, monitoring and evaluation of comparative experiments and after exercise for developing the learning program. This exercise should be corner stone for future activities.
- The **fifth module** details the maintenance of regular FFS meetings, typical FFS Session is explained and major things relating to regular meetings within FFS. In this module are given explanations to maintain core activity related to the Agro-Ecosystem Analysis (AESAs) Facilitation of Topics of Day, Special Topics and Group dynamics. For all activities under regular sessions practical exercises are added and provided how they can be performed except for group dynamics. Exercises for the group dynamic are not given in the Manual as facilitators are already familiar with a number of exercises in group dynamics and are familiar with their use.
- In the **sixth module** is given an explanation regarding the Keeping of records and exercises in order to understand importance of keeping farm records, to know which records to keep and how to keep them, to understand use of records and their importance in farm management.
- The **seventh module** provides examples of exercises to be carried out in the post-harvest cycle. This module contains also the evaluation of the field experiment and analysis of the results. The aim of the exercises is to learn how to capture their experiences over the learning cycle and draw from them ways to make future progress in their farm and the need for follow-up assistance and changes in future cycles FFS. Exercises are given for a follow-up action plan and explanations related to graduation and the awarding of certificates.

- The topic of the **eighth module** is preparing a farm business plan. In this module, exercises are designed to help the participants to prepare a business plan for their individual farm and help them to write a basic business plan for a selected enterprise. Preparing a business plan is usually not in the planned program during the first year of FFS but it can be arranged, if necessary, and based on requirements of certain groups.
- The **ninth module** gives the exercises that should help a facilitator to deliver some general issues/topics related to soil, plant life, water regime, plant nutrients, pest and disease control. In order to better understand the life of plants, it is necessary that the farmers, in addition to know how, also have knowledge regarding the understanding of some of the general principles relating to plants and soil in order to help manage them.
- The **tenth module** puts food and nutrition security in the focus. It covers concepts on nutrition and suggests simple practices in order to help FFS members understand the concepts and adopt appropriate practices in their daily activities and in food production to contribute to healthy eating and lifestyle. This in turn will ensure that agriculture production is linked to improved diets and the food and nutrition situation of the rural populations will improve.

## 6. TO THE FACILITATOR

Your first task as a FFS facilitator is to encourage farmers in your area to participate in the programme. The purpose is to work with farmers to help them build knowledge and skills to make their farms more profitable. They will do this by learning about agriculture production and farm business management. And they will do this where they live. The FFS programme takes the school to the farmers.

Before you start your FFS, you should read through your notes and the facilitator training materials you received. This will refresh your mind. Next you will need to organize a venue to hold the FFS. Next you should go through the FFS Training manual. There are many exercises that you will need to prepare for. Read through them as carefully as you can. As you know, each session has a number of exercises. Some of them require preparation several days in advance.

Remember, the keys to success in a Farm Fields School are active participation and “learning by doing”. You and the farmer participants are working together to learn together about agriculture production and farm business management.

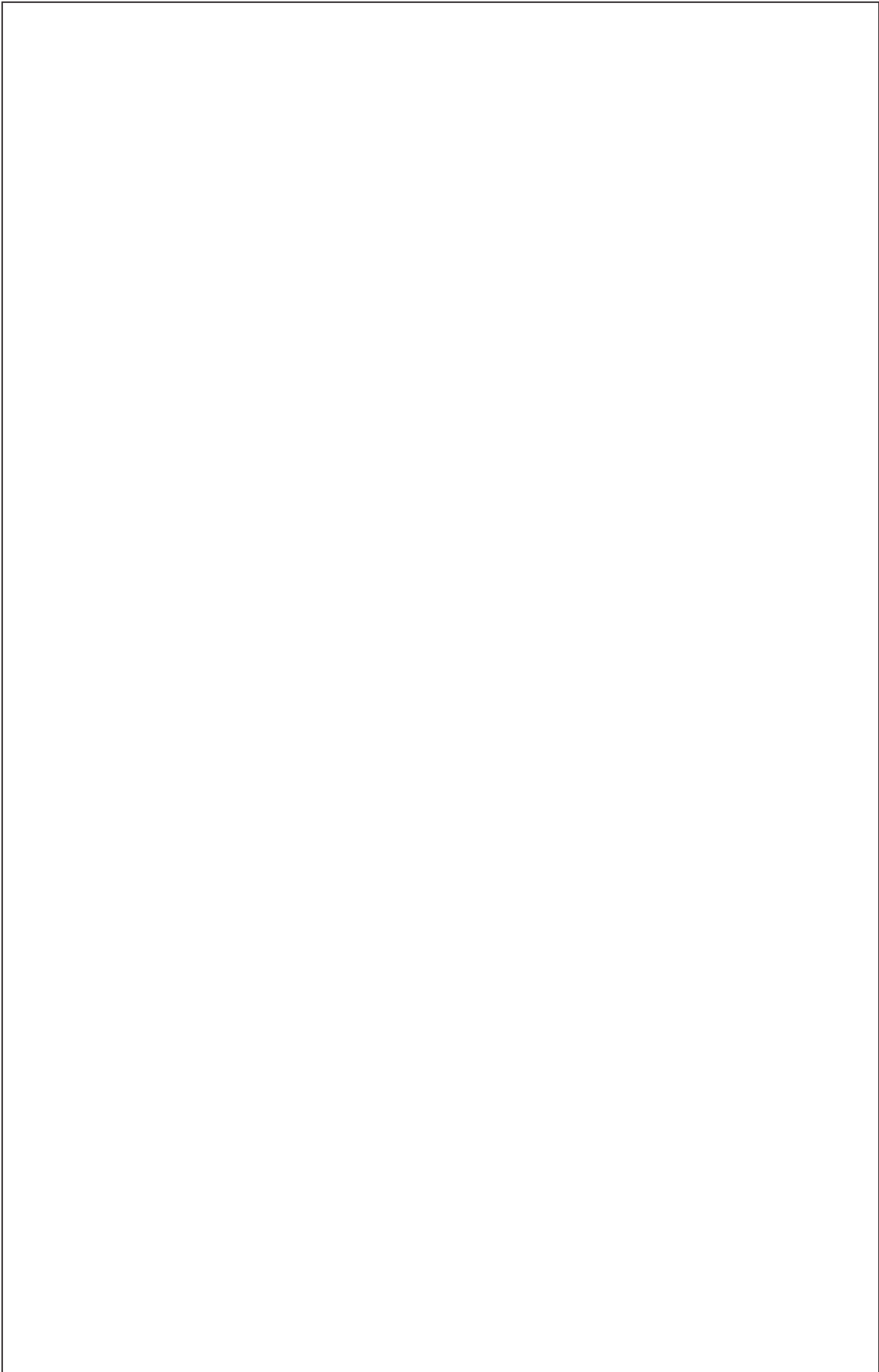
The type of interaction between a facilitator and participants determines the relationship and trust that develops, and affects the types of issues and information that participants are willing to discuss in an open manner. Therefore, facilitators must be constantly aware of their own attitudes and behaviour. The FFS should contribute to improvement of the knowledge, skills and attitudes of participants, and to be able to improve income and in this way meet their life/existential needs. Also, never forget respect is main human need!

You have a great chance to help, as facilitator, many people in improving long-term food security and household income. With better incomes they can provide better benefit for them and their families. Do not miss this opportunity! Make a maximum effort to ensure that the FFS is successfully implemented. There is a saying „there is always a way for those who want to find a way, and for those who don't want to find the way, there is always an excuse“. It will not always be easy but the reward at the end of the journey is worth the effort!

# MODULE 1

## OVERVIEW OF THE FFS APPROACH







## MODULE 1 – OVERVIEW OF THE FARMER FIELD SCHOOL APPROACH

### 1. OBJECTIVES OF THE FFS

The specific objectives of FFS include:

- empowering farmers with knowledge and skills to make them experts in their own fields;
- sharpening the farmers' ability to make critical and informed decisions so that they can make their farming profitable and sustainable;
- sensitising farmers to new ways of thinking and problem solving;
- helping farmers learn how to organize themselves and their communities;
- enhancing the relationships between farmers, extension workers and researchers, so they work together to test, assess and adapt a variety of options within the specific local conditions. In other words, enabling farmers to identify problems affecting crop yields and marketing.

#### 1.1 BASIC PRINCIPLES AND CORE ACTIVITIES OF FFS

It is important to remind the basic principles and core activities of the FFS approach in terms of its participatory and collaborative nature, frequency of meeting and team building.

##### BASIC PRINCIPLES

Every FFS is guided by the following principles:

1. **LEARNING BY DOING:** Adults do not change their behaviour and practices just because someone tells them what to do. They learn better through experience than from passive listening at lectures or demonstrations. Discovery-based learning enables the farmers:
  - to develop a feeling of ownership, and
  - to gain the confidence that they are able to reproduce the activities and results on their own farm.
2. **FARMER-LED LEARNING ACTIVITIES:** Farmers together with the leading farmer, decide:
  - what is relevant to them and what they want the FFS to address;
  - if the information is relevant and tailored to their actual needs;
  - the facilitator simply guides the farmers through their learning process by creating participatory exercises to provide farmers with new experiences.
3. **LEARNING FROM MISTAKES:** Every change in the production and marketing techniques, as well in behaviour of the FFS members, requires time and patience. Learning is an evolutionary process characterized by free and open communication, confrontation, acceptance, respect and the right to make mistakes. The right to make mistakes is the key as people more often learned from mistakes than from successes. Each person's experience of reality is unique.
4. **LEARN HOW TO LEARN:** Farmers are learning the necessary skills:
  - to improve their ability to observe and analyse their own problems;



- to make conscious decisions;
- learn how they can educate and develop themselves further;

**5. PROBLEM-POSING/PROBLEM-SOLVING:** Problems are presented as challenges, not constraints. Farmer groups learn different analytical methods to help them gain the ability to identify and solve any problem they may encounter in the field.

**6. THE FARMER'S FIELD IS THE LEARNING GROUND:** The field (crop production system) is the main learning tool. All activities are organized around it. Farmers learn directly from what they observe, collect and experience in their fields instead of text books, pictures or other extension materials.

Farmers also produce their own learning materials (drawings, etc.) based on what they observe. The advantages of these home-made materials are:

- they are consistent with local conditions;
- inexpensive to develop;
- owned by the farmers.

**7. LEADING FARMERS ARE FACILITATORS, NOT TEACHERS:** Leading farmers need to be trained to take the role of facilitators at FFS. Their role is to guide the learning process and not to teach. The facilitator contributes to the discussions and aims to reach consensus on what actions need to be taken.

Extension specialists and researchers are invited to provide technical and methodological backstopping support to an FFS and also learn to work in a participatory and consultative way with farmers.

**8. UNITY IS STRENGTH:** Empowerment through collective action is essential. Farmers united in a group have more power than individuals. Also, when recognized as an active member within a group, the social role of individuals within a community is enhanced.

The combination of two or more minds is often more successful than one mind on its own. The FFS expresses this as  $1 + 1 = 3$ , i.e. one mind + one mind creates a new, third mind.

**9. EVERY FFS IS UNIQUE:** The learning topics within the FFS should be chosen by the community. Training activities must be based on existing gaps in the community's knowledge and skills and should also take into consideration its level of understanding.

Every group is different and has its own needs and realities. As participants develop their own content, each FFS develop itself in unique organization.

**10. SYSTEMATIC TRAINING PROCESS:** All FFS follow the same systematic training process. The key steps are:

- observation;
- group discussion;
- analysis;
- decision making, and
- action planning.

The FFS experience has shown that the best results are achieved with weekly meetings. Longer gaps can slow down the learning process. The length of the FFS cycle depends on the focal activity. Crop based FFS usually base their length on the cycle of production: from production planning, land preparation to harvesting and post-harvest activities.

FFS increasingly include marketing and processing activities which may lengthen the FFS learning cycle.



## 1.2 CORE ACTIVITIES

**AGRO-ECOSYSTEM ANALYSIS (AESA):** this is the cornerstone of the FFS approach and is based on the ecosystem concept, in which each element in the field has its own, unique role. It involves:

Through regular **field observation** of a crop system, AESA exercises help establish the interaction between crops as well as other living and non-living factors.

**FIELD COMPARATIVE EXPERIMENTS:** field comparative experimentation is a collective investigation process to solve local problems and to enhance farmers' observational and analytical skills and to investigate the cause and effect of major production problems. Simple experiments are carried out to:

- enhance farmers' observational and analytical skills;
- investigate the cause and effect of major production problems.

They help farmers become experts and to design simple and practical experiments to test and select the best solution to their problems.

Experiments also encourage the validation and adoption of new technologies or practices. In this case, the experiments compare farmer practices with a set of available solutions presented either by the facilitator, researchers or other farmers. By analysing the results and developing recording skills, farmers are able to decide which solution (technology or practice) is best suited to their situation.

Each experiment should include a **cost–benefit analysis** using the data recorded during AESA exercises, as farmers often do not know whether they operate at a profit or loss. Farmers can better understand the difference between production and productivity, if the costs per unit produced are calculated. In this way the farmers will be able to determine the efficiency of their own production.

Besides recording and analysing the financial costs and benefits of the options tested in the experiment, other indicators to validate the results of the experiment should be identified by FFS participants (e.g. labour needs, length and speed of growth, accessibility). Precise record keeping of indicators is required to monitor and evaluate the performance of a treatment or technology.

**FACILITATION OF SPECIAL TOPICS OR TOPIC OF THE DAY:** Basic technical information is usually needed before any activity can be implemented. Certain activities are too risky to apply without proper expertise or information. The “topic of the day” is used to introduce technical information. The “topic of the day” is to:

- ✓ provide an opportunity for the facilitator or specialist to give theoretical inputs needed for a general understanding of the subject before any activities can be carried out;
- ✓ enhance the farmers’ technical knowledge and present the farmers with information they need at the time they need it;
- ✓ ensure a demand-driven learning process and to level knowledge among the participants;

Time should be allocated in each FFS session to discuss a specific topic relevant to farmers’ needs. If the facilitator lacks the specific expertise, specialists or other farmers can be invited to lead the discussion. The facilitator should target a specific topic at the most relevant time for FFS participants and chose the best participatory approach to facilitate the “special topics” (e.g. focus group discussion, participatory learning exercises, etc.).

**PARTICIPATORY MONITORING AND EVALUATION (PM&E):** To implement the FFS approach, both the participants and facilitator need to be able to continuously assess whether they are making any positive changes and actually achieving the goals set. Monitoring and evaluation (M&E) methods need to be in place to actively observe and analyse situations and performances.

Monitoring and evaluation (M&E) methods have been developed to help FFS participants (facilitators, farmers, service providers) in actively observation and analysis of situations and performances. The M&E methods should help them understand what they are observing. Given the participatory nature of FFS, M&E should also be based on participatory principles. This guide provides guidelines to:

- ✓ monitor and evaluate the FFS performance and assess whether it is achieving its specific objectives;
- ✓ monitor and evaluate specific FFS sessions for self-evaluation purposes;
- ✓ monitor and evaluate a field comparative experiment;

**GROUP DYNAMIC EXERCISES:** Group dynamic exercises are used to create a pleasant learning environment, facilitate learning and create space to reflect and share. They also enhance capacity building in communication skills, problem solving and leadership skills. Some known exercises are to:

- ✓ energise participants;
- ✓ enhance participation;
- ✓ strengthen learning topics;
- ✓ strengthen group work and cohesion;
- ✓ assist in solving conflicts;

### 1.3 ORGANIZATION OF THE FARMER FIELD SCHOOL

The following steps are recommended in the organization of FFS.

#### PHASE 1: PREPARATION

**Step I** Carry out a pre-conditions survey;

**Step II** Training of Facilitators (TOLF)

**Step III** General ground working

- 3.1 Implement an initial survey;
- 3.2 Hold an awareness-raising meeting to introduce the FFS concept;
- 3.3 Identify the focal activity;
- 3.4 Identify the participants;
- 3.5 Identify the learning site;

**Step IV** - Establishing the FFS

1. Participatory introduction of the participants;
2. Levelling of expectations;
3. Identifying the host team;
4. Participatory planning of activities through development of FFS's group action plan (GAP):
  - 4.4.1 Establishing the FFS group;
  - 4.4.2 Problem diagnosis and finding opportunities
  - 4.4.3 Identifying potential solutions/opportunities;
  - 4.4.4 Developing the learning programme;
  - 4.4.5 PM&E plan

#### PHASE 2: FFS IMPLEMENTATION

**Step V** FFS sessions with core activities;

**Step VI** Field days;

**Step VII** Exchange visits;

#### PHASE 3: POST HARVESTING CYCLE

**Step VIII** Follow up of FFS activities;

**Step IX** Establish/create FFS networks.

**1.3.1 PHASE 1 - PREPARATION**

This phase includes the steps leading to the actual implementation of FFS core activities. The extension worker will have to coordinate the facilitator with Steps 1 to 3.

Depending on the circumstances (available time, homogeneous groups, the complexity of the plan), you need a number of meetings for the group to form a GAP. Once you have a plan, it takes time to purchase the necessary inputs; particularly if inputs are purchased through the tender process, which can last several weeks. All this should be kept in mind before organization of FFS in order to start on time, before the season with the organization of FFS and in season at the optimal time to make necessary seasonal activities.

During that period, the extension worker, together with the facilitators, will help the FFS group to be formalized. It must be clear from the beginning, that establishment of FFS does not mean automatically delivery of grant to the FFS. The facilitator should lead in maintenance of cohesion within the group.

**STEP I - CARRYING OUT A PRE-CONDITIONS SURVEY**

Before establishing an FFS in a new region, a simple survey should be performed by the extension worker (or a service provider, if it is the case) to assess the conditions for FFS implementation. This will ensure that the environment is suitable for the approach. Questions to be raised include:

- Would the extension department of the MAFFS support the implementation of FFS? (This is essential as an FFS should be seen as an opportunity to test a new approach, not as a threat to existing systems);
- Are there any other FFS or similar programmes in the region, country or neighbouring countries? (It is important to link FFS wherever possible)
- Are there any FFS trainers available in the region?
- Is FFS a suitable approach to tackling existing problems?
- Are there any cultural barriers to the FFS approach?
- Who is suitable for Core Team of Trainers? (e.g. MAFFS, facilitators, NGOs, experts, etc.) Do they have a guaranteed income? Are they willing to facilitate an FFS?
- How many FFS can be implemented after the first TOF course?

Results of the pre-condition survey will help assess if an FFS is suitable for a particular region. If authorities are supportive and the FFS has been recognized as a potentially appropriate method, the remaining results will help assess the costs and needs for external inputs to determine the level of difficulty in establishing the FFS.

**STEP II - TRAINING OF FACILITATORS (TOF)**

The TOF is a one- to two-week training programme to prepare participants on the principles and core elements of FFS methodology and facilitation skills. Additional training on specific topics (technical and methodological) should be organized in order to further develop their capacity.

**What is a facilitator?** A facilitator is a person who has been trained and has hands-on experience with participatory methodologies and adult learning. The facilitator has the role of creating conditions for farmers to learn through observation and analysis what

they experience. He should encourage farmers to take an active role in their own learning processes.

The process of becoming a facilitator could not be achieved simply by attending the Training of Facilitators (TOF); it is combination of training, retraining and practical experience with managing FFS sessions. As there is some experience among MAFFS extension workers, they will mentor facilitators in performing facilitation exercises.

The facilitators, attending a TOF course, should demonstrate willingness to adopt participatory methods when working with farmers and have an interest in learning about vegetable production. The TOF training should be offered to anyone with an interest to practice and facilitate the FFS approach.

The learning objectives of the TOF are to participants to be aware of the necessary skills and attitudes of a facilitator and how to monitor these qualities, and to examine their own skills and attitudes.

At the end of the TOF, it is expected that the facilitators will be able to understand the differences between facilitation and traditional lecturing, the key characteristics of a facilitator, the importance of open dialogue and how to monitor and evaluate facilitation skills and attitudes.

At the TOF, some questions can be raised, such as:

1. **Why do I want to become a facilitator?** Every potential facilitator should write his/her answer on a pin card and later discuss about the expectations from the TOF event.
2. **What is good facilitator?** The participants can be divided in groups and discuss the qualities of a good facilitator.

The open dialogue, whereby one question is answered by another question to the group, is an essential process for the participants to develop their own analytical and understanding skills. The facilitator should remember to use open questions that cannot be answered with “yes or no”. Posing a closed question means losing a learning opportunity. Examples of open questions are: what is this, why is this so, what has happened since the last field visit, how did it happen, when did it occur?

It is important to have a balance between straight answers and open questions. There are times when straight answers are called for. The facilitator should be willing to share her knowledge and expertise, but he/she should always reiterate that he/she does not always have a straight answer. Providing straight answers do not enhance problem-solving skills.

3. **How to communicate with smallholder farmers?** The trainer introduces a role play of good and bad facilitation, introducing skills and attitudes of a good and bad facilitator. For example, the farmers, listening to the facilitator in the middle of the group, are in passive position; and the question is if they will participate in the discussion. Better results can be achieved if the facilitator takes turns two by two to try and communicate better with the farmers.
4. **How to develop a monitoring sheet?** Participants are asked to develop a simple monitoring and evaluation sheet, which will be used to evaluate the facilitation skills of participants. The sheet will be used for the following FFS test session, where participants will practice their facilitation skills in an on-going FFS. Participants are



asked to identify the most important issues when evaluating the skills and attitudes of their peers.

The following tips can be used as checklist of the characters of a good facilitator:

- ✓ Ability to show warmth, approval and acceptance of trainees;
- ✓ Socially skilled person, with ability to bring the group together and control the learning processes, without controlling the outcome;
- ✓ A manner of teaching that uses the skills and ideas of trainees;
- ✓ Skilled organizer, making sure time schedules are kept and that logistics are well organized ahead of a FFS session;
- ✓ Skilled at noticing and resolving participants' problems;
- ✓ Enthusiasm for learning himself or herself and able to keep an open mind about new ideas and not anticipate outcomes.
- ✓ Focused on learning rather than teaching;
- ✓ Open towards local traditions, knowledge, technology and skills;
- ✓ Flexible and focused at the same time;
- ✓ Knowledgeable about the subjects, with a clear demarcation of own limitations;
- ✓ Opens up dialogues and does not give simple straight answers;
- ✓ Skilled in reflection on subjects as well as processes;

### STEP III - GENERAL GROUND WORKING

Following the TOF, the facilitators must first determine the actual needs of their area. Basic area information is collected using participatory tools to better understand the local production system and enable future M&E.

The following activities should begin in reasonable period, depending on local conditions, ahead of the planned start of the FFS. The steps to follow are:

- A. The initial survey;
- B. The awareness-raising meeting – Introducing the FFS;
- C. Identification of the focal activity – FFS enterprise;
- D. Identification of participants;
- E. Identification of the learning site

**A. The Initial Survey:** Initial contact with the community needs to be established to determine whether the area has potential for a FFS. In many cases, the first step is to talk with the community leaders as they are the route in reaching the community. The first contact with the community leaders is important, the extension worker wants:

- ✓ to get the advice on the possibility of starting a FFS;
- ✓ to identify opportunities for collaboration between the facilitator and community;
- ✓ to get a feeling of the attitudes expected;
- ✓ to plan a date for an awareness-raising meeting with the whole community;

Once there is common agreement, the awareness raising meeting can be planned and the interested farmers, with facilitation of the extension worker (or facilitator), can express their needs and identify common ground. The following steps can be used in during the pre-condition survey:

- 1) Arrange an appointment with the local leaders and facilitators;
- 2) Visit the leaders at their house;

- 3) Initiate a conversation on on-going activities in the community, the successes and problems and, if you think the conditions are suited for an FFS, explain your intentions;
- 4) Level expectations by stressing that FFS is a training methodology and do not provide materials, gifts or presents; and that the FFS aims to work with willing and committed farmers;
- 5) When there is a confidence on the potential for an FFS, a date and site for the sensitization meeting can be arranged;
- 6) Becoming familiar of the environmental and cultural characteristics of the community can contribute for proper actions.

Initial contact with the community is needed to understand the area and the production systems. In most places, community leaders should be contacted first to seek their advice and authorization. Following their approval, the project partners and the facilitator can plan an awareness-raising meeting to introduce the FFS approach to the community.

**B. The Awareness Raising Meeting:** Even if FFS is not new in Sierra Leone, an awareness raising meeting is required for introduction of the FFS approach. There is a need to explain what FFS is and how it works, so that participants know what to expect and can join the FFS. It is very important that the first contact makes a sound and clear impression. The objectives of the meetings could be following:

- ✓ introduce the FFS methodology, with its specific characteristics, to farmers and other community members;
- ✓ provide interested farmers with a clear and real view of the FFS approach so they know what to expect.

**C. Identifying the Focal Activity - FFS Enterprise:** Sufficient time should be used to identify the focus of the FFS activity, in order to avoid involving farmers in activities that are not of interest to them. The selection of the FFS enterprise depends entirely on local farmers' needs and interest.

It is therefore important during the initial survey to analyse the community, identify and its main enterprise and whether they have problems concerning this enterprise.

There are many farmers which have previously been involved in small-scale crop production and from which they benefited little. As the selection of the FFS focal activity depends on farmers' needs and interests, sufficient time need to be devoted in identifying appropriate activities to be carried out.

The problems farmers are facing must be treated as relevant, since they feel the need to look for solutions. For this reason, during the initial survey, it is important to determine the community's main activities and livelihood sources and whether they face significant problems. It should be reached a consensus if the focal activity (enterprise) is suitable in the area and has potential for development.

The objectives of this activity should be to:

- ✓ ensure the FFS is targeting the right activity (enterprise) and problems/opportunities;
- ✓ ensure there is potential to solve these problems/opportunities;
- ✓ ensure both the FFS group and the facilitator have an opportunity to discuss and agree upon the focal activity (enterprise) and problems identified;



**D. Identification of Participants:** Through consultation with the community and with the help of local leaders, approximately 20 participants should be identified. Experiences from other countries, suggest that, in some villages, groups can be formed by 10 pro-active farmers.

It is a real a challenge to reach people who will contribute to the functioning of FFS and will benefit most from their participation. It could be expected that, a mixture of different people will be present (e.g. people involved in decision making, loud people, non-interested ones, etc.)

In the identification process, the facilitator needs to be aware of gender relations and cultural practices within the community. It is important to understand gender relations in respect to the focal activity. There are plenty of examples in rural areas, where women rarely participate in educational activities though often they are performing the essential production tasks.

To select the most appropriate participants, an FFS participant analysis needs to be performed. The following criteria can be used:

- common interest group (i.e. all members have the same enterprise interest);
- the participant has a need to improve production;
- the participant is a decision maker on the farm;
- the enterprise is the main source of income;
- there is no discrimination based on educational and socio-economic levels; the learning process can be hampered by influential personalities who may impose their views and impede participation;
- all participants should live within a relatively short distance of the FFS learning site, preferably in the same village;
- there are no known conflicts between participants;
- the participant must be willing to attend all sessions during the FFS season;
- the participant must be willing to work in a team and share ideas with others, including non-members;
- the participant must be willing to contribute financially, in material inputs or in personal time to the FFS work;
- the participant must be interested in learning and not expect material benefits.

At this stage the tasks in the identified focal activity as well as who should implement these tasks based on age, roles, status, etc. can be discussed. It is very important that all participants understand the classification in order to be developed proper discussion.

The result of the discussions should be presented in the form of a matrix. Each group shall validate the importance of all activities and the matrix should be analysed and accepted by all in a plenary session.

The analysis of the matrix should indicate the profile of the FFS, the participants, etc. It must be explained that the entire family is an indirect member of FFS and the direct FFS participants have the duty to pass what they learn to other family members.

The facilitator should keep in mind that the structure of the group later determines group strategy-action plan. If the group is too heterogeneous and farmers have different

interests (e.g. several potential participants are interested in livestock production, several for perennial crops, several for honey production, several for rice, vegetable production, etc. ...) it will be difficult to find common ground and develop a joint action plan. Consider the possibility of forming two or more FFS that would gather new farmers with similar interests and needs.

It is recommended, at the end of the meeting, to create a first list of the people participating in the FFS.

**E. Identification of the Learning Site:** The FFS is a ‘school without walls’ and the field is the main learning tool. Farmers learn directly from what they see, collect and experience and not from a text book, pictures or other extension materials. The advantages of learning in the field are that the materials are completely relevant to local conditions and the problems are recognised and owned by the farmers.

The FFS group will select a site to conduct meetings. A growing field is also needed as a study object. However, the learning site needs to meet certain criteria to provide suitable conditions. For example:

- the site must be suitable for the enterprise in a given season;
- it must be representative of the problems in the area;
- it must be central and accessible to farmers and facilitators;
- it should be democratically selected by farmers;
- site security should be ensured;
- the meeting place should be spacious enough to hold a group of the FFS participants and an indoor alternative is recommended in case of harsh weather.

The objective of this activity is the selection of a learning site that has the required conditions to facilitate learning process.

Based on the above criteria, discussion has to be initiated and the appropriate sites selected. If there are conflicts of opinions among the participants, ranking methods should be used for settlement. The sites chosen need to be directly linked to the learning programme. In the first phase generally it may be considered where FFS activities will be held, and after the final definition of a Group Action Plan this needs to be strictly defined

In the first phase generally it may be considered where FFS activities will be held, and after the final definition of a Group Action Plan this needs to be strictly defined “Which FFS activity will take place where and when?”

By following all these steps and criteria, the facilitator should now have a cohesive group of farmers willing to commit themselves to FFS activities.

#### *Pair-wise interviewing*

*Participants sitting next to each other do the interview together. They are split into pairs and each participant interviews his partner by focusing on questions such as: “what is your name?”, “can you share your experiences as a farmer?”, “what do you do?”, “what is your interaction with extension workers?” and “can you name two likes and dislikes?”*

*After five minutes of interviewing each other, participants then report in a plenary session about their partner, summarizing the main information in two minutes. For this exercise is required a piece of paper and a pen for writing the data.*

**STEP IV - ESTABLISHING THE FFS****1. Participatory Introduction of Participants**

It is essential the potential participants find themselves in good ambiance and to feel comfortable in order to contribute their best. Therefore, the first step is to ensure that FFS participants know and feel comfortable with each other. Even when the participants already know each other, it is useful to do this exercise to encourage participation from the beginning. The objectives of this activity are:

- ✓ To encourage participants to know each other and learn a little about each other personalities;
- ✓ To break any barriers between farmers and the facilitator (to help participants relax);
- ✓ To discover what the participants want to achieve from the FFS;

**2. Levelling Expectations**

In order to facilitate the learning process, it is important to level participants and facilitator expectations. To avoid disappointment and drop-out among FFS participants, the facilitator and the group have to be aware of what everybody expects from the FFS. In this way, at a very early stage unrealistic expectations can be recognized and aligned before the participants commit themselves.

Only a well-informed person can be fully committed. In addition, being aware of expectations helps the group to plan the FFS and, later, to monitor whether they are still focused on the initial objectives.

Levelling expectations should follow the participant's introduction. The facilitator could raise questions such: "why have you joined the FFS?", "what do you hope to gain?", "what do you expect from MAFFS" and "what do you think I (the facilitator) expect from you?"

The participants shall be divided in groups of a maximum of five participants and discuss the questions. The answers shall be written on a flip chart or pin cards and a representative of each group will present their responses to the whole group.

The facilitator and the group summarize together the expectations. It follows discussion and responds to each expectation. The group will be asked whether they think the expectation is realistic and achievable within the FFS cycle.

**3. The Host Team**

The host team is an important functional element in the FFS. It is the helping hand of the facilitator and is responsibility for:

- assisting the facilitator;
- preparing the daily programme and schedule of activities;
- arranging and setting ready the training venue;
- providing energisers/group dynamics;
- introducing visitors (e.g. a resource person) to the FFS;
- checking the weekly attendance of the FFS participants;
- serving as time-keepers;
- distributing reading and other material;
- acting as a recorder and reporter of discussions;
- upon request, assisting the facilitator in other functions;

The objectives of this activity are:

- ✓ to enhance responsibilities, participation and FFS ownership;
- ✓ to support the FFS facilitator in setting up and facilitating FFS activities;
- ✓ enhance farmers' organisational and communication (presentation) skills;

#### **4. Participatory Planning of FFS Activities - Developing a Group Action Plan (GAP)**

Once the participants have been selected, expectations levelled and they have a clear understanding of the objectives of the FFS approach, the group shall develop a Group Action Plan (GAP). The objectives of this activity are:

- ✓ to be set a clear path on what the FFS will achieve and how to achieve it;
- ✓ to create feelings of ownership among the FFS group and thus enhance commitment and sustainability;
- ✓ to pool resources, synchronize efforts and avoid duplication;
- ✓ to increase accountability and transparency and thus permit monitoring and evaluation of the performances of the FFS;
- ✓ to train farmers in how to organize and manage themselves better.

The following activities are recommended in developing a GAP:

- a. Establishing an FFS group;
- b. Problem diagnosis and finding opportunities;
- c. Identifying potential solutions/opportunities;
- d. Developing the learning programme;
- e. Developing a PM&E plan;

**Establishing a FFS Group:** The FFS group should have an identity, organized structure and resources to work effectively. Farmers effectively united in a group can interact, share experiences and stimulate learning. The group of farmers responding to the criteria will officially establish their own FFS by:

- choosing a name for the FFS and (optional but recommended) a slogan;
- The group will elect officials (e.g. a chairperson, secretary, members to form a board). The roles and responsibilities of each person should be defined and be clear to all;
- If the group plans to source funds, through personal contributions, commercial production, donors, etc., the management of the funds should be regulated;
- Setting ground rules (also called "setting of learning norms"). The FFS members shall set the learning norms to ensure a suitable learning environment and avoid interruptions and frustrations.

Interruptions (e.g. people coming in late, under the influence of alcohol, using mobile phones, domineering attitude, not participating, etc.), hamper the learning process and should be controlled.

The facilitator can contribute in the preparation of rules and suggest on what should be done in case of problems such as latecomers, absenteeism, dominant people or lack of order in the group, people not contributing to group work, members who do not respect other people's opinions, etc.

**Problem diagnosis and finding opportunities:** The first FFS sessions will be used to analyse the problems perceived by the farmers in the focal activity/enterprise of their choice. It is very important to make a good diagnosis. Diagnosing -work done to study a business and to identify problems that are limiting performance (finding out what is wrong) and opportunities to improve performance (finding out what more can be done).

Farmers can face with many problems, some of which requiring more immediate actions than others. To get a clear understanding, it is important that the FFS participants share their ideas and perceptions. Since the FFS has a limited time frame, it is not able to address all the problems faced by the group. It is therefore important to identify the most pressing problems and most promising opportunities or those shared by the majority.

The objectives of this activity are:

- ✓ gain joint understanding of the farmers' problems/opportunities in crop production;
- ✓ share insights into the potentials and constraints facing FFS participants (analysing the cause–effect relationship of specific problems);
- ✓ prioritize problems/opportunities and identify which problems/opportunities the FFS is going to address;

Exercises and more information on this topic can be found in the module (4) diagnosis and find opportunities.

**Identifying Potential Solutions/Opportunities:** The main problems/opportunities need to be analysed intensively, through for example, a brainstorming session to look at all options that can be tested and evaluated.

Once the main problems/opportunities are identified, it is possible to start the process of finding solutions/opportunities. Different people will come up with different solutions/opportunities and it is important to have a brainstorming session, where all the participants, including the facilitator, share their ideas. The different solutions/opportunities voiced by the group can then be analysed jointly and the best option can be tested in the FFS.

The objectives of this activity are:

- ✓ identify solutions to common/major problems;
- ✓ identify most promising opportunities;
- ✓ plan the activities that will implement these solutions or opportunities;
- ✓ ensure that the FFS group owns the solutions/opportunities;

At the end, a problem/solution and opportunities analysis list will be produced. Exercises and more information on this topic can be found in Module 4 - Diagnosis and Finding Opportunities.

**Developing the Learning Programme:** Once the FFS group is established, the facilitator and extension worker develop a programme (i.e. the curriculum for the FFS), based on the main problems identified. In collaboration with the group, the facilitator decides:

- what activities need to be undertaken to further explore the problems;
- to test the solutions/opportunities;
- to identify what kind of outside assistance is needed.

The key activities to facilitate the learning process in the FFS are the AESA, field comparative experiments and topics of the day or special topics, where group discussion and short- and medium-term learning exercises are conducted.

Field trips or exchange visits with other FFS are also very useful methods to enhance learning and participants' motivation.

The selected priority must be the subject of a follow-up activity, such as a field comparative experiment, participatory learning exercise or topics of the day.

The learning programme should link activities to objectives and put them in a logical order that works towards addressing priority problems in the field. To ensure that all key topics are dealt within the FFS cycle, the topics for learning derive logically from the participatory planning activities.

The objectives of this activity are:

- ✓ to ensure that the learning programme tackles priority topics at the right time during the FFS cycle;
- ✓ to facilitate the selection of activities/strategies to enhance learning (e.g. AESA, field comparative experiments, topics, exchange visits, etc.).

The list with priority problems should be displayed in a seasonal calendar in order to guide the planning. Each priority problem is discussed following the order in the calendar. The FFS group, in collaboration with the facilitator, decides what activities need to be undertaken to further explore the problem and test the solutions.

Each FFS core activity is discussed and the group decides which is most appropriate for each problem. Sometimes a series of different activities can be planned (e.g. the implementation of a field comparative experiment) in which sessions on crop production topics (topic of the day) and non-farm production topics (special topics) need to be addressed. Field days, field exchange trips, invitation of farmers/experts, etc. can also be planned.

In addition, dates of FFS sessions and the topics to be addressed need to be drafted on a flip chart and made accessible to all participants. The programme is not fixed but should be regarded as a flexible guideline that tracks the progress of the FFS and enhances learning and participation.

The plans should also cover topics such as: when the FFS will start; when sessions will begin and end (depending from the intensiveness of fields activities and weather conditions); which dates (weekly sessions are recommended); and when is each host team on duty?

Exercises and more information on this topic can be found in the Module 4 - Diagnosis and Finding Opportunities.

***Participatory Monitoring and Evaluation Plan:*** As the FFS approach is implemented to make positive changes, there is a need for monitoring the results and progress of the FFS group. The data generated in the problem analysis need to be properly recorded as they provide baseline information for evaluation.

The *participative monitoring and evaluation (PM&E) plan* is an effective management tool that can for conscious observations and analysis of situations and performances of the FFS.



The M&E also embrace participatory principles as a way to enhance learning and stimulate corrective actions. The PM&E is directly linked to the results of the participatory planning (the GAP) as this information provides the basis for continuous M&E.

The main objectives of PM&E are to monitor and evaluate the FFS (performance), monitor and evaluate an FFS session (process) and, to monitor and evaluate a field comparative experiment. The guidelines to reach the above objectives are:

*a) Monitoring and Evaluating the FFS Performance*

The results of FFS performance can be used for different purposes and target different players (e.g. FFS participants, donors, community and any other interested parties) in order to assess whether the FFS is achieving the set goals, to provide tools to demonstrate results (for donors, researchers, government, etc.) as well as to enhance transparency of the FFS.

The basis of a PM&E plan are the "6 Ws + 1 H":

1. **Why** are we doing the PM&E?
2. **What** do I need to evaluate?
3. **Who** should be involved in the evaluation?
4. **Where** should the evaluation activity take place?
5. **When** do you need to start and end, and when in the FFS cycle should the PM&E activities take place?
6. **With** what kind of resources you should evaluate?
7. **How** should participatory methods and tools be used?

**Why and What:** PM&E is a management tool that can be used to control, educate, provide feedback, facilitate change, etc. Therefore it should be clearly identified the intended use of PM&E. For FFS, PM&E is used mainly as a tool to enhance learning and identify paths for further development. The identification of objectives are following step. Every FFS has specific objectives because of different conditions and different issues to be addressed. However, there are some basic goals each FFS aims to achieve.

The example in the box does not include all relevant objectives. The specific FFS could choose the relevant ones in accordance the conditions influencing the FFS activities. It is therefore important to select the parameters applicable and develop others if required.

**Who:** The key actors in the planning and implementation of the M&E plan are the FFS participants. The facilitator will guide the process, making sure that all stakeholders are involved and the roles and responsibilities of each stakeholder are clear to all. It is recommended to invite also other interested stakeholders (e.g. representatives of the

FFS practitioners developed some general parameters for the evaluation of any FFS activity:

- ✓ changes in farmers' skills/knowledge
- ✓ evidence of adoption of appropriate technologies
- ✓ change in productivity
- ✓ change in farmers' income level
- ✓ changes in socio-cultural practices and social status
- ✓ changes in quality and quantity of human nutrition
- ✓ evidence of spread of FFS message
- ✓ changes in extension/research systems

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district council, SLARI, neighbouring farmers, etc.) and to find out their opinion. This leads to constructive feedback and refresh views on how to develop the FFS successfully. In addition, it encourages stakeholders to be directly involved and to support the FFS.

**Where and When:** PM&E is not an activity that has to be done only at the end of the FFS. This is a continuous process. It starts with the initial survey identifying the conditions for the establishment of a FFS. The situation before the establishment of FFS can provide points of reference. Thus, the achieved changes as a result of the FFS activities can be measured. Continuous monitoring helps to check if the FFS is heading in the right direction. The PM&E starts during the participatory planning, continues during the implementation, and a final evaluation is done at the end of the FFS season. The location and intensity of the monitoring activities depends on the need for information, the type of information required and the time available.

**With what:** It is vital to have the required resources available to undertake a PM&E. The PM&E activities on FFS level are incorporated in the FFS learning programme; this includes the initial survey, processing of the final PM&E results and evaluation.

**How:** The same participatory methods and tools used for the participatory planning can be adapted and applied to M&E. The list in the box gives some examples of participatory methods for PM&E applicable to a FFS.

#### *b) Monitoring and Evaluating the FFS Session*

It is important to track whether the FFS is achieving its aims and make corrections if necessary. This means monitoring activities in the daily FFS sessions. This will allow participants to:

- ✓ gain an overview of progress and to enhance confidence and motivation;
- ✓ draw lessons learned and stimulate corrective action, thus improving the quality of the next FFS;
- ✓ get an early warning of problematic activities and processes that will need corrective action.

Exercises and more information on this topic can be found in the Module Post Harvest Cycle.

#### *c) Monitoring and Evaluating Field Comparative Experiments*

Experimentation is an important learning tool in the FFS. It enhances farmers' skills of observation, analysis and decision making. Learning how to evaluate the performance of different experimental treatments allows farmers to make well-informed decisions on new technologies.

For example, if the objective of the experiment is to compare the performance of three types of fertilizer treatment in a specific crop, the indicators can be yield, growth rate, resistance to disease/pests, labour requirements, cost of the fertilizer, gross margin, availability of the fertilizer, etc. The indicators identified need to be evaluated throughout the experiment and recorded.

In the course of implementing the regular session FFS: The evaluation of the experiment should be done during the AESA. To facilitate the evaluation, the FFS



participants need to keep adequate records (in the AESA sheet and the members' notebooks).

Exercises and more information on this topic can be found in the Module Post Harvest Cycle.

### **1.3.2 PHASE 2 – IMPLEMENTATION OF FFS**

#### **STEP V - FFS SESSIONS WITH CORE ACTIVITIES**

The FFS members will agree a starting date, the frequency of meetings and the length of the cycle with the facilitator. The activities will have to be prepared and the participants will need to understand the need of weekly meetings of 3-4 hours to participate according to the agreed meeting schedule.

#### **STEP VI - FIELD DAYS**

Field days provide an opportunity for non-participants to be exposed to the FFS group's lessons and the skills and knowledge gained in the process. In addition, they provide the participants with an opportunity to display and share their experiences (e.g. the experimentation results and learning activities, including group dynamics). Field days reinforce the FFS cohesion and raise awareness among the community, the government and other organisations in the area, creating support and new demand for FFS establishment.

#### **STEP VII - EXCHANGE VISITS**

Exchange visits to another FFS, an agricultural institution or an innovative farmer are educational tours. They encourage FFS members to compare the activities of different groups with their own and to exchange tested technologies and unique innovations.

### **1.3.3 PHASE 3 – POST HARVEST CYCLE**

The FFS does not end with the crop cycle. In many cases, the FFS group expresses a need for more training, either in the same focal activity or in a different enterprise. However the programme and the activities are different and the approach is aimed towards the sustainability of the group and the implementation and dissemination of the lessons learned.

#### ***Analysis of Results and Evaluation***

The main objective is to allow FFS participants to test new technologies and determine their applicability. Different treatments need to be compared using indicators identified by the participants. In this phase of the experiment, all the data collected in the record-keeping format should be analysed. An important tool is the cost-benefit analysis. For less tangible indicators, (e.g. the taste of the vegetable), the participants have to come up with criteria to quantify the outcomes (e.g. very good taste – average taste – weak taste). The resulting analysis can be presented according to different formats.

Using PM&E methods the facilitator can evaluate FFS participants' perceptions and level of adoption of technologies on their own farms. In addition, the knowledge they gain from the experiments can be assessed. Benefits, constraints and barriers to adoption can be identified and discussed in plenary sessions. New experiments or other activities can be

designed to solve such anticipated problems. Results of experiments should be shared with the community and neighbours during field days and with other resource persons – with a view to improving overall production and extending lessons and benefits beyond the FFS.

#### **STEP VIII - FOLLOW-UP OF FFS ACTIVITIES**

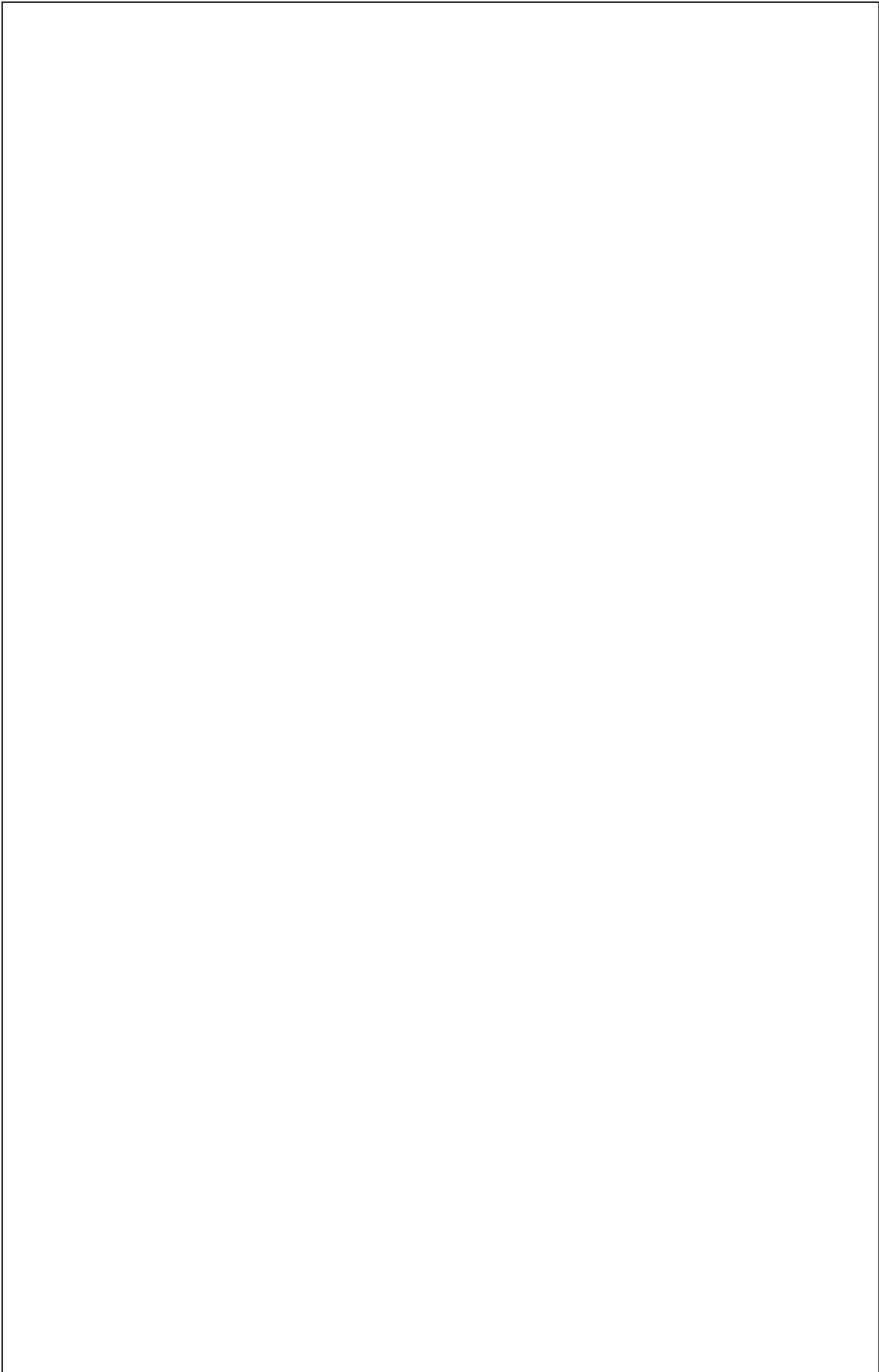
At the end of a learning cycle, the FFS normally continues. With the help of the facilitator, the group evaluates the FFS and develops an action plan based on the results of the evaluation.

In addition, new sessions (different topics or more in-depth learning of the specific topics), implementation of commercial plots or enterprises, linkages with researchers, extension workers and other FFS are planned.

Grants from donors are not always available for FFS follow-up activities. Self-financing groups are flourishing and other alternative funding sources, such as loans and private sector support, should be investigated.

#### **STEP IX - ESTABLISH/CREATE FFS NETWORKS**

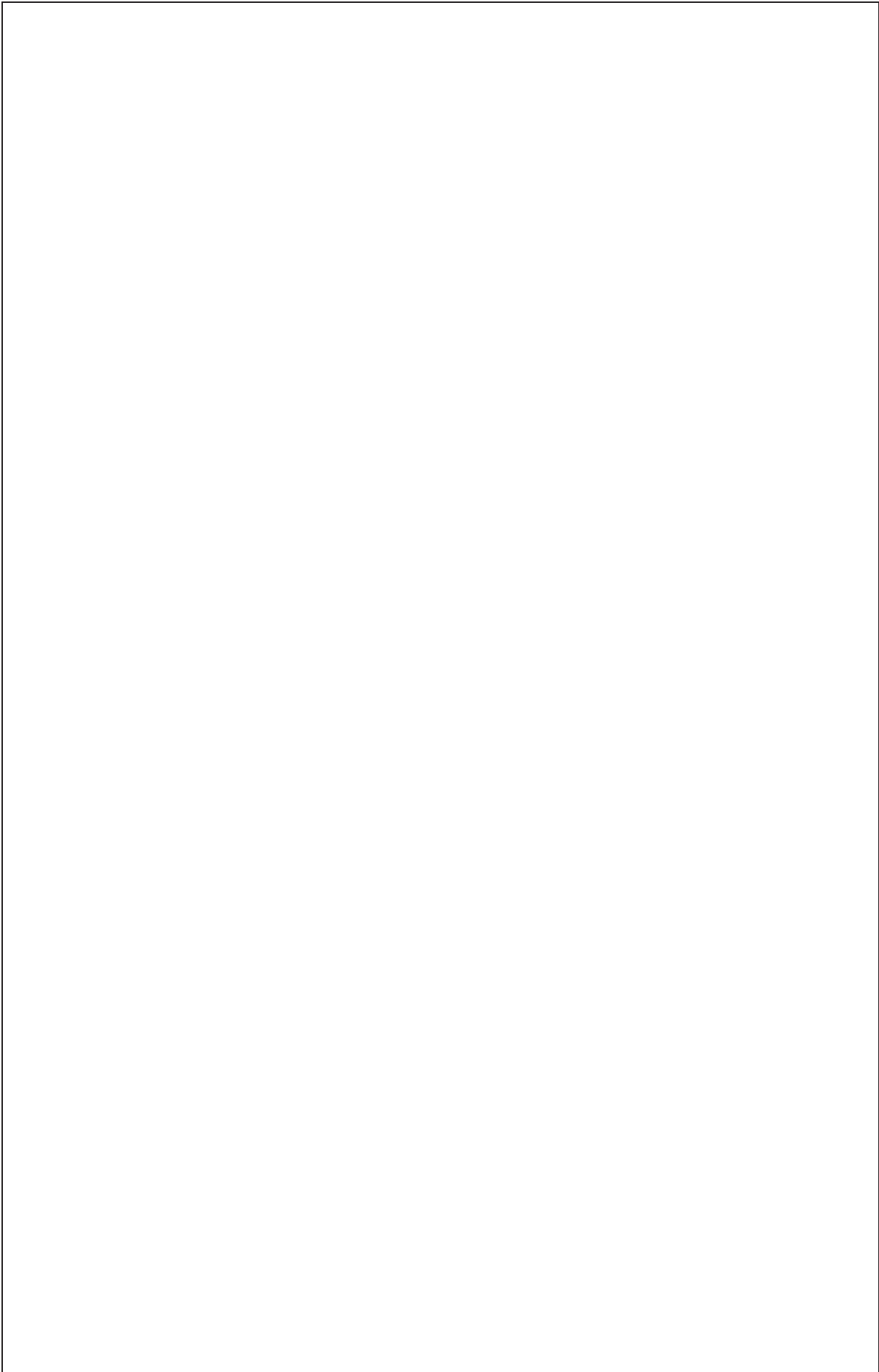
When there are several FFS in a region, FFS networks should be encouraged. Networking is a sustainable mechanism to support economic activities and the development of existing and new FFS. It initiates commercial ventures in all affiliated FFS, facilitates fundraising and helps to coordinate marketing activities.



# **MODULE 2**

## **UNDERSTANDING FFS AND TEAM BUILDING**





## MODULE 2 – UNDERSTANDING FFS AND TEAM BUILDING

### 2.1 WELCOME AND GETTING STARTED

#### **Preparation**

This will be the first formal meeting of the Farmer Field School (FFS). You should try to make it memorable. You may want to invite someone special to help you open it. You may want to arrange with the participants for each of them to bring some food or drink in order to share to celebrate the start of the school.

Before the FFS starts, you should visit each farmer who was invited to be part of the school to make sure that they remember when the school will start. You should also prepare paper blocks and pens for each member of FFS

#### **Guidance**

*The purpose of the first few sessions is to get the FFS organised and to build unity and cooperation among the participants.*

*Process:*

1. Cover the following points:
  - Welcome all the participants to the first day of the FFS.
  - Remind them that they were invited to participate in the FFS because they are interested in learning how to improve the profitability of their farms by developing their farm skills.
  - Check if everyone knows everyone else. If not, ask them to briefly introduce themselves.
2. Explain that the first two meetings of the FFS will be about the purpose of the school and how the school will be run. After that, you will begin to learn about production and farming as a business.
3. Explain to them the length of the entire program
4. Distribute exercise books and pens
5. Explain that the FFS will be run in a participatory way. There are activities and exercises that have been prepared to help us learn. They should remember to bring their exercise books and pens or pencils each time you meet.
6. Ask if there are any questions. Answer them as best you can.
7. Explain that you will now start with the first module of the school.

## 2.2 TOPICS: UNDERSTANDING THE FARMER FIELD SCHOOL

### 2.2.1 Exercise: Understanding problems

Learning objective: To provide that participants have better understanding of problems which are targeted, and which not

Learning Process, Methods and Activities

Brainstorming in small groups

Materials:

White Board or Black Board, markers or chalk card

Time: 30 min

Key question: Which problems will be targeted? Over which problems we have influence?

**Guidance**

*The objective of this exercise is to separate problems for which others are responsible from those which can be solved by farmer. We should focus more on problems for which the farmer is responsible and not on those that are not under our influence/control.*

*Process:*

1. Divide into 3-4 groups and distribute cards-papers
2. Ask each of them to write down 5 problems which in their opinion, if solved, would improve their income
3. After they finish with writing, on left side of the board write

**Solution/improvement depending on us**

**Solution/improvement depending on others**

4. Collect answers from groups and from each paper/card read what is written? Ask them what they think who is responsible for improvement of the problem?
5. For problems depending on others (e.g. expensive inputs), put on the right side. Problems depending on us put on the left side (e.g. lack of knowledge). Problems for which both sides are responsible should be put in the centre

**Solution/improvement depending on us**

**Solution/improvement depending on others**

**Lack of knowledge**

**Expensive inputs**

8. While reading and placing problems on the board group them, for instance problems which relate to equipment place next to each other
9. Ask if we can distinguish between problems and facts

**Guidance:**

*Define problems as something that is under our influence. Define facts as something that we cannot influence, for instance rain. If we can consider problems not as problem that it is raining, but the problem is that I don't have the umbrella.*

10. Ask the participants to look again on the board. Ask them what problems can be discussed in the FFS?
11. In cases when farmers do not accept that any solution depends on them and also the room for their personal action in overcoming of problems ask them: What will we do in FFS? How do you think that we can improve through FFS the present situation if this improvement does not depend on you? Do we need to have this FFS with you? Should this group even be in FFS? Reconsider this decision with them

**Guidance:**

*Explain that our goal is not to focus in the school on problems which are not under our influence. We want to use our time and energy on problems over which we have some control. Objective is to focus discussion on problems that we can influence. In the school we will focus on problems that we can influence.*

*It is important at the beginning to separate those who are interested only to receive some inputs through the project from those who are really interested to improve income generating. This can be the first selection so that those who are interested only in receiving some help would give up. However, it is better to select fewer members who will be dedicated to solving of problems than more of them which only expect to receive some help – inputs. Maybe, some will quit but this is a process and we should always agree if someone decides to quit. Keep in mind that the structure of the group determines the strategy of the group. If the structure of group is such that majority feels that there is no room for improvement, that it is difficult to have any progress with such group. Majority of group members should believe in the possibility to improve the present condition regarding the income generation and food security, through personal dedication and mutual action. It is important that the majority of people in the group are interested and motivated to improve the situation by focusing the attention on solving problems that are depending on us. In many cases, significant time is lost to discuss issues on which we cannot have any influence or impact. In such situations, it is difficult to identify the problem, and meetings are often confused. Also explain that other issues, on which we can have an impact, can be discussed. But the priority must be to discuss problems that are under their control/competence.*



### 2.2.2 Exercise: Understanding the purpose of the Farm Field School

**Objective:**

To provide participants with information about what they will learn from attending a FFS

**Materials required:**

White Board or Black Board, markers or chalk  
Exercise books

**Learning Process, Methods and Activities:**

Brainstorming in small groups

**Key questions**

What is the purpose of the Farm Field School?  
What topics should be covered and when?

**Guidance:**

*In this session you will use small group discussions. Such groups are useful for encouraging participation and getting richer information. This is also a good way to get participants used to talking in a small working group – which is how much of the Farm Field School will operate.*

**Preparation**

Write the following two questions at the top of the board:

- What do you understand by the FFS?
- What do you expect to learn in the FFS?

Below the questions, write the following headings on the board as shown below: “What do you understand by FFS”; and “Learning Expectations”.

**Understanding of FFS**

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**Learning Expectations**

---

**Process:**

1. Ask the participants to form small discussion groups. Start a discussion on what they understand by FFS. Ask them to discuss the questions. Ask each participant to keep a record in his/her own exercise book. Give them about 5 minutes to do this.

**Guidance:**

*You should visit each group to listen to how the discussion is going and offer help and guidance as needed to keep them focussed.*

You will know what goals have been set for participants in the learning sessions that follow, but you need to use this discussion session to find out if these goals match their understanding of FFS.

2. When the groups have completed their discussions ask each participant in turn to share what they have written in their books about the first question. The participants

should give one answer at a time so that each participant gets a chance to participate. As the participants share their ideas write them under the first column of the board. An example is given below.

### Understanding of FFS

### Learning Expectations

*It is a school where farmers learn*

*Guidance: If a participant repeats a point raised by another participant, you do not need to write it again, but add a tick (✓) next to the point each time it is raised by a group. This will allow you to identify common thinking amongst the participants.*

3. When each of the participants has had a chance to contribute, review the answers on the board. Look for the most common answers. Encourage discussion that leads to unity of thought about the question.

*Guidance:*

*Understanding FFS this is an open-ended question. The answers will help you and all the participants to be more focused.*

4. When you have finished the first question, ask the participants to discuss their expectations. Write them down on the board.

*Guidance:*

*The participant's expectations may be similar or very different. It is important that you know what they are expecting to learn so you can check if the FFS programme covers those points or not. It is not a problem if the participants' expectations are not exactly the same as the objectives of the FFS programme. This will be sorted out as you work through the programme.*

5. When the participants have shared all their expectations, take them through the topics covered by the FFS materials. Explain that, as the school progresses, they will be able to identify additional things they want to learn.

*Guidance:*

*You will have done some of this work before the school starts. You will have made an assessment of the participants to determine which modules you will and will not have to cover. In this discussion you will need to be guided by the outcomes of that assessment.*

6. Discuss how the programme will be implemented. Start a discussion on how they will learn at a FFS. Cover the points below and make sure the participants understand each point. Encourage discussions in each point and ask questions:

- The programme uses a problem-solving approach
- The farmer's field is the learning ground
- The programme uses learning by doing approach
- Learning from mistakes
- The programme is linked to the actual operations on their farms

- Your role is to facilitate training. You will listen to the participants in acting as both a trainer and a listener to participants' problems.
- Explain the role of the participants as active rather than passive: they work with you, rather than take lessons from you.

7. Summarise the expectations. Then provide an outline of what is planned in the future sessions. Explain that the participants need to agree on a schedule of meetings. How often will they meet? Which day of the week? What time? What venue? Write the agreed programme onto the board and ask the participants to copy this information into their exercise books.

**Guidance:**

*It is important that participants leave this initial session with an understanding of what an FFS is, and what lies ahead of them in future sessions, especially those sessions to be conducted in the first quarter.*

### 2.2.3 Exercise: Why is it important to improve knowledge and skills?

**Objective:**

To provide participants with information on significance of improvement of knowledge and skills in their future lives and to motivate the participants to take active participation in the work of FFS, regardless of their previous education.

**Learning Process, Methods and Activities:**

Brainstorming in small groups

**Materials required:**

White Board or Black Board, markers or chalk

Exercise books

Key questions

Why is it important to improve knowledge and skills?

What are the major obstacles in improvement/enhancement of knowledge and skills?

**Process:**

1. Divide the participants in small groups and give each group the question "why is it important to improve knowledge and skills?"
2. After that, in a plenary presentation, they should present their ideas. Encourage discussion.
3. Write down on the blackboard their answers. Same answers or similar answers group together.
4. Encourage discussion on major issues, why they should improve their knowledge and skills.

**Guidance:**

*Explain why is important to improve knowledge and skills. Good knowledge is not a guarantee of success but makes good foundation for future success. With less knowledge it is more likely that we will be engaged in our life in the performance of heavier physical and low-paid jobs. Short- and long-term interests may be in conflict. Short-term investments of labour and energy in making money may be more cost-*

*effective in the short term. However, long-term improvement of knowledge and skills increases the possibility/probability that you will have long term in future higher income/salaries/rewards. Short-term “waste of time” dedicated to long-term development will be of great benefit. Think about the future, because there you will spend the rest of your life! One day the future will be present! The best way to predict the future is to create it!*

*In agriculture, as in life, there are times when you sow and a time of harvest. You cannot do both at the same time. Efforts in acquiring the knowledge and skills you “sow” and create preconditions to have to good “harvest” (result) in the future. You will always harvest what you sow, and if you sow more you will eventually reap more. If you want to increase the quality and quantity of your yield/money, you have to increase the quality and quantity of your contributions. Enhancing knowledge and skills will increase contributions at work and thus give greater contribution to the community as a whole.*

5. Ask them what the biggest obstacle to learning is. Ask participants if they have a habit and time to learn, or think that it is now too late to begin to learn, or maybe it is difficult to learn or have not had a chance until now, were not born into a rich family?
6. Allow each group present their opinions at the plenary presentation?
7. Ask how we can overcome these limitations? Encourage discussion
8. After discussion, summarize positive comments and add the following

*Guidance:*

*You may not have the habit to learn? You get tired quickly when you learn. During our childhood and adolescence it was difficult for us to learn. If you do not study, it will be even more tiresome and more difficult to learn later in life. To acquire new knowledge and skills is never too late! Let the learning become a lifelong habit!*

*Maybe you don't have enough time? Any progressive person would dedicate part of his/her free time in acquiring knowledge and skills. There is a saying “who works hard has no time to get rich”. Work is a necessary, but not sufficient condition.*

9. Ask participants if they might think that the lack of education and literacy are the major problem or if they think that it will not be of use for them in the rest of life. It is not necessary that you were born to a wealthy family to acquire knowledge and skills.

*Guidance:*

*Your education depends on your need for acquiring knowledge and skills. Then your success depends on factors that you can influence. “Who is truly dedicated, will find a way and who is not, will find an excuse”.*

*Perhaps you lack prior education? When you are young, insufficient education can be compensated if you are willing to acquire knowledge and skills. Experience has shown that the best-educated people are people who educated themselves.*

*FFS is the right opportunity for you! Regardless of previous education, whether literate or not, you have a chance to learn, through FFS, important things that will ensure food security and improve income generation activities. FFS approach is tailored to you so you can collect information and improve your skills in an easy and interesting way.*

## 2.3 TOPICS: TEAM BUILDING

*Guidance:* before preparing for this module, assess the group of participants you are working with. If it is a new group that has been previously organised and is functioning well, then it may not be necessary to go through all the sessions in this module. If is a newer group (or one not functioning too well), then they will need to go through all the sessions.

### *Objective:*

- Build unity among the members of the FFS.
- Establish ground rules to work in the group effectively and without conflict.

### *Materials required:*

White Board or Black Board, markers or chalk

### *Key questions:*

How can we effectively work as a group?

### *Learning Process, Methods and Activities:*

Brainstorming

### 2.3.1 Exercise: Ground Rules

#### *Process:*

1. Start a discussion about the rules for holding school meetings. Encourage each participant to talk by suggesting ground rules or commenting constructively on the suggestions made by others.
2. As suggestions are made write them on the board
3. Clarify how a given rule may work. Challenge some of the rules set. Use the checklist below to help guide the discussion.
  - ✓ *Ensure that each member has the equal right to participate and make decisions.*
  - ✓ *Ensure that decisions are made collectively in consultation with group members.*
  - ✓ *Treat one another with equality and respect at all times.*
  - ✓ *We need to be self-disciplined as individuals and responsible to the group.*
  - ✓ *We should be honest and dedicated and always do our best in the interest of the group.*
  - ✓ *We should agree to disagree and never get angry if any individual opinion is not accepted.*
  - ✓ *We should always accept the decisions of the majority, even if it is against your individual view.*
  - ✓ *We should be open, accountable and transparent in our dealings with all group members.*
  - ✓ *We should always try to fix problems and not blame others when things go wrong.*
  - ✓ *We should share all costs of the FFS in a fair way.*
4. Ensure that there is consensus on the rules chosen.
5. Ask each participant to write the agreed rules into their exercise books.

6. Discuss the importance of these rules in ensuring success for the group. These points must be constantly kept in mind and should be treated as the ground rules of the group.
7. Finally asked to add one more important rule: do not do to others what you would not want others do to you!

### **2.3.2 Exercise: Naming our FFS**

#### *Process:*

1. Organise the participants into small groups of 3-5. Ask each group to discuss and suggest a name for the FFS. They should suggest one name. Give them about 10 minutes for this.
2. When the time is up, ask each group in turn to share its suggestion. Write them on the board. If any small groups have the same suggestion, write it once and add a (✓) for each group that suggests it.
3. After all the suggestions have been given, ask the participants to discuss which name would be best for their FFS. Facilitate agreement on a name. Ask all the participants to write that name on the cover of their exercise books.
4. Ask the participants if they would like to have a special symbol for their FFS. If so, ask if any of the participants can draw or has a member of his family that can draw. Organise at least one participant or a group, or a member of their families to get together to draw some ideas for a sign for the school. They should work on that and bring their suggestions to the next meeting.

### **2.3.3 Exercise: The Host Team**

#### *Background*

The host team is an important functional element in the running of the FFS and has responsibility for:

- ✓ assisting the facilitator
- ✓ preparing the daily programme and schedule of activities
- ✓ arranging and setting ready the training venue
- ✓ providing energisers/group dynamics
- ✓ introducing visitors (e.g. a resource person) to the FFS
- ✓ checking the weekly attendance of the FFS participants
- ✓ serving as time-keepers
- ✓ distributing reading and other material
- ✓ acting as a recorder and reporter of discussions
- ✓ upon request, assisting the facilitator in other functions.

<p><i>Objectives</i></p> <p>Enhance responsibilities, participation and FFS ownership of the participants</p> <p>Support the FFS facilitator in the set up and facilitation of the FFS activities</p> <p>Enhance farmers' organisational and communication (presentation) skills.</p>	<p><i>Materials</i></p> <p>Notebooks, pens/pencils, flip charts, marker pens.</p> <p><i>Time</i></p> <p>Thirty minutes (to form the host team).</p>
<p><i>Process:</i></p> <ol style="list-style-type: none"> <li>1. The facilitator introduces the concept of the host team and explains its functions.</li> <li>2. The facilitator splits the FFS group into sub-groups. The following exercise can be used: The facilitator assigns the numbers one to five to the participants and those who have the same number form a group. Each of the five sub-groups selects a leader and a secretary, decides on the sub-group's name and develops a sub-group slogan.</li> <li>3. Each sub-group presents their members, name and slogan in the plenary to the other FFS members.</li> <li>4. Each sub-group will be host team at least once. A schedule is made for each sub-group to be aware of which dates they are responsible for as the host team.</li> </ol>	



**2.4 TOPICS: MANAGING AND SUSTAINING OUR FFS***Objective:*

To agree on ways of funding, sustaining and managing the FFS.

*Materials required:*

White Board or Black Board, markers or chalk

2 Exercise Books

Pen

*Learning Process, Methods and Activities:*

Brainstorming, Group decision-making

*Key questions:*

How do we organise our FFS?

What do we need to do to sustain our FFS financially?

*Preparation:*

The work to be done in this session is formal. It needs to be written down and kept in a safe place. It forms the basis for a constitution of the FFS which may be needed in the future.

Get two exercise books. On the cover of one, write: *(Name of FFS) FFS General Record Book*. On the first page of the book, write: *Procedure for selecting FFS leadership*.

On the cover of the other exercise book, write: *(Name of FFS) FFS Financial Record Book*. On the first page, write: *Procedures for raising and handling funds for the FFS*.

**2.4.1 Exercise: Organising the FFS***Process:*

1. Start a discussion on how the FFS should be organised. They have already selected host team and lead farmer or they will soon be elected. Do they want to have officers such as a Chairman, Secretary and Treasurer? What other ideas do they have? Facilitate the discussion towards a consensus on some kind of leadership which can be identified with descriptions such as Chairman, Secretary and Treasurer.
2. Write the categories of leadership on the board. Use the example below. Also write them into the FFS general record book.

Chairman

Secretary

Treasurer

3. Brainstorm and discuss on the 5 responsibilities of each officer as shown below.

Chairman

Secretary

Treasurer

Be responsible for  
chairing FFS  
organisational meetings

4. When you have finished with the first category, work through the second and third category and get agreement on their responsibilities.
5. When you have finished with defining responsibilities, write these into the FFS record book.

6. Next ask the participants how they want to select people to fill these jobs. Agree on a way to do this.

*Guidance:*

- *It is important to find a way to select the leadership of the FFS that is fair and acceptable to the members of the FFS.*
  - *The simplest would be an election by secret ballot. The FFS members could simply vote for each office without nominations. The person receiving the highest number of votes would be elected to the office.*
  - *Alternatively the FFS members could nominate members for each office and then vote by secret ballot from among those who have been nominated.*
7. When you have agreed on how to select the FFS leaders, ask the participants how long each officer should serve. It is suggested that they should serve for the entire programme.
  8. When the term of office has been agreed, write this into the FFS record book under the heading: *Procedure for selecting FFS leadership.*
  9. Next, start the process of selecting the FFS leaders according to the agreed procedure.  
*Guidance: It may happen that the members feel that it is too early to select leaders. If this is the case, ask them when they would like to do this and put it into the FFS schedule.*
  10. When the selection is done, record the names of the selected leaders into the FFS general record book. Write this on a new page in the book under the heading: *Selection of FFS leadership for (period of time).*
  11. Show the book to the participants and explain that it is important to have a formal record of this process. You have been doing this up to now. This will now be the responsibility of the FFS (Secretary). But before handing this over, ask all the members to sign the section of the book that records the selection procedure and the results of the selection process. Then give the record book to the (Secretary).

#### **2.4.2 Exercise: Financially Sustaining the FFS**

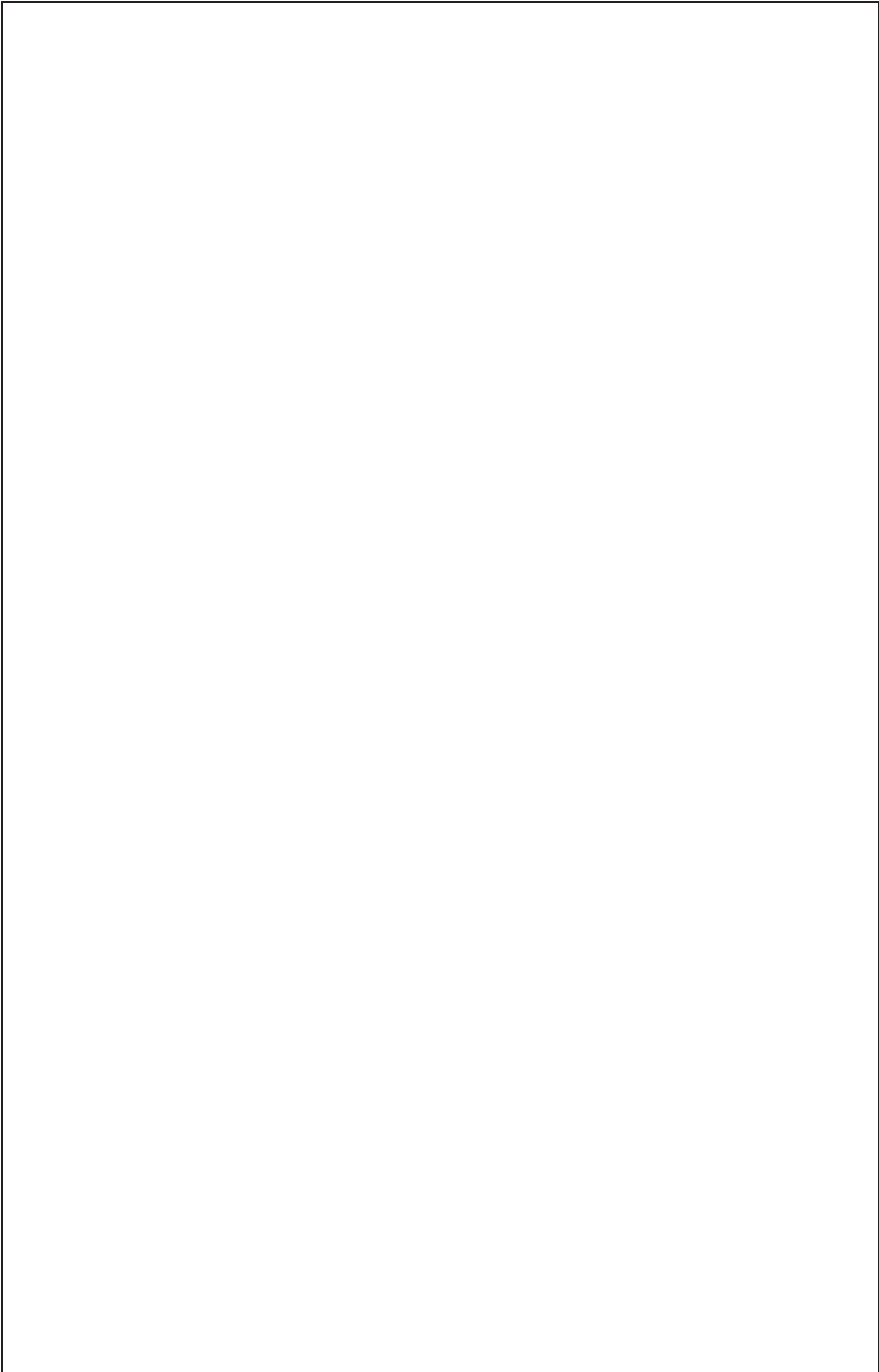
*Process:*

1. Start a discussion with the participants about how the FFS can be financially sustained.
2. Explain that part of the costs for functioning of FFS might be covered by the MAFFS or by a project. Are they ready to contribute? Are they ready to cover part of the costs? If yes, which part? Facilitate the discussion toward an agreed process.
3. Write the agreed process into the FFS financial record book under the heading: *Procedure for raising and handling funds for the FFS.*
4. Show the book to the participants and explain that it is important to have a formal record of this process. You have been doing this up to now. This will now be the responsibility of the FFS (Treasurer). But before handing this over, ask all the members to sign the section of the book that records the financial procedure of the FFS.

## MODULE 3

# UNDERSTANDING FARM BUSINESS MANAGEMENT





## MODULE 3 – UNDERSTANDING FARM BUSINESS MANAGEMENT

### 3. STEPS IN MAKING A FARM BUSINESS PROFITABLE

In this module, the exercises are designed to develop participants' knowledge of the environment in which farm commercialization is taking place, to create awareness, introduce the concept of farming as a business, understand some of the most important aspects of a farm business, understand costs and revenues, profit, enterprises profitability and the steps to make farm business profitable.

*Note: Examples and numbers in tables and texts in this module are there to explain the process of calculation, and they do not represent real values. They are given in \$, kilograms or tons and hectares because of the easier and better visibility. Real values for the price on the market and real yields accomplished should be used in reality when calculating. All of these should be given in domestic currency (Le). Depending on the product, measures acre instead of hectare and bushels or bags instead of tons or kilograms can be used*

#### 3.1 TOPICS: COMMERCIAL FARMING ENVIRONMENT

##### Objective:

To develop participants' knowledge of the environment in which farm commercialization is taking place.

##### Materials required:

White Board or Black Board, markers or chalk  
Exercise books

##### Learning Process, Methods and Activities:

Brainstorming  
Graphic visualising

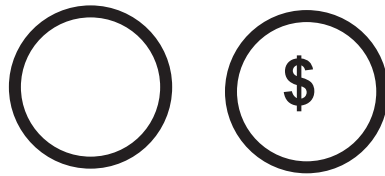
##### Key questions:

What changes are occurring that have an impact on your farming systems?

#### 3.1.1 Exercise: Changes in Farming

##### Process:

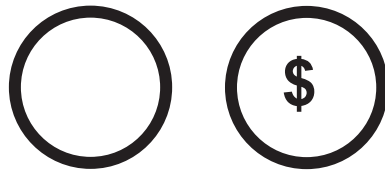
1. Organise the participants into small groups of 3-5. Ask each to think about why they farm. Is it to produce food to eat? Is it to generate cash? Is it for both food production and for cash? They could work in small groups of 2 or 3 if it makes them more comfortable.
2. Demonstrating on the board, ask each participant to draw two circles one next to the other in their exercise books. The circle on the left should represent farming for food, and the circle on the right should represent farming for cash. If they think that they are farming more for food than for cash, then make the circle on the left larger than the circle on the right. If they think they are farming equally for food and cash, the circles should be of equal size. See the example below.



3. Each participant (or group) will have their own ratio. Encourage them to explain their diagrams.
4. Now ask each participant to think about how this ratio has changed over the last 10 years. Ask them to use circles to demonstrate the ratio ten years ago and five years ago. Arrange the circles chronologically.

Example:

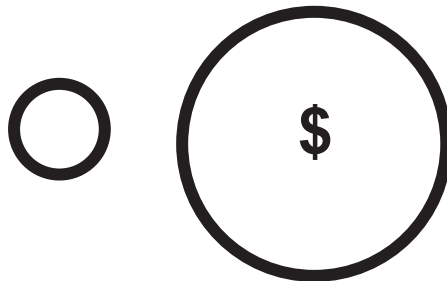
Ten years ago



Five years ago



Now



5. Discuss the change. What does it mean? Are farmers producing more for food or for cash? Why has this changed?
6. Ask the small groups to think what is likely to happen in the next 5-10 years. Ask them to use circles again. When they are done, ask each group to share their diagrams.
7. Discuss what this implies for how they run their farms. Is farming for cash different than farming for food? If yes, how? If not, why not?

### 3.2 TOPICS: WHAT IS FARMING AS A BUSINESS?

#### Objective:

To create awareness, introduce the concept of farming as a business and build consensus about the meaning of business

Understand important aspects of the farm businesses that the participants are managing.

#### Materials required:

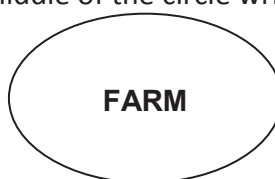
White Board or Black Board, markers or chalk

Exercise books

#### 3.2.1 Exercise: The Farm Business

#### Process:

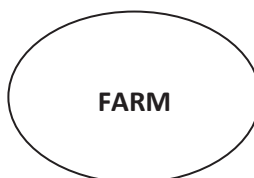
1. Draw a circle on the board. In the middle of the circle write: *Farm*.



Explain the following:

*Farming can no longer remain at subsistence level. Farming is fast changing and the market economy is expanding. It is dismantling the subsistence economy. With the expansion of the market economy, farming too has to respond to these changes. We have seen the way farming has changed over the years. We have also seen how life has changed over the years. Life requires more cash than in the past. Instead of using your farms for growing food to consume at home, there is more and more pressure to use the farms to generate the cash you need. Farming has to become more a business proposition. Since this is the case, it is important that we begin to look at the farm more as a business than as a source of food. Operating the farm as a business requires new knowledge, attitude, skills and tools. This is particularly so for small farmers.*

2. Ask the participants to suggest ways in which their farms might be thought of as businesses. What are some of the things that their farms have in common with a business? Write their ideas on the board. If the ideas can be grouped, try to group them around the concepts of inputs, production and markets. Put the things related to inputs to the left of the circle and things related to production just beneath the circle. Put the things related to markets to the right of the circle.



Raw material, suppliers,  
input prices

Sowing, cleaning,  
producing, harvesting

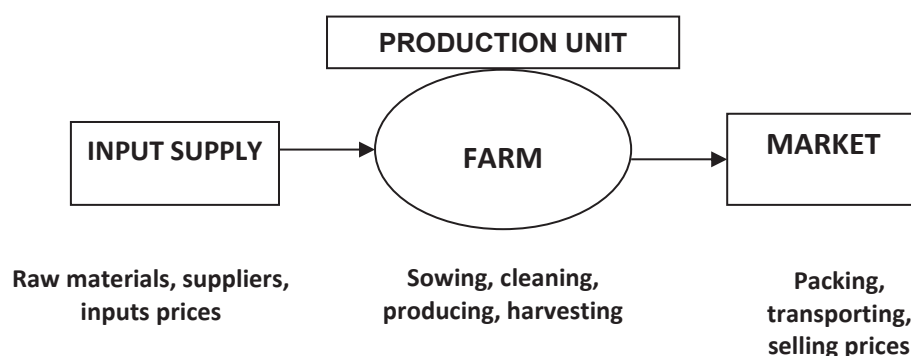
Packing,  
transport,  
selling prices

Ask the participants to copy the circle into the centre of the page.

3. Explain that you want to look at three different parts of the farm as a business: the production unit, the input supply and the market.



4. On the board, add *Input Supply*, *Production Unit* and *Market* as shown below.

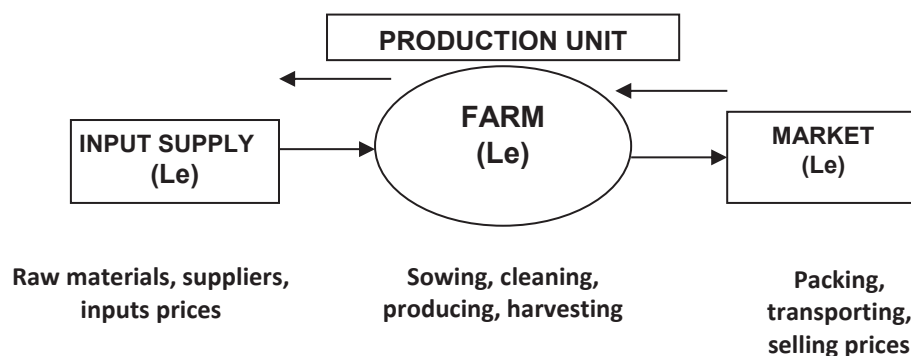


5. Refer to the diagram on the board. Ask the participants to copy it into their exercise books. Explain that a farm is like a factory. It uses inputs in the production and products are sold on the market. At each stage money is involved. Draw Leones signs (Le) below each of the three main headings.

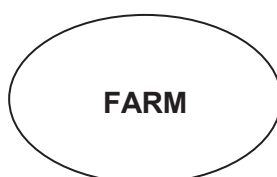
6. Draw lines going from inputs through the farm to the market and back to the farm.

Explain the following:

*The line shows the flow of money. Money is spent on inputs. Inputs are used to produce a product. The product is sold on the market for money.*

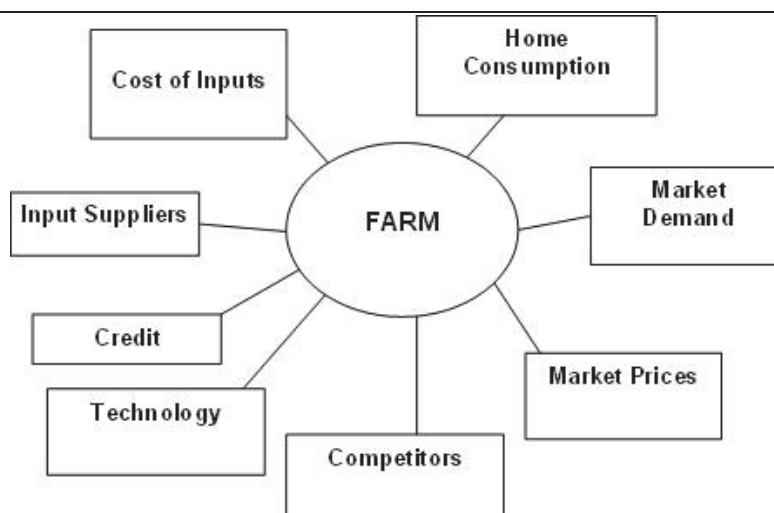


7. Clear the board or go back to the chart with the circle with “Farm” in it.



Ask the participants to think of things that can affect the profitability of a farm business. Ask them to make suggestions. As they make suggestions, write them onto the board and draw a line connecting them to the farm. Use the following check list to help prompt ideas (e.g. inputs costs, input suppliers, market demand, market prices, credit, competitors, technology, etc.)

In the end you will have a diagram on the board that looks something like the diagram below:



8. When you think they have covered enough topics, explain the following again:

*As we said earlier, when we only produced food for our families to eat, farming was much simpler. It was not always easy, but it was not so complex. Now, when we need to earn cash to buy things we cannot grow on our farms, farming becomes more like a business. We have to be aware of many things. We have to make sure that we grow and sell enough products to cover the cost of production and to give us a profit. This FFS will help us learn how to do this on our own farms.*

9. Ask if there are any questions or comments about this. Encourage discussion. Always keep the discussion focussed on the idea of the FFS being about farm business and on learning how to make their farms more profitable.

**Guidance:**

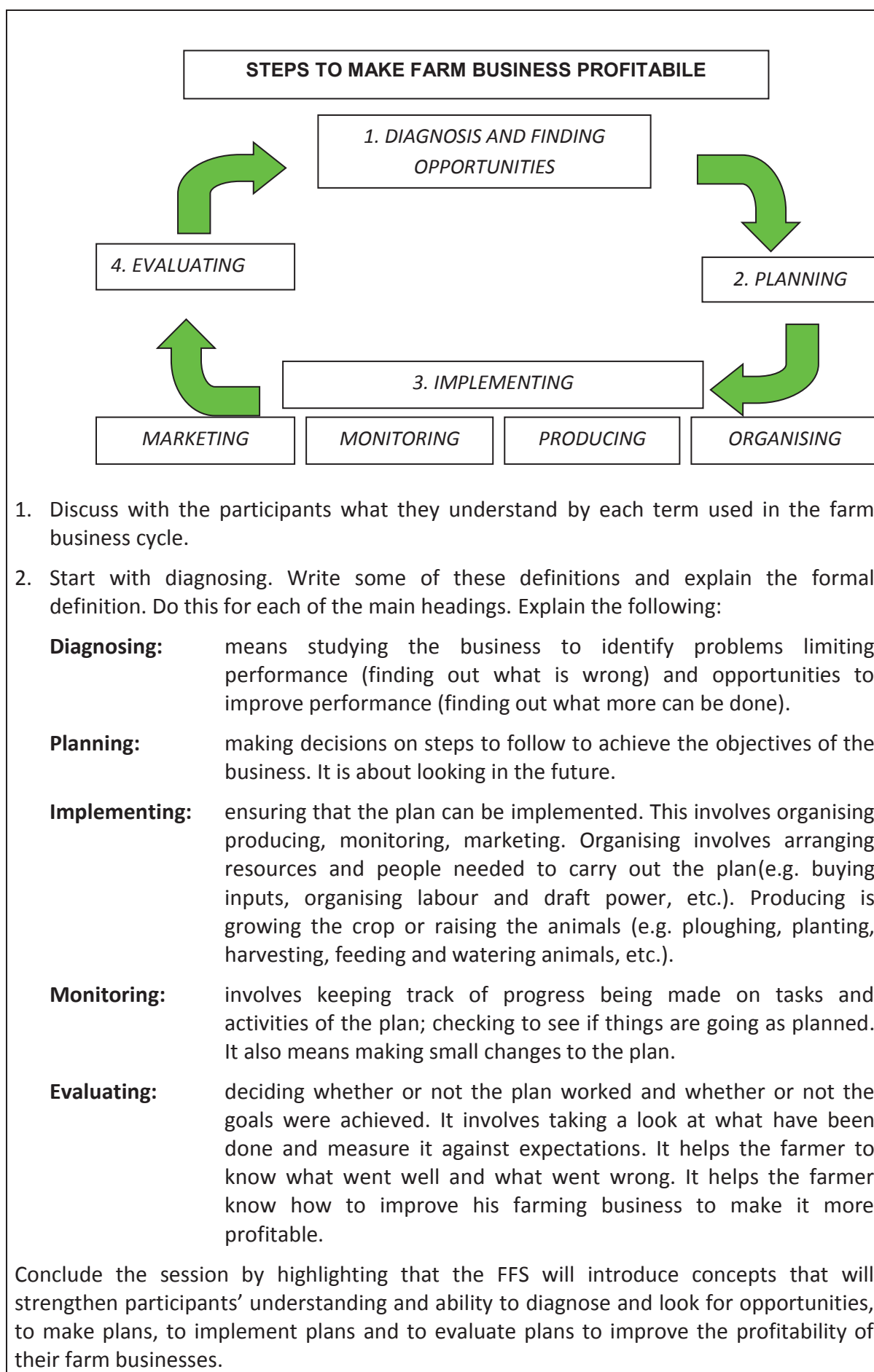
*You may want to take a break here. Get the participants to move around. Use an energiser.*

### 3.2.2 Exercise: The Farm Business Cycle

Explain the following:

The farm business cycle illustrates the steps we need to go through to improve the farm and focus on business orientation. The cycle is a process that starts with diagnosis and finding opportunities leading to planning. Planning leads to implementation. After implementation the farmer must evaluate the results. Then the farmer diagnoses, find opportunities again and makes a new plan. In this way the farm business is always being improved.

Draw the diagram below and ask the participants to copy into their books.



### 3.2.3 Exercise: Key Aspects of a Farm Business

#### **Guidance:**

*This exercise is designed to do two things: 1) to help the participants understand some of the most important aspects of a farm business and 2) to prepare them for writing their business plans*

#### **Process:**

1. Ask the participants to describe the most important aspects of a farm business. Ask them to make suggestions.
2. Write the following words on the board: *Important aspects of my farm business*
3. Ask the participants to write the heading.
4. Explain the following:
 

*We have looked at the farm as a business. A business is meant to be viable and successful. The aspects affecting the business viability are linked to the inputs, production, markets and the general business environment. These aspects should be favourable and the farmer should always be able to cope up with issues of risk in the farm business. The study of the farm business can be very complex, but there are a few very important things that will help us in improving the success of our farms.*
5. Organise the participants into small groups of 3-5. Ask each group to think about some of the most important things they believe that they need to know to make their farm businesses a success. Ask them to write their ideas into their exercise books. Give them about 5 minutes to do this.
6. When time is up, ask each group to share one of their ideas. Write it on the board. Repeat the process until all the ideas have been written down. If any group repeats an idea of another group, then add a tick (✓) next to the idea. Encourage discussion.
7. When the lists are done, use the following checklist to make sure they are all covered. These are the points that need to be highlighted. Eventually this is the list you need to reproduce on the board.
  - ✓ What to produce
  - ✓ How to produce it
  - ✓ Is it possible to produce it on my land
  - ✓ What resources and inputs are needed and where to get them
  - ✓ What labour do I need
  - ✓ What is the best market for the product
  - ✓ What price the product can get in the market
  - ✓ Is it profitable
  - ✓ Do I have enough cash
  - ✓ What are the risks and what to do about them
8. Ask the participants to write these points into their exercise book under the heading: *Very Important aspects of my farm business.*

### 3.3 TOPICS: FARM BUSINESS PROFIT

**Objective:**

To develop understanding and appreciation for the concept of profit as related to the farm businesses

To be able to calculate basic farm profits.

**Learning Process, Methods and Activities:**

Brainstorming

Group discussion

**Materials required:**

White Board or Black Board, markers or chalk

Exercise books

**Key questions:**

What is profit?

Where does profit come from?

What is income?

What are costs?

#### 3.3.1 Exercise: Understanding Profit

**Guidance:**

*This is a brainstorming exercise. It gives the participants an opportunity to start looking at the profitability of their farms. It will get them used to the idea of thinking in terms of income, cost and profit. This type of exercise will be repeated several times during FFS.*

**Process:**

1. Write the word *Profit* on the board.

2. Explain the following:

This exercise is about profit. In an earlier exercise we noted that farming has changed over the years. In the past the main purpose of farming was to produce food for the household. Now, the main purpose of farming is to produce cash for the household. Since this is the case, it is helpful to learn more about how to make the most cash from our farms.

3. Ask the participants to brainstorm the following questions. Write their ideas on the board. Lead the discussion to the idea that profit is the money left over from income after the costs are deducted.

- *What is profit?*
- *Why is profit important?*

4. Divide the table into three columns as shown in the example. On the column at the right write the word: *Profit*

		<b><u>PROFIT</u></b>
--	--	----------------------

5. Ask the participants to brainstorm the questions below. Write their ideas on the board under “Profit”. Lead the discussion to the idea that profit comes from income and costs.

- *Where does profit come from?*
- *How do you know that you have made a profit?*

When the brainstorming is done, write the words *Farm Income* and *Farm Costs* to the first and second columns as shown in the example.

**FARM INCOME**

**FARM COSTS**

**PROFIT**

6. Ask the participants to brainstorm what each of these words means. Start with income. Write their answers on the board.

***Guidance:***

*The participants may or may not be familiar with these terms. You will need to guide the discussion to answers along the following lines:*

*Income:* money received from selling products; and the value of produce consumed (note that farm income comes from value of all the products produced on the farm).

*Costs:* money spent to produce and market products; the value of all the things used to produce on the farm.

*Profit:* money left over from income after the costs are deducted

*The idea behind the discussion is to introduce the concept that the farm business is separate from the household. The profitability of the farm is based on the income and costs related to the farm and not the household (give examples of household expenses- schooling, clothing, health etc.) This will help reinforce idea of farming as a business.*

*Secondly, discussing farm costs opens the way to introduce variable and fixed costs which is needed to familiarize with the concept of enterprise profitability as separate from whole farm profitability.*

### **3.3.2 Exercise: The Farm Business, Farm Enterprises, Variable and Fixed Costs**

*Process:*

1. On the board write the following words *Farm Business* and *Farm Enterprises* as shown below.

**Farm Business**

**Farm Enterprises**

*Note that the farm business refers to the whole farm as a business; farm enterprises refer to the individual enterprises of the farm.*

2. Ask participants to brainstorm on the difference between the farm business and a farm enterprise. Lead the discussion to the idea that a farm business is made up of different enterprises. Each crop or livestock produced is an enterprise. A farmer may

produce maize, beans and eggs. Each of these products is an enterprise. Together they make the farm business as a whole. Explain that sometimes farmers make decisions about the whole farm business and other times they make decisions about a specific enterprise. So it is important to understand the difference.

**Guidance:**

*The participants may or may not know the difference between an enterprise and a whole farm business. So it may be necessary for you simply to tell them the difference.*

*This is being introduced here so that the discussion on profit and fixed and variable costs will be easier to understand and apply. The main aim is to make sure they understand that a farm may have more than one enterprise. So it is important to understand the difference.*

*Fixed costs should also be explained here briefly. Fixed costs will be discussed in more detail during the post season sessions as they plan for the whole farm business.*

3. On the board write the following words *Variable Costs* and *Fixed Costs* as shown in the example.

**Variable Costs**

**Fixed Costs**

4. Ask the participants to brainstorm what they know about variable and fixed costs. Write their ideas on the board under the appropriate headings. Lead the discussion to the following definitions:

**Variable costs:** *The costs of actual production. They apply to specific enterprises on the farm. These costs vary as output changes and occur only if something is produced. If the production volume increases, the variable costs also increase. Variable costs can be allocated to specific enterprises.*

**Fixed costs:** *The fixed costs apply to the farm as a whole. Fixed costs are costs that do not vary with changes in production output of a specific product. Fixed costs remain the same regardless of the output. Even if there is no output, there will still be fixed costs.*

5. Ask participants to list examples of variable costs and write them on the board
6. Talk in more detail about variable costs. Write on the board typical examples of variable costs:
  - cost of seeds,
  - cost of fertilizers,
  - cost of sprays,
  - cost of fuel for machines,
  - cost of hired labour,
  - cost of livestock feed
  - veterinary costs, etc.
7. Ask participants to list examples of fixed costs and write them on the board.
8. Talk in more detail about fixed costs. Write on the board typical examples of fixed costs:
  - cost of purchasing a tractor or a piece of equipment which is used on the whole farm,

- cost of implements and tools
- cost of a head of livestock for draft power
- cost of a packing shed
- cost of farm infrastructure (e.g. fencing)

### Key points

#### Key steps in a farm business enterprise

- Diagnosis and finding opportunities
- Planning
- Implementing: organising producing, monitoring, marketing
- Evaluating

#### Aspects of a farm business

- ➔ What to produce
- ➔ How to produce it
- ➔ If it is possible to produce on my land
- ➔ What resources and inputs are needed and where to get them
- ➔ What labour do I need
- ➔ The best market for the product
- ➔ What price the product can get in the market
- ➔ If it is profitable
- ➔ If I have enough cash
- ➔ What are the risks and what to do about them

#### Understanding Profit

- ➔ Income: money received from selling products
- ➔ Costs: money spent to produce and market products
- ➔ Profit: money left over from income after the costs are deducted
- ➔ The farm business is separate from the household. While the household relies on the income from the farm, the profitability of the farm is based on the income and costs related to the farm and not the household.

**Variable costs:** The costs of actual production. They apply to specific enterprises on the farm. These costs vary as output changes. These costs occur only if something is produced. They do not occur if nothing is produced. Variable costs can be allocated to specific enterprises.

**Fixed costs:** The fixed costs apply to the farm as a whole. Fixed costs are costs that do not vary with changes in production output of a specific product. Fixed costs remain the same regardless of the output. Even if there is no output, there will still be fixed costs.



### 3.4 TOPICS: UNDERSTANDING ENTERPRISE PROFITABILITY

#### Objective:

To understand enterprise profitability.  
To understand the effect of changes to an enterprise.

#### Materials required:

White Board or Black Board, markers or chalk, exercise books, sheets of paper

#### Learning Process, Methods and Activities:

Group discussion, simple calculations

#### Key questions:

How profitable is my enterprise?

#### 3.4.1 Exercise: Understanding Enterprise Budgets

##### Process:

1. Keep the participants in their enterprise groups and lead a discussion on the concept of profit. Get the farmers in each group to discuss what they mean by profit.

2. Explain the following:

*In our last meeting we started looking at farm performance. You have looked at indicators you use to decide how well your farm is performing; you also have looked at the strengths and weaknesses of your farm. Now we are going to look at another way to measure farm performance: “enterprise profitability”.*

3. Explain that an enterprise budget will help a farmer determine the profitability of the individual enterprise. It helps to identify areas where the farmer may be losing money or where he may be able to improve profitability.

4. Write the following on the board:

*INCOME*

*COST*

*ENTERPRISE PROFIT*

5. Explain the following and write the key words down opposite each heading on the board.

*An enterprise refers to one single crop or product. A farm may have more than one enterprise. Many farmers like to study their whole farm. This is important to do, but studying the whole can sometimes hide problems or opportunities within an individual enterprise. So it is also important to study each enterprise individually.*

*The performance of an enterprise can be evaluated through an enterprise budget. This is simply a list of income earned and costs of producing a product and is used to determine the expected profit from a farm enterprise. It is calculated on a per unit basis, such as a hectare of land or head of livestock, for one year or one production period. The key elements of an enterprise profit are Income, Costs, and Profit. The enterprise profit is the enterprise contribution to whole farm profit, normally referred to as **gross margin**.*



8. Ask the participants to agree on a period of time to use (e.g. May 2013 to October 2013). The period should cover the whole production cycle. For example for a crop this is the whole period from land clearing to selling. In this exercise the price and costs are specified in terms of the unit of measure which can be kgs, bushels, bags, tons, bottles etc.
9. The quantity is the amount of yield harvested for the income, for variable costs quantity specifies the amount of items used to produce the enterprise. The unit cost specifies the cost of each item per unit e.g. \$10 per 50kg bag of fertiliser. The amount specifies the total value of the item. See example below:

Measuring my _____ enterprise profit for the period May 2013 to October 2013									
Income					Variable costs				
Item	unit	quantity	unit price	amount	Item	unit	quantity	unit cost	amount
<b>Total Income</b>					<b>Total Variable Costs</b>				
					<b>Enterprise Profit</b>				

10. Ask the participants to write in the left column all the income they receive from selling their crop or by-products. Once they have written all the income, they should sum the amount and write the total in the space for “*Total Income*”.
11. Now ask the participants to write all the production costs associated with producing the crop or product they sold. Once they have written all the costs, they should sum the amount and write the total in the space for “*Total Variable Costs*”.
12. Now ask the participants to calculate profit by subtracting costs from income.
13. Explain that this is a simple and basic way to determine the profitability of an enterprise. If the resulting total (income less costs) is a negative number (that is, it is less than zero), then the enterprise is making a loss; the costs to produce are greater than the income. If the resulting total is a positive number, then the enterprise is making a profit; the income is greater than the costs. The larger the resulting total, the greater the profit. Each participant would have to decide for himself if the amount of profit is enough or not.

Measuring my maize enterprise profit for the period May 2013 to October 2013 (Indicative values)									
Income					Variable costs				
Item	unit	quantity	unit price (Le)	Amount (Le)	Item	unit	quantity	unit cost (Le)	Amount (Le)
maize	tons	2	800	1600	seed	kg	20	5	100
					fertiliser	50kg bags	2	60	120
					labour	acre	1	300	300
					harvesting	acre	1	400	400
<b>Total Income</b>				<b>1 600</b>	<b>Total Variable Costs</b>				<b>920</b>
					<b>Enterprise Profit</b>				<b>680</b>

Explain the following:

*In this example labour has been charged per hectare, but as we proceed during the FFS, we shall be recording data of how many hours or days we take per each activity. During the post season enterprise budgets we shall use the number of days as a unit of measure and this is referred to as man-days or person-days.*

*The enterprise profit may be increased by either looking for a good price for the commodity or increase yield levels. This will increase the total income of the enterprise. The profit may also be increased by reducing variable costs. Alternatives inputs or technologies should be sought that could lead to reduced costs and ultimately increase the level of profit. Lower costs might be attained for introducing labour saving technologies.*

### 3.4.2 Exercise: Determining the Effect of Small Changes on Enterprise Profitability

#### **Guidance:**

*This may be a whole new area of learning for the participants. They may not be used to reading tables and making calculations. Take the time to get the concept across. There will be more opportunities later to learn the technical parts such as the calculations.*

#### **Process:**

Keep participants in their respective enterprise groups

*Explain the following:*

*As a farmer, you may have to make small changes to your existing farm enterprises to increase profitability. At times these small changes may be sufficient to reduce costs or increase income; and in this way to generate profit. This involves what we call “changes at the margin”. However, before making small changes of the farming system it is advisable to see if it results in greater profits or, alternatively, losses to the farm business.*

- 1) Ask participants to discuss the type of small changes they could introduce to their respective enterprises to make more money. Examples might be using to start using

fertiliser or compost or farm yard manure as an alternative to chemical fertiliser. Or keeping pigs in a pen instead of letting them roam around freely. Or using another variety of rice.

- 2) After discussing the changes listed on the board, pick an example for illustration. Ask the participants if the change is likely to bring in more money to the enterprise, or not. If it brings in more money, what are the reasons? What is likely to change? Will it result in an increase in yield? Will it lead to more income? Or will the change reduce the amount of labour used? If so will this result in lower labour costs? And will this ultimately produce benefits and more income?
- 3) Ask the participants to consider the effect of small changes on the profitability of their group enterprise. Again ask them to look at the changes they have proposed and see if they are likely to produce more in terms of yield or may get a higher price for their products or may have less costs, e.g. through less inputs being used. Alternatively, the change may bring about an increase in costs or a reduction in yield and income. The participants should explain the reasons for this change.
- 4) Ask one person from each group to present the group findings and share their results with rest of the farmers.
- 5) Summarize the discussions and explain that, once you realise that the change you want to make brings a positive change, it is advisable to do the enterprise profitability budget before you implement the change. This will show in detail the cost and benefits implications.
- 6) Take the participants through the hand-out on enterprise budgets.

### Key Points

#### Enterprise Profit

- ➔ Enterprise budgets help farmers to analyse the profitability of the farm by looking at the details of the costs and income.
- ➔ An enterprise budget is calculated per unit basis (e.g. per hectare, acre).
- ➔ A farmer can use enterprise budgets to compare the most profitable enterprises.
- ➔ Profit is the difference between income and expenses.
- ➔ Changes made on an enterprise may affect the yields, costs or profit of the enterprise, it crucial to understand the effect of any change before implementation.
- ➔ A farmer needs to keep good records of his farming activities.

**3.5 TOPICS: DETERMINING THE MINIMUM PRICE AND YIELD FOR THE ENTERPRISE***Objective:*

To understand the minimum price and yield that makes their enterprises profitable.

*Materials required:*

White Board or Black Board, markers or chalk, exercise books, sheets of paper

*Learning Process, Methods and Activities:*

group discussion, simple calculations

*Key questions:*

What is the minimum price that I can charge for my produce without making a loss?

What is the minimum per hectare or unit yield that I need to achieve in order to make a profit?

**3.5.1 Exercise: Calculating the Break Even Price***Process:*

Explain the following:

*We have developed our enterprise profitability budgets. Now we need to review the enterprises budgets and calculate the minimum price that we could sell the produce without making a loss. This information will assist us in pricing the produce to be sold and assist in negotiations with buyers.*

1. Ask participants to turn to the page in their exercise books where they developed their enterprise budgets.
2. Get the participants with similar enterprises to form a group. They could revert back to the groups that they were in when they developed their enterprise profitability budgets.
3. Explain the following:

*Break-even price is the minimum acceptable price that covers the cost of production. At this price the income received will be equal to the cost of production and the profit will be zero. After determining the breakeven price, you will then know the minimum price that you can charge for produce sold. You should consider the level of mark-up that you wish to charge. The mark-up should take into account an estimate the time that you spent in producing and selling the product. The break-even price is calculated by dividing the total variable costs with the expected per unit of production, as shown below.*

Present the case of the maize enterprise again. The enterprise was 1 ha of maize, with a yield of 2 tons per ha. The enterprise had the following income and costs:

Measuring my maize enterprise profit for the period May 2013 to October 2013 (indicative values)									
Income					Variable costs				
Item	unit	quantity	unit price (Le)	Amount (\$)	Item	unit	quantity	unit cost (Le)	Amount (\$)
maize	tons	2	800	1,600	seed	kg	20	5	100
					fertiliser	50kg bags	2	60	120
					labour	ha	1	300	300
					harvesting	ha	1	400	400
<b>Total Income</b>				<b>1,600</b>	<b>Total Variable Costs</b>				<b>920</b>
					<b>Enterprise Profit</b>				<b>680</b>

Break Even price = Total Variable Costs per ha divided by yield /ha

$$\text{Break Even Price} = \frac{\$ 920/\text{ha}}{2 \text{ tons/ha}}$$

Therefore the break-even price is **\$460 per tonne**. In this example the farmer is selling the produce at Le 3,600,000 per tonne and the difference of \$ 340 (800-460) contributes to profit.

### 3.5.2 Exercise: Calculating Break Even Yield

1. Explain the following:

The break even yield is the minimum level of production that you can produce to cover the costs of production. It is calculated by dividing the Total Variable Costs/ha with the unit price of the produce.

2. Write on the board:

$$\text{Break Even Yield} = \frac{\text{Total Variable Costs/unit}}{\text{Unit Price of produce}}$$

3. Write on the board, the Break Even Yield for the example we have used

$$= \frac{\$920/\text{ha}}{\$800}$$

The breakeven yield = **1.15 tonnes per ha**. In this example the farmer is producing slightly above the break even yield (2 tons). A slight decrease in yield could have a notable negative effect on profit. The farmer should find ways of improving his production efficiency in order to be assured of covering the costs of production and making a profit.

4. Get the participants into their enterprise groups. Ask the participants if they know the yields from their enterprises and the prices on the market. If they know, ask them to calculate the breakeven price and break-even yield for their produce. If they do not know, explain the importance of record keeping. When finished, ask the group to share their results with the other participants.

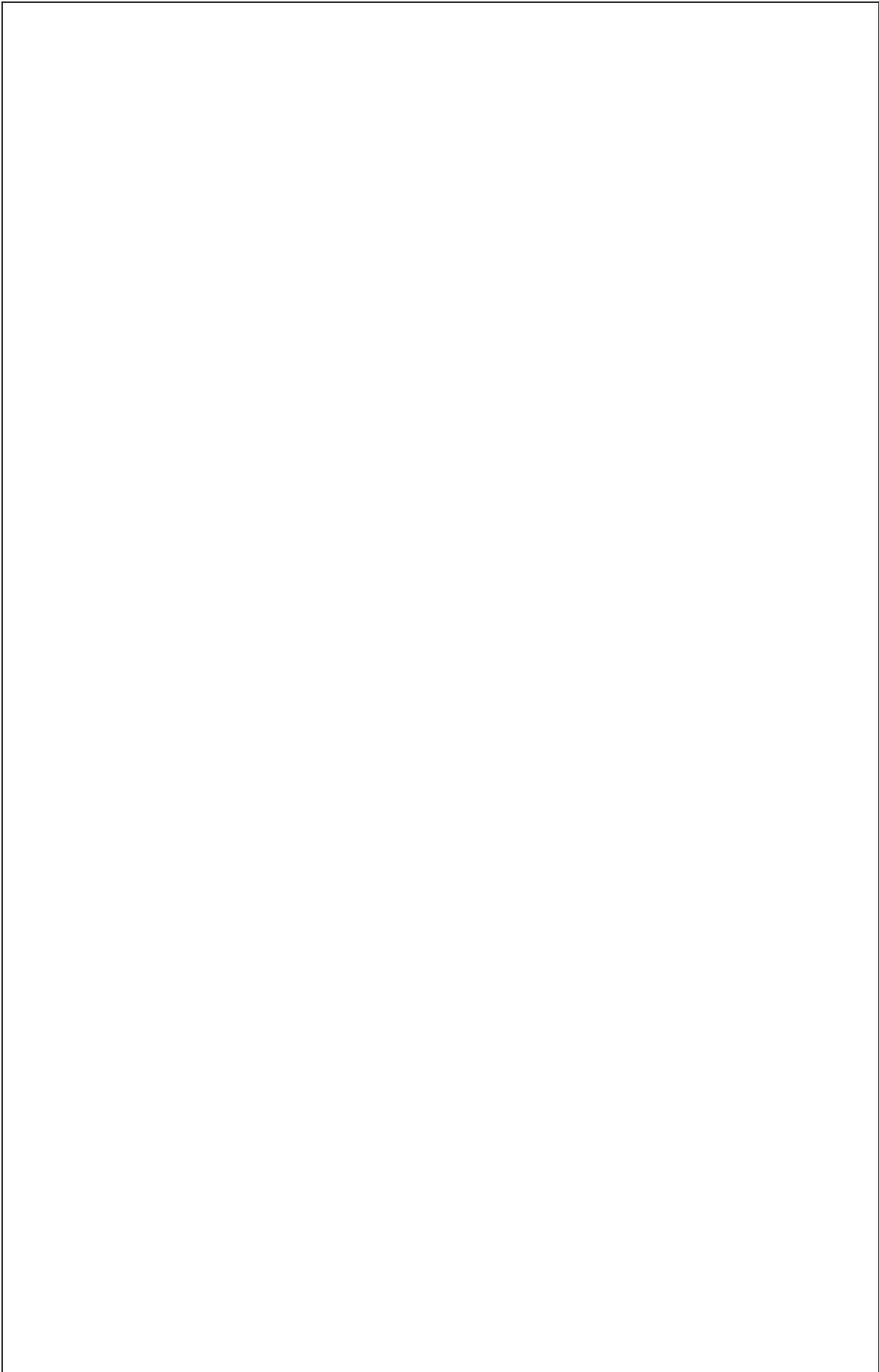
Explain that production efficiency can be improved through the introduction of improved technological practices, labour management and/or husbandry management. These factors will increase yield per unit area.

5. Explain the following:

*The breakeven price should assist farmers in negotiating with buyers. Accepting prices below the break-even price will mean making a loss. However, the break-even price may be high due to production inefficiencies. This results in a level of production per unit that is below the average. As a result, a farmer cannot charge more to cover up for the poor management.*

***The farmer needs to check range of yield levels in the area and range of price levels (benchmarking). This will assist in making an informed decision.***

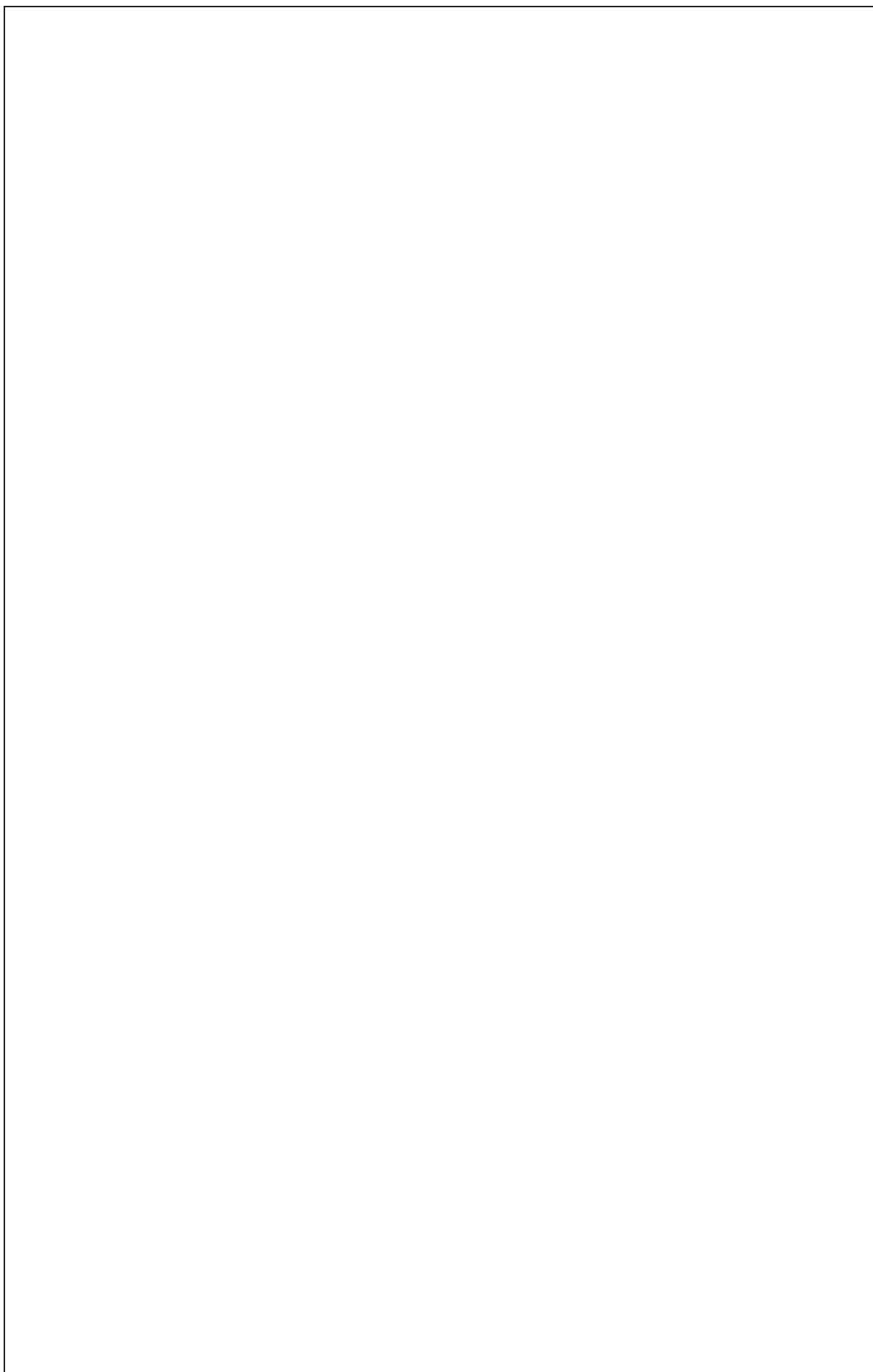




# **MODULE 4**

## **DIAGNOSING PROBLEMS AND FINDING OPPORTUNITIES**





## MODULE 4 – DIAGNOSING PROBLEMS AND FINDING OPPORTUNITIES

This section explains, through a sequence of practical tools, how to identify farming problems and opportunities, analyse the cause of the problems, identify a range of potential options, and **how to select the most interesting options for studying or testing** in the FFS.

It is very important that this module is done properly. This exercise should be a cornerstone for future activities.

### ***Learning Objectives***

- ✓ Characterise the farming environment and identify resource and farm problems.
- ✓ Analyse management and productivity problems and identify opportunities
- ✓ Identify and select the best options for study and adaptation to local farm situation by the FFS.

### **4.1 REVIEW OF PROBLEMS AND OPPORTUNITIES**

The main goal of smallholder farmers is to improve their livelihoods through generating improved food security and income from their farming activities. As smallholders depend largely on their natural resources, having limited access to external inputs, livelihood improvement will depend on intensifying of existing production and improving the productivity of their land, water and labour. This requires finding solutions to farmers' main problems, for example:

- Lack of access to sufficient land
- Insufficient precipitation and lack of wells or ability to use them often
- Low yields and poor harvests due to poor soil quality and lack of access to reproduction material
- Lack of access to pest and disease control
- Poor roads to access market and low market prices
- Lack of knowledge and skills and poverty and food insecurity

The facilitator can help the FFS group to review the different farming systems and farm types in the area and assess the effects of the current practices used in terms of use of resources, productivity and livelihoods. You can characterise or differentiate the key farming crop systems practices that have been developed by farmers in their area by:

- agro-ecological context: climate, land and water resources, adapted plant and animal species and habitats (vegetation and land use type);
- selected farm enterprises, farming intensity and use of external inputs (i.e. free grazing, intensive high value vegetable production, integrated systems (trees, crops, livestock), specialised systems oriented to markets; and
- by the socio-economic situation of the farmers (farm size, education, assets, etc.).

This will help to identify the appropriate solutions for addressing problems which such as selection new enterprises, techniques already introduced in the area but not widely practiced, and/or new practices or technologies not currently known in the area.

This information will contribute to the next step related to analysis of farming problems, potential opportunities or improvement and will facilitate decision making in selecting the area of study for the FFS.

#### 4.2 TOPICS: WHAT IS THE FARMING SITUATION AND WHAT ARE THE PROBLEMS?

##### *Objective:*

For the participants to understand their farm in terms of problems they may face and the potential for farming as a business.

To create awareness that farming is a business.

To build the participants' capacity to manage their farms as a business.

##### *Materials required:*

White Board or Black Board, markers or chalk, exercise books, sheets of paper

##### *Learning Process, Methods and Activities:*

Sketch map preparation, group discussion, simple calculations

##### *Key questions:*

How well is my farm performing?

How do I know?

##### **Guidance:**

*In this session the participants will work in small groups of 2 or 3. They will be asked to draw a sketch map of their own farms. The sketch map should show:*

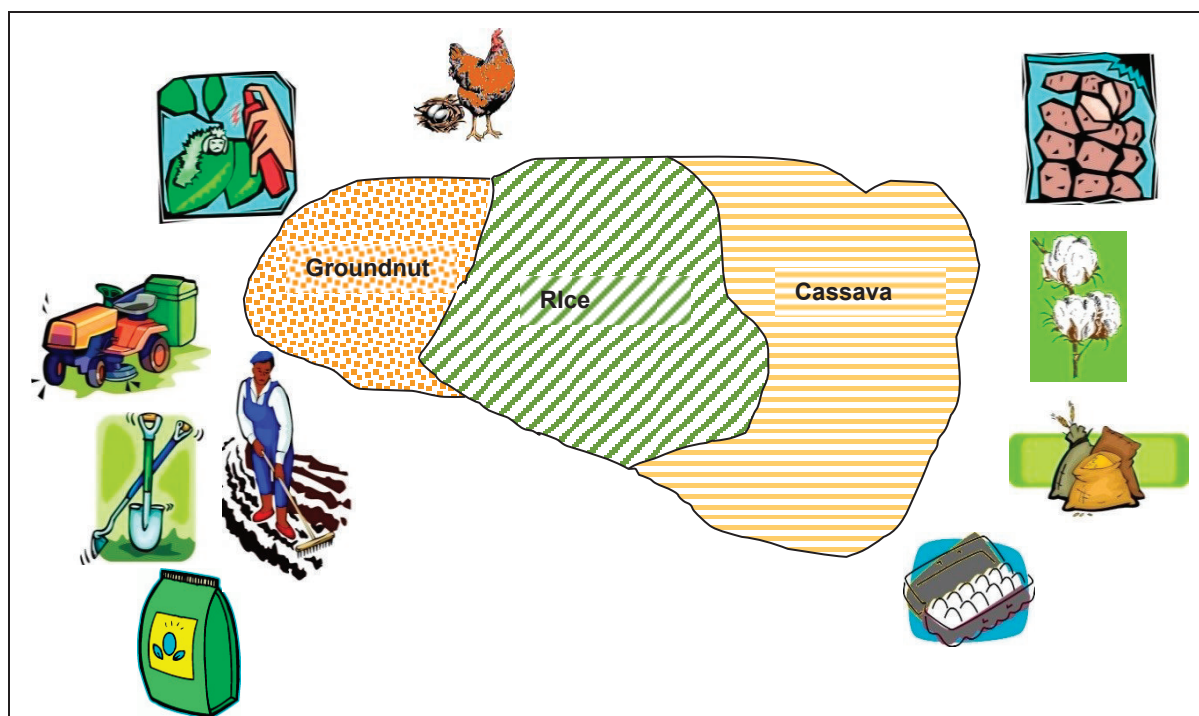
1. *How the land is used*
2. *What technology is used*
3. *What products are produced*
4. *What inputs are used*

##### **4.2.1 Exercise: Developing a Farm Map**

##### *Process:*

6. Organise the participants into small groups of 2 or 3. Distribute extra writing and drawing materials as needed.
7. Ask each participant to draw his/her farm. They should not worry about accuracy or drawing to scale. Use whatever writing materials are available. Simple pencil drawings will be sufficient. As they draw their maps, they should share ideas and ask questions of one another about their farms.

Example



8. When the maps are done, ask the participants to compare the farms. How are they similar? How are they different? Why? Look for common points. This may be the first time the participants have ever drawn a map of their farms. It can be a very rewarding experience.
9. Ask the participants to transfer their farm maps into their exercise books. They are encouraged to improve their maps based on the discussions they have just had.

#### 4.2.2 Exercise: Resource Mapping

##### **Guidance**

This exercise involves asking a representative sub-group of the FFS to draw a map, or construct a model, of the main bio-physical and/or socio-economic features of their village and its surrounding area. Separate subgroups might be asked to map or model different features. Preparing such maps or models during the initial school sessions is a particularly useful visual aid for diagnostic purposes. It also helps in reaching a consensus among the participants on how they perceive the bio-physical resources and socio-economic situation within their community.

Preparing a map of natural resources helps farmers think about and discuss differences in land and water availability, land use, soil type and risks (e.g. lack of water for irrigation, wind). A resource map can be used to raise and discuss issues related to availability of land, quality of soil, adequacy for different agricultural productions, available water for irrigation, risks, seasonal/annual variations of natural resources, etc.

The primary concern is not the precision of the mapping, but to obtain useful information about local perceptions of resources. Maps may include:

- Agricultural lands (available land, land tenure, crop varieties, livestock types, land form/location)

- Water sources (wells, drink fountain, rivers, springs, reservoirs, irrigation canals) and water use
- Hydrological units, drainage system (river system, watershed or hydrological divide, runoff areas e.g. rock outcrops, water logging, wetlands, salinity)
- Agro-ecological zones (soils, slopes, altitude, average rainfall and temperatures)
- Infrastructure (roads, houses, schools, other buildings)

*Learning objectives*

- Visualize territory and resources of the community territory
- Identify and locate the different fields with different resources
- Produce maps of resources and their locations.

*Timing*

At the start of FFS sessions in which farmers' crop production problems and opportunities are identified.

*Preparation*

Select a suitable location to draw the maps.

*Time:* 2 hours

*Materials*

- Sticks, pebbles, leaves, sawdust, flour or any other local material.
- Flip chart paper
- Markers

*Steps:*

1. Select a large open space with the cleared ground.
2. Ask a participant to place a rock or leaf to represent a central and important landmark.
3. Participants are then asked to draw other important things on the map. Participants should not be interrupted unless they stop drawing, in which case questions can be asked such as whether there is anything else of importance that should be added.
4. When the map is completed, ask the participants to describe it and to discuss the features represented. Ask questions about anything that is unclear.
5. Finally, the facilitator may want to ask participants to draw a map of how they would like to see the future. This allows for some preliminary planning ideas and encourages people to begin contributing their thoughts in the participatory planning process.

Some suggested questions for processing discussion

- What resources are abundant? Which ones are in shortage?
- Which resources are most limiting to agricultural production (for rice, cassava, etc.)
- What resources are used/unused? Which are degrading or improving?
- What are the main land tenure structures?
- What is the present farming system?

*Facilitators' notes:* If women are not actively contributing with men or if they prefer to work separately, it may be useful to get both men and women to draw their own separate resource maps. They will tend to illustrate different features according to their perceived importance and influence, e.g. schools, finance and credit institutions, service providers, input suppliers, extension services, research, etc.



### 4.3 TOPICS: UNDERSTANDING PROBLEMS ON THE FARM

All farming communities encounter problems they are not able to solve directly. Before moving directly looking for solutions, it is important for an FFS to analyse the current farm situation and to understand the underlying causes of the problems.

#### 4.3.1 Exercise: Identifying Farming Problems and Constraints

*Learning objectives:* Identify farming problems and constraints.

*Timing:* During FFS sessions in which crop production problems and opportunities are identified. This exercise follows the exercise “resource map”

*Preparation:* The resource map of the village prepared in exercise

*Materials*

- cards
- pens

*Time:* 1 hour

*Steps:*

1. Use the map elaborated in the previous exercise to determine production practices used in the village. List all the practices identified.
2. Discuss problems and constraints with each technology and try to identify the reasons underlying the causes.
3. Form small groups (3 or 4 persons) and write all the problems and constraints on cards.
4. Each group presents their cards to the other groups. Fix the cards on a board or on a flipchart for all to see. Keep discussions during the presentations.
5. After the presentations, cluster and regroup the problems and constraints according to major categories. For example, the major categories could be related to:
  - Lack of sufficient land
  - Insufficient water supply for crops
  - Low yields and poor harvests due to poor quality soil and lack of precipitation
  - Lack of access to pest and disease control
  - Lack of access to reproduction material
  - Poor access to market and low market prices
  - Lack of knowledge and skills
6. Name each cluster of problems and constraints.
7. Summarise the main findings of the exercise.

#### Some suggested questions for processing discussion

- What can they do to get more land?
- What are difficulties in renting/leasing land?
- What are problems with irrigation? How can they be solved?



- Do they have problems with pests and diseases and how did they solve them? Do they have someone they can ask or get advice?
- What problems do they have with input purchasing?
- What are the different problems identified by the different socio-economic groups? Which priority problems did different groups share? Which priority problems are related?
- Who are the people/institutions having a stake in the management of the land or watershed? How big is their stake?
- Are there conflicts among stakeholders? Are there existing partnerships between stakeholders?
- What are the current coping strategies? What are the gender implications (e.g. women go further and further to fetch water in the dry season)?
- What are the main problems identified by women/men? Which problems are the same for everyone?

#### 4.3.2 Exercise: Targeting the Problem

The objective of this session is to focus farmer's attention on problems which are within their competence and to define all possible points for potential improvement.

A similar exercise was already at the beginning, but it needs to be repeated to keep farmers focused on the process of diagnosis of the problem. Our goal should be to define the points for potential improvement and then prioritize and improve them.

##### *Learning objective:*

To provide that participants have better understanding of problems which are targeted, and which define points of potential improvements in the way of having control or at least influence, and then to prioritize and improve them.

##### *Learning Process, Methods and Activities*

Brainstorming in small groups

##### *Materials:*

White Board or Black Board, markers or chalk card

*Time:* 2 h

Key questions: Which problems will be targeted? Over which problems we have influence?

##### **Guidance:**

*Objective of this exercise is to separate problems for which others are responsible from those that can be solved by the farmer. The goal is to focus more on problems for which the farmer is responsible and not on those that are not under farmers influence/control.*

##### *Process:*

1. Divide into 3-4 groups and distribute cards-papers
2. Ask each of them to write 5 problems which in their opinion, if solved, would improve their income

3. After they finish with writing, write on the left side of the board:

**Solution/improvement depending on  
us**

**Solution/improvement depending on  
others**

4. Collect answers from groups and from each paper/card read what is written? Ask them what they think who is responsible for solving of the problem?
5. Put on the right side the problems depending on others (e.g. expensive inputs) and on the left side, the problems depending on us (e.g. lack of knowledge). Problems for which both sides are responsible should be put in the centre.

**Solution/improvement depending on us**

Low yields and poor harvests  
Inability to purchase input material  
Inability of pest and disease control  
Lack of knowledge

**Solution/improvement depending on others**

Expensive inputs  
Poor road infrastructure,  
Poor health care

10. Group the problems while reading and placing them on the board (e.g. problems related to equipment place next to each other, etc.)
11. Probably most farmers will opt against this approach and say that most or all problems are not in their competence, but in the competence of someone else. Explain that the goal of the approach is to use the available resources more efficiently through the FFS. Explain that most of our time is spent in discussing problems that we cannot influence.
10. Ask them: can we use time within FFS to find solutions to problems affecting us and on which we have some influence? Encourage discussion.
11. Ask them if we can accept this approach to work?

**Guidance:** *Most of them will say that the money is problem? There is saying that “our present problems are our previous solutions”. Does this mean that our previous solutions were not good enough, so now we do not have enough money? Ask them what was not good in the past, resulting in lack of money now? That is why we need FFS - to learn to better manage crops and farm to be able to generate more money.*

12. There is a saying “if things are not going in the desired way, maybe there is something you don’t know, right?” Maybe we need to upgrade some of our knowledge? What is their opinion about this?
13. Ask the participants if any of the stated problems were also present in previous years and to which extent?
14. How much of the same problems will be present in next several years?

**Guidance:** *The answer will probably be that same problems were present in the past. Can we conclude that they will also be present in future?*

15. Ask if some of the problems can be improved now, so fewer problems will occur in the future? Support the discussion on this subject.
16. Which problems can immediately be improved?
17. Ask the participants to look again on the board. Ask them what problems can be discussed in the FFS?

**Guidance:** *Explain that our goal is not to focus on problems which are not under our influence. We want to use our time on problems over which we have some control. The goal should be to define what, “we” do not we do well, and not what someone else does not or does well.*

*For example: You say dealers/buyers of products are the problem. But you need to ask the farmers to try and define the problem as for instance “we have no idea how to operate and appear on the market”. You say the problem is the climate factor which have a strong influence on yield; however try to define the problem in the following way: “do we have enough knowledge to manage crops in different conditions”? In this way we will define the causes of problems easier, determine potential points of improvement, prioritize and improve them.*

*If farmers have problems that are not under their competence, explain to them that it will be discussed in the FFS about the possibility of influencing those who are responsible for solving it, but the priority will be the problems under their control/competence.*

#### 4.3.3 Exercise: Where is the Problem?

**Learning objective:** for farmers to understand that decisions related to WHAT they produce and HOW they produce are very important for the operation and success of their farm. These depend on resources they have but also on their decisions. These decisions can be crucial for improvement of income generating activities on the farm.

**Learning Process, Methods and Activities**

Brainstorming in small groups

**Materials:**

White Board or Black Board, markers or chalk card

**Key questions:**

Where is the problem with ours farms?

- doing the right thing in the wrong way or
- doing wrong things in the right way or
- doing wrong thing in the wrong way?

**Process:**

1. Explain that when we define problems, we need to start from the beginning, from WHAT the farm produces (e.g. rice, cassava, maize, vegetable, etc.) and HOW it operates (use of irrigation, fertilizers, plant protection, cultivars, etc.). Define a successful farm that is doing right things, in the right way, in the long- and short-term. Define an unsuccessful farm that is doing the right thing in the wrong way or wrong

things in the right way or wrong thing in the wrong way. Where is the problem with yours farms? Write on the board all three possibilities for failure?

- Doing right thing in the wrong way
- Doing wrong things in the right way
- Doing wrong thing in the wrong way

2. Ask what is the problem associated with yours farms? To which group they belong?
3. Remind the farmers what kind of agreement we made at the beginning when we discuss defining of the problem?

**Guidance:**

*Dealing with problems we can influence may be difficult for farmers. Help them with the following questions:*

- ✓ *Ask if all crops are equally profitable?*
  - ✓ *Add income can greatly depend on type of crops we grow, they can increase or decrease depending on that (WHAT are we doing/producing). The answer should be yes. Can we conclude that the decision of WHAT to do is very important to be successful farm?*
  - ✓ *Ask if they are interested in discovering a new income generation opportunities?*
4. Repeat the definition of successful farm doing the right thing in the right way. Ask if they are doing/producing in the right way, for instance rice?

*Note: Responses are likely to vary. Ask them what rice yield they achieve? Explain to them that in other regions/countries in the world 10 times higher yield is realized. In Sierra Leone there are probably farmers who have several times higher yields and realize higher income. Does this perhaps indicate that they do not work as they should-in the right way. Support discussion on this topic.*

5. Most farmers would explain the difference in climatic conditions and other factors. Ask whether there may be differences in how we work/production technology (apply the irrigation, fertilization, plant protection, varieties that we use, etc.)? What are the differences between successful famers and us?

**Guidelines:**

*Find the best farmers who know their yields and calculate profitability with them. Compare the profitability of rice and cassava production with yield and profitability realized by the group; ask them to explain the difference? **There is probably a huge potential for improvements hiding here.***

6. Ask them if they can improve how they work? Encourage discussion on this topic.
7. Would this increase our profit? Ask them how we can do this?
8. After their discussion, you give your opinion of what the differences are and how we can do and what kind of impact it can have on profitability.

9. If farmers insist on conditions (climate, soil, etc.) as the main reasons for the big difference in outputs (returns), ask if it that enterprise (which is not adapted to conditions) the right choice and the right thing for his/her farm.
10. Maybe there are other production/enterprises that are better adapted to the resources available to them?
11. What are these productions/enterprises? Encourage discussion on this topic.
12. Sierra Leone is a developing country and the farmers have to adapt and to change the way they work. Ask if you notice changes in recent years, which changes are noticed?
13. Conclude with comments that the farm in order to survive in the future needs to continuously change; they have to do the right things in the right way in the short and long term. Ask the farmer to write this down in a notebook
14. Finally ask participants to think about the future in the business. Where and what you can do better, smarter and more efficiently? What can you do for a new market?

#### **4.3.4 Exercise: Understanding the Strengths and Weaknesses of Your Farm**

##### **Guidance:**

*In this session, the participant will conduct an analysis of strengths and weaknesses of their farms.*

*Strengths are generally positive things about the farm and weaknesses are generally negative things about the farm.*

*Before you do the analysis, the participants will identify the most important aspects influencing the farm business. This will be done through a guided brainstorming exercise. Then they will do an analysis of the strengths and weaknesses of the farms using the agreed key aspects.*

##### **Process:**

1. Explain that in this exercise they are going to look at the strengths and weaknesses of their own farms.
2. Ask the participants to reflect on the strengths and weaknesses of their farm operations
3. List the most common replies on the board under two columns.
4. Ask the participants how they measure the performance of their farm. What indicators do they use? How do they know that a particular enterprise is weak? Write their answers on the board.
5. Form small groups of 3-4 participants who have chosen the same enterprise (it can be the same small groups formed earlier).
6. Ask each group to brainstorm on what might be the key issues to be evaluated on their farms. Write the answers on the board as they discuss. If an issue is repeated just tick to indicate the number of times it has been mentioned.

7. After the key issues have all been written on the board, encourage discussion around each of the categories. What are the most important issues? Why? What need to be evaluated more carefully?
8. Ask them to make a list containing 10 most significant topics. If any of these are missing from the board, add them to the list on the board and ask the participants to copy them all into their exercise books.
  - ✓ Use of farm land
  - ✓ Choice of crops, livestock and poultry
  - ✓ Farming technology and input use
  - ✓ Labour supply and use
  - ✓ Harvesting, post-harvest, storage and packaging
  - ✓ Marketing, transport and delivery arrangements
  - ✓ Savings, capital formation and use
  - ✓ Records and record keeping
  - ✓ Linkage to input suppliers
  - ✓ Linkages to markets
  - ✓ Linkages to financial institutions
  - ✓ Networking with other farmers or farmer groups,

9. Clear off the board and draw the following table on the board.

	Use of farm land
STRENGTH	
WEAKNESS	

10. Write the topic: Use of farm land
11. Ask participants to copy this topic into their exercise books and then to divide the page into four sections similar to the diagram on the board.
12. Explain that they are going to conduct an analysis of the strengths and weaknesses of their own farms. Use the following example to help them to do the analysis.

	Use of farm land
STRENGTHS	<ul style="list-style-type: none"> <li>• My farm produces enough food for my family with some surplus to sell</li> <li>• My farm is good for many crops</li> </ul>
WEAKNESSES	<ul style="list-style-type: none"> <li>• I don't actually know which of my crops is most profitable</li> <li>• My cattle do not get good prices at the market because they are too thin.</li> </ul>

13. Ask the participant groups to brainstorm each topic and assess the performance of his/her own farm and enterprises.

14. When the groups have finished the analysis for the first topic for each individual farm, start with one of the enterprises and ask them to share their results with the rest of the participants. Write these on the board.
15. Once all the topics have been written on the board, start a discussion on the strengths and weaknesses. Which is the greatest strength? Weakness?
16. Once you have completed the discussion about the first topic, choose another enterprise and ask the relevant group to share its findings.
17. Repeat this process until all the enterprises have been covered.
18. Take a short break. During this time, put up a new analysis table. At the top write the topic: *Choice of crops, livestock and poultry*
19. Ask each group to conduct an analysis of the strengths and weaknesses for the second topic.
20. When this is completed, ask them to share their results; one enterprise at a time.
21. Repeat this process until all of the important topics have been covered. Be sure to take a break at the end of each topic.

#### 4.3.5 Exercise: Translating the Analysis of Strengths and Weaknesses into Actions

##### **Guidance:**

*The purpose of this exercise is to help the participants identify the most important strengths and weaknesses affecting their farms and to decide what action to take.*

##### **Process:**

1. Ask the participants to draw the following grid in their exercise books.

	POSSIBLE ACTION
<u>STRENGTHS</u>	
<u>WEAKNESSES</u>	

2. Organise the participants into the same small groups they had for the strengths and weaknesses exercise. Ask each group to discuss all the points raised in this discussion. Ask each participant to choose one strength and one weakness (from any of the points covered) that they feel makes the biggest impact on the profitability of their farm. Ask them to write each one under the correct heading in the first column.
3. For each strength and weakness chosen, they should consider one possible action they could take that would help improve the profitability of their farm.
4. When they have finished ask some of them to share their answers. Encourage the participants to implement their plans.



#### 4.4 TOPICS: ANALYSIS OF PROBLEM, CAUSE AND SOLUTION

##### 4.4.1 Exercise: Problem/Solution Analysis Chart

###### **Guidance**

*The objective is to identify the causes, driving forces and effects affecting profitability in the farm. The starting point is the prepared list of identified problems, analysis of strengths and weaknesses from the previous exercises.*

*Many of causes of problem contributing to low productivity stem from the socio-economic, organizational, infrastructural, credit and marketing environment in which farming takes place. The emphasis is to be primarily focused on crop and livestock production problems, as these are the issues for which solutions can be tested in the field during the course of an FFS.*

*Coping strategies are important since they may be used for improvement. We can also learn if efforts to address a particular problem have already been made, failed or have not addressed the problem completely.*

*The problem analysis chart also looks at opportunities for development. For this reason it is important that FFS Facilitator is present and takes active role. While participants may have very good ideas about what they need, they may lack information about the options. It is very important that farmers are presented with all possibilities which the Facilitator thinks are important and can be of use in solving or alleviating problems.*

###### *Learning objectives*

Analyse problems in a systematic manner.

###### *Timing:*

During FFS sessions in which crop production or livestock problems and opportunities are identified.

###### *Materials*

- Flip chart paper
- Easels or walls or fences to hang up the maps
- diagrams and charts
- masking tape or tacks
- markers
- A blank Problem Analysis Chart.

*Time : 2h*

Some suggested questions for discussions:

- Based on what something is considered to be a cause of a problem? Why apply certain strategy in solving?
- What are the current coping strategies? What are the gender implications (e.g. women go further and further to fetch water in the dry season)?
- What are the opportunities to solve the problems? What opportunities did the community members suggest? By the MAFFS? By the technical experts? Which can be implemented locally and which require external assistance?
- Who identified the problem? Is the diagnosis correct?
- Do you need someone to help in diagnosing the problem?



*Steps:*

1. Plenary meeting presentation of the priority problems (resume of the outcome of previous exercise).
2. Divide the groups in sub-groups of 4-5 persons and facilitated discussions of the cause of problem.
4. Each sub-group fills in the Problem Analysis Chart listing down the far left column the priority problems identified by each of the different groups. In the second column, list the causes of the problems as identified.
5. Plenary presentation of Problem Analysis Charts of all sub-groups.
6. Summarise the work of the sub-groups in one Problem Analysis Chart.
7. Then ask people to explain what they currently do to cope with their problems. List the coping strategies in the third column. Finally, with specific reference to each problem discuss opportunities for improvement asking both the local community members and outside experts to contribute their ideas. List the solutions in the fourth column.

*Example*

PROBLEM	ROOT CAUSE	COPYING STRATEGY	LIST SOLUTIONS
Low income generation	<ul style="list-style-type: none"> <li>- Lack of land</li> <li>- No clear strategy on what to grow on small area</li> <li>- No capital</li> <li>- Lack of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>- Crops are grown in traditional way for their own purpose only</li> <li>- Want to invest less possible in production</li> </ul>	Introduce high value crop Take credit, borrow money Acquire more knowledge
Low yields	Poor quality soil and lack of pest and disease control	Crops are grown on larger areas	Fertilizer is used to improve the crop nutrition. Plant protection is used
Inability to purchase reproduction material	Income deficiency	Crops are grown to satisfy the needs of the farmer on small areas	It is necessary to improve crop management in order to generate more income. Produce for the market, include other enterprises that can generate more income, investments.
No access to pest and disease control	Lack of knowledge how to protect the crops	Larger areas are planted	More knowledge on how to protect the crops should be acquired, crops changed

## 4.5 TOPICS: PRODUCING WHAT THE MARKET WANTS

### Objectives:

- ✓ To understand the marketing process
- ✓ To select enterprises for focus of FFS attention.
- ✓ To validate the selection enterprises by looking at market opportunities.

### 4.5.1 Exercise: Understanding the Basics of the Market

#### Process:

1. Write the word *MARKETING* on the left hand side of the board.
2. Start by asking participants what they understand by marketing. Write key words of their replies on the board. Make sure the words are written on one half of the board. See example.

#### MARKETING

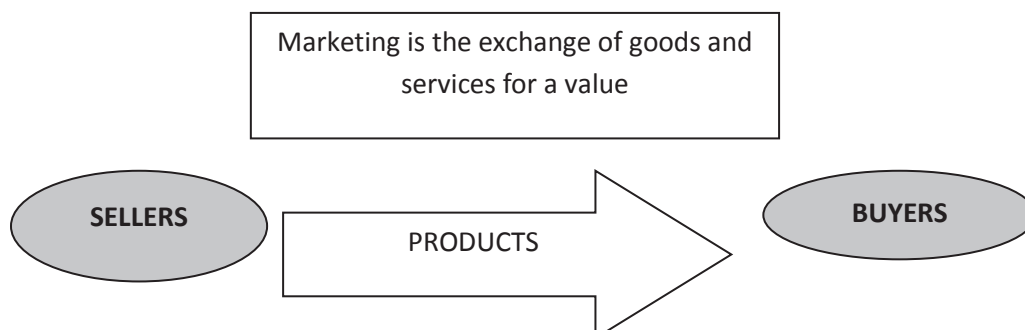
Sale of products  
 Buying and selling  
 Quality control  
 Packaging  
 Traders  
 Buyers

3. End by giving them this definition.

*The market is the place where the exchange of goods and services takes place. The market is made up of sellers, buyers, products and prices.*

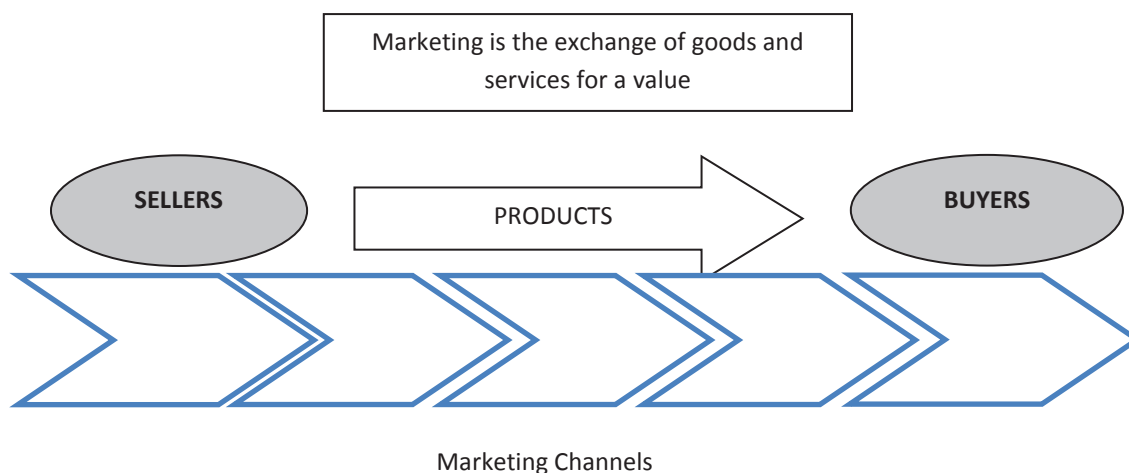
*Marketing is the process of exchange between the producer (farmer) who sells, and the consumer who buys.*

4. Write the key words of this definition on the board using the diagram below. Include simplified seller products buyers diagram here



5. Ask the participants to discuss their experiences in marketing. Use the following questions to guide the discussion:
  - *Who has sold products at the market?*
  - *What products did they sell?*

- *What quantity did they sell?*
  - *How did they take the product to the market?*
  - *How well did this work?*
  - *What was the market like?*
  - *What difficulties did you have?*
  - *What would you do differently?*
6. Organise the participants into small groups of three and ask each group to select a product they are familiar with. Ask them to answer the following questions:
- Who is the final consumer?
  - What are the different ways to market their product?
  - What are the constraints or problems you might experience when selling their product?
7. Explain the following:
- Products may pass through a number of hands to get to the final consumer or user. All the stages, from the farmer to the final consumer, are called **marketing channels**. At each stage, value is added to the product and at each stage a cost also is added to the product. The costs include transport, storage, packaging, and handling fees. If the farmers sell in the local market their profit margin might be high, but they can only sell small amounts. If the product reaches the city market or the international market, then the farmers can sell larger amounts. But such sales would need the support of traders and others along the way. Each of them would add value and cost to the product. Because the costs are higher, the profit margin might be lower.*
8. Ask the participants to copy the diagram below into their exercise books.



9. Conclude the process by saying:
- *A product exists only if someone is willing to pay for it (someone who buys it)*
  - *A product can be sold only if it has a customer*
  - *Marketing is therefore critical to the success of the farm business*

#### **Elements of a farm a business**

- *Money is spent on inputs.*

- *Inputs are used to produce a product.*
- *The product is sold on the market for money.*
- *If the amount of money coming from the market is more than the amount of money spent on inputs, the business makes a profit.*
- *But if the amount of money that coming from the market is less than the money spent on inputs, the business makes a loss.*

#### 4.6 TOPICS: VISITING THE MARKET TO EXAMINE THE POTENTIAL

##### *Objective:*

To give the participants first-hand experience in studying the market

##### *Materials:*

Exercise books

##### *Preparation:*

- At least a day or two before this session, you will need to locate a market near to where the FFS is being held. If it is a periodic market, make sure you know the market day and organize the FFS session on that day.
- You need to visit the market ahead of time to:
  - 1) make sure that there is enough going on for the participants to learn (there needs to be a good variety of products sold at the market)
  - 2) Make sure that there are enough marketing outlets (e.g. retailers, wholesalers, restaurants, shops, etc.) they can explore
  - 3) find out the best day and time to visit the market
  - 4) identify some people that the participants could talk to about the market
  - 5) plan the details of the visit (e.g. retailers, wholesalers, restaurants, shops, etc.)
  - 6) organise transport (if required)
- Also, before this exercise you could gather published market information and talk to people who are knowledgeable about the market to find out about market conditions and opportunities. The information should at least cover the enterprises reviewed in the previous session.
- Prepare the information for sharing with the participants.



#### 4.6.1 Exercise: Preparing for the Market Visit

##### *Preparation:*

- Write the following on the board: *Visit to the market: Key questions*
  - 1) *How do they get to market?*
  - 2) *What kind of packaging is used, if any?*
  - 3) *How is the product handled and who handles it?*
  - 4) *What is the physical condition of the product? Does it change? How? Why?*
  - 5) *Who owns the product being sold? The producer? Someone else? How does this work?*
  - 6) *Who buys the product?*
  - 7) *How are products paid for?*
  - 8) *How is the money handled?*
  - 9) *What happens to products that are not sold?*
  - 10) *Which product is demanded by the market/buyers/traders?*
  - 11) *What is the demand trend of the product (e.g. seasonally, yearly)?*
  - 12) *What volumes can be handled by the market?*

##### *Process:*

1. Organise the participants into small groups of 2 (or 3 if needed).
2. Ask each group to choose 2 products to investigate at the market. Explain that when they get to the market they are to walk about the market to meet and talk to people who are selling and buying and handling the two products.

##### **Guidance:**

*The idea is to ensure that each product is covered by two small groups. This will promote greater learning after visiting the market. It is better if groups share only one product in common.*

3. Ask each participant to open his or her exercise books to a blank page. At the top of the page they should write the name of one of their chosen products. On the same page, ask them to copy the questions on the board on to the page. They should leave 3 or 4 lines between each question.
4. When they have finished, ask them to turn to a new blank page. At the top of that page they should write their other chosen products. Again they should copy the questions into their books.
5. Explain the following: *when you go to the market your mission is to answer all of the questions for each of your chosen products. As you move through the market, observe and ask questions. As you find answers to your questions, write in the space under the appropriate question.*

#### 4.6.2 Visiting the Market

*Process:*

1. Remind the small groups about their tasks.
2. Help them to get started.
3. Check on them as required.

#### 4.6.3 Discussion: After the Market Visit

*Process:*

1. After visiting the market, ask the participants to get into their small groups.
2. Ask them to spend a little time working on the information they gathered to make sure it is as complete as possible. They should also use the information given to them at the start of the session.
3. Choose one of the products and ask each group to share what they have learned about the product.
4. Use the same list of questions used for the visit as a guide to this discussion.
5. Encourage discussion. Encourage those who did not research the product to ask questions and to share ideas. But do not allow disagreements.
6. Briefly summarise what was learned.
7. Choose the next product to discuss. Repeat the process until all the products have been discussed.

**Guidance:**

*Do not spend too much time on little details. The aim is to get a picture of how the market works. This can be a lengthy process, so it may be useful to take a break about halfway through the list of products.*

#### Key points from Topics

- The market is the place where the exchange of goods and services takes place. The market is made up of sellers, buyers, products and prices.
- Marketing is the process of exchange between the producer (farmer) who sells, and the consumer who buys.
- A product can be sold only if it has a customer who is willing to pay for it
- Marketing is therefore critical to the success of the farm business
- When studying the market for a product it is important to ask the following questions:
  - ✓ How does the product get to market?
  - ✓ What kind of packaging is used, if any?
  - ✓ How is the product handled and who handles it?
  - ✓ What is the physical condition of the product? Does this change? How? Why?
  - ✓ Who owns the product being sold? The producer? Someone else? How does this work?
  - ✓ Who buys the product?

- ✓ How are products paid for? How is the money handled?
- ✓ What happens to products that are not sold?
- ✓ Which product is demanded by the market/buyers/traders?
- ✓ What is the demand trend of the product (e.g. seasonally, yearly)?
- ✓ What volumes can be handled by the market?

#### 4.7 TOPICS: VISION AND GOALS

Objective:

Enable the participants to establish a vision for the FFS. A vision can be an ideal of what you want to achieve in the future.

##### 4.7.1 Exercise: FFS Group Vision

Process:

1. Organise the participants into two small groups. If the number of participants is very large, you may want to organise 3 or 4 small groups.
2. On the board write the following guiding questions:  
After one year in the FFS:
  - How do they see themselves studying together?
  - How do they see their understanding of the farm as a business?
  - How do they see themselves marketing products?
  - How do they see their profits changed?
3. Explain the following: *You are now going to develop a group vision. The group vision should state what you hope to achieve by end of the three year of this FFS. A vision is a statement about what the future will look like. For example improved income, improved livelihood conditions, improved market linkages, etc.*
4. Ask the participants to open their exercise books to a place with 2 blank pages. Ask them to write: *Group Vision* on the top. Under that write: *In three year we will build our capacity to.....* Ask participants to brainstorm and discuss the visions as they relate to the above questions. Each group should come up with one vision that summarises the above questions.
5. Ask the small groups to present their visions and share with others. Encourage discussion. Write on the board the different group visions as they are presented by the groups.
6. When all groups have presented, brainstorm on what could be the group vision for the FFS for the three year period. Write the group vision on the board and ask participants to copy the group vision in their exercise books under “Group Vision”.
7. Explain again that this vision is meant to be real and to be put into practice.

### 4.7.2 Exercise: Setting Goals

All farmers have reasons for farming. They have goals they are trying to reach. Goals are an important part of running a successful farm business.

*Objectives:*

- ✓ To understand the importance of setting goals in a farm business
- ✓ To recognise that farm businesses usually address more than a single goal
- ✓ Key question: Where do you want your FFS to go?

*Process:*

1. Explain the following:

*You have developed visions for your FFS. What goals do you need to put in place to realise your visions? A goal is an objective, aim or target you wish to achieve. It is therefore something that you set to achieve in a specified time frame and it is measurable.*

2. Ask the participants to list the different goals that farmers set themselves. Write the answers on the board. Examples of goals could be *making money to achieve a certain living standard, producing enough food to feed the family, producing products that will enable the family to stay healthy, ensuring that family members have enough leisure time to fulfil social obligations, etc.*

3. Organise the participants into small groups of 2 (3 if necessary).

4. On the board write the following: **GOALS**

5. Explain the following:

*We are now going to look at your goals and work in small groups.*

*What do you hope to achieve for your business? Discuss the issues as much as needed. Ask participants to write the answers in the exercise book under "Business". Then exchange roles. The one who answered the first question now asks the other participant the same question.*

6. When they have all finished, ask each group to share what they have written. There should be only limited discussion at this point. Check that they understand the exercise. Give guidance as needed.
7. When everyone is done, ask each group to share some (not all) of what they have written. Discuss the answers. The main aim is to demonstrate that they may have similar goals or they may have different goals.
8. How similar are your goals? If goals are different probably they can be grouped into several groups. Ask them if we can jointly through FFS work to achieve your goals. Can we work in the FFS continuously on discovering of capabilities that will help them achieve your goals? Encourage discussion. Do they believe that the FFS can help them achieve their goals?
9. Promote discussion on the creation of FFS goals.
10. When all groups have presented, brainstorm on what could be the group goals for the FFS. Write the group goals on the board and ask participants to copy the group goals in their exercise books under "Group Goals".



11. Promote discussion that leads to the need of balancing family goals with business goals.

#### 4.9 TOPICS: IDENTIFYING OPPORTUNITIES

You need to devote a lot of time in finding opportunities to be able to perceive the broader context of the situation. The aim of this work is to direct attention to the different directions in order to collect as many opportunities as possible. Without willingness to find new opportunities we remain trapped in the past. If you collect a large number of opportunities, you can always discard them if they do not meet the quality requirements and are not better than the existing ones. But if we don't collect the opportunities, we will not be able to choose.

Objectives: Make a list of everything farmers can do in agriculture to achieve better income/profit.

##### 4.9.1 Exercise: Analysis of Opportunities and Threats

*The purpose of this exercise is to help participants identify the most important opportunities and threats affecting their farms and to decide what action to take.*

*Opportunities in general are opportunities that we observe in the environment*

*Threats dangers (outside the farm) that can harm our farm*

#### **Key questions**

What opportunities to improve your farm?

What are the threats that may harm your farm?

What actions should you take to use the opportunities?

What actions should you take to avoid threats?

Farmer should focus on opportunities and threats by looking outside the farm to take advantage of opportunities and avoid threats.

*Process:*

1. Ask the participants to draw the following grid in their exercise books.

OPPORTUNITIES	THREATS

2. Organise the participants into the same small groups they had for the opportunities and threats exercise. Ask each group to discuss all the points raised. Ask each participant to choose one opportunity and one threat (from any of the points covered) that they feel makes the biggest impact on the profitability of their farm in the future. Ask them to write each one under the correct heading in the first column.
3. Ask the participants to draw the following grid in their exercise books.

	POSSIBLE ACTIONS
<b>OPPORTUNITIES</b>	
<b>THREATS</b>	

For each opportunity and threat chosen, they should consider one possible action they could take to use the opportunity and/or avoid threat.

4. When they have finished ask some of them to share their answers.

#### 4.9.2 Exercise: Alternative Opportunities

##### *Objective:*

To create awareness of opportunities that could increase household income through agricultural activities

##### *Learning Process, Methods and Activities:*

Brainstorming, Group Discussions

##### *Materials required:*

Board, markers or chalk

##### *Time:*

1 h

##### *Process:*

1. Divide participants into small groups
2. Each group should write all alternatives, possibilities and choices available to increase household income through agricultural activities
3. Plenary presentations and discussion
4. After the plenary discussion write on the blackboard three groups of possibilities:
  - ➔ Expand existing activities
  - ➔ Intensify/improve existing activities
  - ➔ Add new enterprises

##### ***Guidance:***

*The participants should focus attention on different approaches for solving problems and not on a specific solution. Focus is on the different ways people can improve household income. Talk to farmers about the importance of choosing the right things for their farm. Explain that it is not enough just to do the right thing, but the need to do it in the right way.*

#### 4.9.3 Exercise: Identification of Opportunity to Add New Enterprises

*Objective:*

Make a list of potential alternatives, possibilities and choices that can generate income

*Learning Process, Methods and Activities:*

Group Discussions

*Materials required:*

Board, markers or chalk

**Guidance:** *Farmers should create a list of new opportunities for income generation activities through farming. You need to think broadly about solutions and analyse what are alternative options for income generation*

*Process:*

1. The group should sit together in a circle.
2. Explain that everyone in the group should consider alternatives, possibilities and choices to add an enterprise to their farm that would increase household income.
3. After they have finished, ask every individual to make their decision. Write each proposal.
4. If individual cannot think of another alternative then he/she misses the turn and the next person can speak, when more than three people in sequence miss their turn, it opens the possibility for anyone in the group to give suggestions. Write on the blackboard all possibilities.
5. Group all proposals according to the type of enterprises for example vegetable production, meat production, and so on.
6. Agree with FFS members to continue to think on this subject and to talk with family members.

New meeting on the same topic:

1. Ask participants which new possibilities were added
2. Amend the list of the last meeting and create an expanded list of options. Write on the blackboard all possibilities.
3. What is the difference between the first and the amended list of options to add new enterprises?
4. Ask participants which proposals were added by men and which by women? Is there a difference?
5. Write on the board the three categories of potential opportunities:
  - High potential opportunities on which all agreed
  - High potential opportunities but not all agreed
  - Opportunities that the irrelevant

6. Ask participants to classify each individual opportunity according to the above categories
7. Discuss with the participants which of the above categories can be profitable.
8. Ask participants based on what they know, which is potentially the most profitable enterprise
9. Ask if they agree to try to calculate and compare the profitability of different enterprises

#### **Questions to help the discussions**

- What may be right for our farm?
- Who are our customers/clients
- What they ask from us?
- How to meet the long-term possibilities, opportunities, (customer needs)?
- How to take advantage of opportunities that are available?
- What are my options now?
- What will our opportunities be in the future (5,10,15 years)?
- Where will I be able to generate income?

#### **Important questions!**

- *For everything new, start with "where can I sell it?"*
- *Why should customers buy from us and not from the competition?*

#### **4.9.4 Exercise: Identification of Opportunities to Intensify/Improve Existing Activities**

##### *Objective:*

To analyse opportunities to intensify/improve existing activities

##### *Materials required:*

Board, markers or chalk

##### *Learning Process, Methods and Activities:*

Group Discussions

##### **Guidance:**

*Based on the previous exercises, farmers had plenty of time to consider existing problems. Now we need to think and focus on opportunities and constraints for carrying out their potential improvements within the existing enterprises.*

##### *Process:*

1. The group should sit together in a circle.
2. Explain that everyone in the group should consider an opportunity to intensify/improve existing activities in terms of increased household income.
3. After ask every individual to make their decision. Write each proposal.

4. If an individual cannot think of another alternative then he/she misses the turn and the next person can speak, when more than three people in sequence miss their turn, it opens the possibility for anyone in the group to give suggestions. Write on the blackboard all possibilities.
5. Group all proposals according to the type of enterprises (e.g. vegetable production, meat production, etc.)
6. Agree with FFS members to continue to think on this subject and to talk with family members.

**New meeting on the same topic:**

1. Ask participants which new opportunities were added.
2. Amend the list from the last meeting and create an expanded list of options. Write on the black board all opportunities.
3. What is the difference between the first and the amended list?
4. Ask participants which proposals were added by men and which by women? Is there a difference?
5. Write on the board the three categories of potential opportunities:
  - High potential opportunities on which all agree
  - High potential opportunities but not all agree
  - Opportunities that the irrelevant
6. Ask participants to classify each individual opportunity according to the above categories.
7. Discuss with the participants which of the above categories can be profitable.
8. Ask participants which is potentially the most profitable enterprise.
9. Ask if they agree, try to calculate and compare the profitability of the different enterprises.

**Questions to help discussions:**

- What are the opportunities for advancement?
- What are the limitations?
- Do we have enough knowledge/experience to manage intensive production?
- Do we have inputs?
- What may be right for our farm?
- Who are our customers/clients
- What they ask from us?
- How to meet the long-term possibilities, opportunities, (customer needs)?

#### 4.9.5 Exercise: Identification of Opportunity to Expand Existing Activities

*Objective:*

Analyse opportunities to expand existing activities

*Materials required:*

Board, markers or chalk

*Learning Process, Methods and Activities:*

Group Discussions

**Guidance:** Based on the previous exercises, farmers have probably come to the conclusion that one of the possibilities to increase income is to expand their existing activities. During this exercise they need to focus on the possibilities and limitations associated with existing activities to expand existing activities.

*Process:*

1. The group should sit together in a circle.
2. Explain that everyone in the group should consider opportunities to expand existing activities in order to increase household income.
3. After completed, ask every individual to make their decision. Write each proposal.
5. Ask participants to classify each individual opportunity.
6. Discuss with the participants which of the above proposals can be most profitable.
7. If they agree, to try to calculate and compare the profitability of investments, especially when higher investments are required (fertilizers, plant protection, etc.) per unit area (higher yields) and increasing the area with less investment (lower yields per area). What is more profitable? Do you have records with which they could explain this? Which is the most profitable option?
8. Explain that the ultimate goal is to combine production efficiencies with low cost of production. Highest production is NOT always the most profitable!

**Guidance:** Explain that this issue will be study in the study plots in the FFS, but encourage farmers to expand production if they have opportunities to increase income. During the FFS they will receive information to better manage crops.

**Questions to help discussions:**

- Do we have enough land for expansion?
- Do you have enough manpower?
- Do you have enough capital to invest?
- Is your production capacity profitable enough to justify the expansion?
- Is it better to invest more in improving existing production?
- Do you have a market for increased amount of product?

#### 4.9.6 Exercise: Calculating the Profitability of Different Enterprises

##### **Background**

Farmers should study the problems limiting farm performance (finding what is wrong) and opportunities to improve performance (finding what more can be done).

The goal is for the farmer to create an idea/perception about the possibilities of new income generation enterprises. For existing enterprises it is possible to calculate the profitability based on previous results. The farmer needs to calculate the potential profitability that could be realized if existing problems are overcome.

However, it is very likely that the new enterprises would also be new for the extension worker. It is therefore necessary to collect information on the new enterprises. Since farmers do not keep records for new enterprises, the extension worker should gather information from other sources such as advisors, researchers, input suppliers, literature, etc.

In case of no records, the extension workers have to use estimates. In using different estimates, imagine the best case scenario or what would happen if all things happen according to your wishes. What if we achieve high yields and good prices? What if we have a good price and low yield and what if we have a low price and low yield. What if we have adverse weather conditions, and what if everything goes right? This can help farmers to focus on the potential opportunities and risks of launching a new enterprise.

The goal of this exercise is to calculate the profitability of the opportunities to add new enterprises, opportunities to intensify/improve existing activities and opportunities to expand existing activities,

Ask for which enterprises they want to calculate the potential profitability and choose the most interesting. For this exercise, it will take more meetings depending on the number of enterprises they want to calculate profitability.

The explanation how to calculate the profitability is given in the session “Understanding Enterprise Profitability” and exercises “Understanding Profit and Understanding Enterprise Budgets”.

After an assessment of profitability, ask the teams to look at all the information they have on the enterprises. They should consider at least the following questions:

- *Which of the enterprises will help me the most in achieving my goals?*
- *Which of the enterprises make the most profit?*
- *Which of the enterprises make the least profit?*
- *Which of the enterprises are the most practical to do?*
- *Which of the enterprises are the most risky?*
- *What are the advantages and disadvantages of each of the enterprises?*

When they have considered all of these questions, ask each team to present what they have learned. They do not have to present their enterprise choices yet. Encourage discussion. What are the main advantages and disadvantages of each enterprise?

**Guidance:** *Based on the earlier exercises, the participant should gain a broader insight of the potential benefits and risks of launching a new enterprise. This should help them in prioritizing opportunities and problems to be tested in the FFS. Participants must focus on*

*the earnings potential if properly utilize this opportunity or overcome constraints they will achieve a profit.*

#### **4.10 TOPICS: PRIORITIZATION OF PROBLEMS AND OPPORTUNITIES**

##### **Background**

In the previous exercises, the participants observed and discussed crop production practices, identified resources, crop and production problems and determined the causes of these problems. In addition, they have discussed the possibility of starting new enterprises to generate more income.

The exercises should provide enough information to choose topics (problem or opportunities) to be tested in the FFS. It is recommended to choose one problem and one opportunity and the new enterprise should have the greatest potential for income generating activities.

In order to identify what the participants see as their most relevant problems/opportunities and to decide what they would like to learn more about during the FFS modules, the identified problems/opportunities need to be summarized and prioritized according to the farmer's assessment.

Make a list of all problems and possibilities identified in the previous exercises. Problem prioritization can be undertaken as a group exercise through "individual voting" or "pair wise ranking". The former allows a large number of problems to be ranked whereas the latter is better where the number of problems or opportunities, is not more than 4 or 5.

Individual Voting: the facilitator or one of the participants writes the list of identified problems/opportunities, (by major categories). The group then reviews the list and, if needed, add more problems/opportunities.

A matrix needs to be prepared with the problems listed on the left of the matrix. Each of the participants then goes individually to the chart to record their priority rating assigned to each problem (1 low priority, 2, 3, 4, 5 high priority). The scores are to be added and the problems to be ranked accordingly. At this point the group reviews the results of the exercise to ensure that there is a consensus agreement on the final priority listing. They then discuss with the facilitator whether the problems represent the topics they would like to investigate further during the FFS. The same exercise could be undertaken with predominantly illiterate participants by using a symbol to characterize a particular problem, preparing the matrix on the ground, and having each participant place a number of stones or seeds, corresponding to their priority rating, against the problem.

Pair wise ranking: the prioritization of problems takes place in a structured way, which compares problems one with another. The same process used for individual voting is to be followed to arrive at the list of problems for prioritization. However when preparing the matrix the problems are written across the top and down the left of the matrix. To get the group's preferences the participants are asked to compare the problems or opportunities one with another. The first problem or opportunities on the left side of the matrix is to be compared with all the problems or opportunities listed across the top. A simple raising of hands can assess the participants ranking. The process is to be repeated until all problems get covered. The number of times each problem is assessed as being the most important is to be noted, summarized and ranked accordingly. Again there should be a discussion to



achieve a consensus that these are the priority problems/opportunities to be addressed by the FFS.

The following questions could be used to facilitate a group discussion on problem prioritisation:

- Are all the problems/opportunities, identified during the previous exercises, listed?
- Are there any problems/opportunities on the list that are closely related to each other or may even be considered the same?
- Are there problems that can be considered as specific for a certain area or group of farmers (e.g. irrigation, specific soil type, or farming system)?
- Which is the most serious problem?
- Which opportunity is most likely to be successful on the market?
- What would the consequences of such decisions be in the next year, short-term (between 1-5 years) and medium term (5 and 20 years) and long term (over 20 years)?
- Did they take all the aspects into account?
- Do you have the resources needed (labour, capital, time, technical know-how)?
- If you don't have the resources, can you find them?
- Talk about the potential risks and opportunities available.
- What specific criteria are used to arrive at a priority ranking for each problem/opportunities?
- Is there agreement on the final problem prioritization list?

#### **4.10.1 Exercise: Ranking Problems/Opportunities**

In the previous exercises you identified the major problems and opportunities related to income generation. This exercise will help in prioritising problems/opportunities and identifying the most relevant problems/opportunities for the group.

For this exercise, facilitator's guidance is recommended. The prioritization process is the same for problems and opportunities. You first have to separate problems and opportunities.

##### *Learning objectives*

- Prioritize problems and opportunities through ranking.

##### *Materials:*

- large sheets of paper
- pens

*Time: 2 hours*

During the FFS sessions, farmers identify problems and opportunities related to income generating activities. The exercise follows several previous exercises (targeting the problem; where is the problem? Problem/solution analysis chart; Alternative opportunities, Identification of opportunities in adding new enterprises; Intensify/improve existing activities.

**Steps:**

1. Write on a large sheet of paper all the problems identified through previous exercises. If you can think of any additional problems, these should be added to the list.
2. Prepare a matrix on another sheet of paper, by writing all the problems across the top and down on the left part of the matrix.
3. The problems should now be compared with one another through pair-wise ranking. The first problem listed on the left should be compared with all the problems listed on the top. Continue until all problems have been prioritised.
4. Count the number of times each problem was assessed as being the most important.
5. Make a summary of the preferences and rank them according to priority on a new sheet of paper.
6. Repeat the entire process and make the prioritization of opportunities.

If there are any uncertainties, within the group or sub-group, about the main causes, a ranking procedure may be used in which each participant “scores” (i.e. assigns a value or a number out of a total of 20) to each of the causes according to his/her perception of the relative importance of that cause.

**Some suggested questions for processing discussion**

- Are there any problems missing on the list?
- Does the priority list correspond to what the group would like to learn and experiment?
- On what basis did you decide on the ranking of the problems?
- On what basis did you decide on the ranking of opportunities?
- Are there problems on the list which are very closely related to one another?
- Do you agree with the final prioritization problem list?
- Do you agree with the final opportunities list?
- Are all the problems/opportunities listed, relevant to everybody in the group, or are different problems relevant to different farmers?

**4.11.2 Exercise: Identification of Possible Solutions/Opportunities to be tested in the FFS**

**Guidance:** In the previous exercises, farming problems and opportunities were identified and prioritized. Now possible solutions to these problems need to be identified. In this exercise the group will determine what practices are currently being used and what are the benefits and requirements of such practices. Since new practices and technologies unknown to the group might be available, a facilitator with special knowledge of the topic is very useful during the process. Farmers should also be able, by combining the knowledge acquired through training and local knowledge, to identify new practices to be tested in FFS. For any possible solution, a simple assessment of the resources needed and available (labour, cash, materials), should be carried out. This will make it possible to determine if the practice is suitable for local conditions.

*Learning objectives:* Identify possible solution that can be studied and tested in a study plot.

*Timing:* During FFS sessions in which farmers' Identification of possible solutions to be tested.

*Preparation:* exercise problem analysis and solution , problem prioritization

*Time:* 2 hours

*Materials*

- large sheets of paper
- pens

*Steps:*

1. Make a table on a large sheet of paper with the following columns, and list as many answers as you can think of in each category:
  - Main problems or opportunities (identified earlier)
  - Physical conditions of the area (water, soil type, climate etc.)
  - Inputs/material available (cash, labour, pesticide, manure etc.)
2. Discuss one problem at a time, and try to identify a possible solution by considering the local conditions and inputs/materials available. Go through each problem until you have a list of possible technologies to test.

*Example:*

Main problem/ opportunities	Physical conditions	Inputs/material available	Possible solutions
Never produced for the market	Small area of land available	There are inputs which can be used to organize modern and highly intensive production	Organization for the market
Hard to protect from pests	Pests in the field	There are chemicals that can be used for eradication of pests. There is an extension service, if necessary	Make and apply plant protection
There is a local market for potato	There is available soil, water	Fertilizer, seeds, pesticides can be obtained	Arrange potato production for local market

3. Look at your list of possible solutions and discuss following questions:
  - Have all main problems and possible solutions/opportunities been included?
  - Are these solutions realistic in the present farmers' situation?
  - **Which of these possible solutions/opportunities would you like to test in the field?**
  - What is needed to implement these solutions?

*Guidance: the recommendation is to choose at least one experiment from the group of problems to be solved in the framework or to intensify/improve existing activities. Use at least one experiment from the group of opportunities to add new enterprises.*

#### 4.11 TOPICS: EXPERIMENTATION IN FFS

##### **Background**

Experimentation in FFS through study fields is usually carried out with the aim of determining the comparative effects of certain actions. Experiments do not necessarily have to be complicated, risky or require formal education, and can be carried out by farmers themselves.

The main basis for experimentation in FFS is to create a learning process through which farmers, through their group sessions, test, and monitor and evaluate new ideas, technologies or innovations for improving productivity. It is a follow-up process to the problem diagnosis and finding opportunities stage in an FFS process, but with the main objective of addressing the constraints and opportunities of selected farmers.

The actors in the experimentation process include FFS members, facilitators and researchers who have complimentary roles in the experimentation process. If the facilitator not familiar with the topic, they should call the extension specialties in the district. If they are not informed about the problem or opportunities, extension or researchers from other districts should be called.

##### ***Complementary contributions in FFS experimentation by farmers and FFS facilitators***

<b><i>Farmers</i></b>	<b><i>FFS facilitators (Extension staff or researcher)</i></b>
<ul style="list-style-type: none"> <li>• Know the priorities of their problems</li> <li>• Know the local situation</li> <li>• Can assess their own possibilities and capabilities</li> <li>• Have good observational powers</li> <li>• Know local diversity of farmers and farming contexts</li> <li>• Are sources of ideas to solutions</li> <li>• Can assess the feasibility of various options</li> <li>• Are inquisitive observers and experimenters</li> </ul>	<ul style="list-style-type: none"> <li>• Can identify technical constraints that are less obvious to farmers (researchers act as back stoppers)</li> <li>• Have knowledge of outside history and wide ranging research experiences</li> <li>• Have formal analytical tools and methods</li> <li>• Have knowledge of outside diversity of farming contexts, systems and management practices</li> </ul>

##### ***Planning Comparative Experiments***

Experimentation usually involves a range of steps from planning, design, implementation to evaluation. Good planning is the basis for systematic experimentation. The experimental plan includes the following steps:

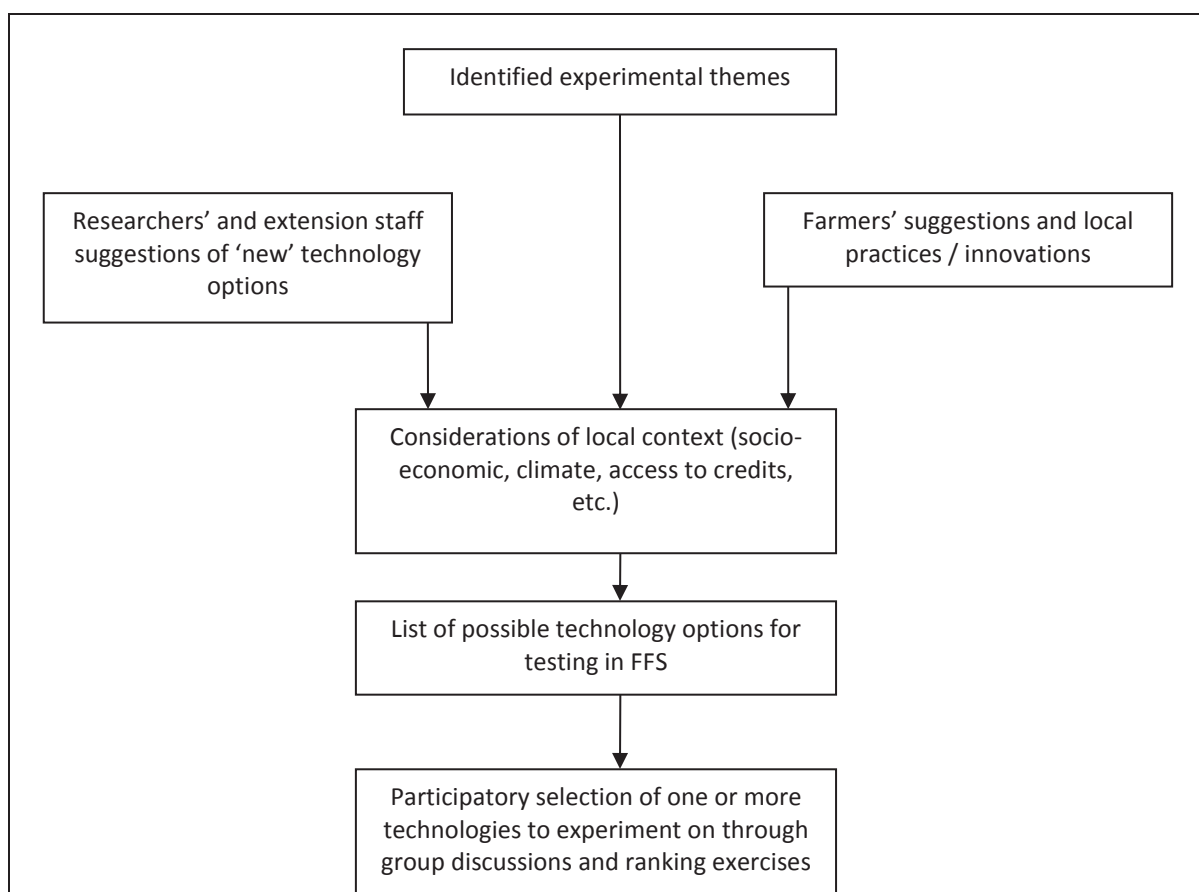
- ➔ Define the objective of the experiment, which should be linked to the previously identified local priority problem.
- ➔ List the different treatments/options. This should include a mixture of farmer generated ideas and “new” options (e.g. practices introduced by research/extension staff).

- ➔ The treatments should be kept as simple as possible by having only one factor under study. If the experiment has too many variables it will be very difficult to evaluate which one is responsible for the results. Similarly, if the treatments are very similar it will not be possible to see any difference.
- ➔ There are two ways of ensuring that various treatments can be compared with each other: i) aim for uniform situation/factors (e.g. soil type, breed and age of cow); and ii) replicate the treatments. The more the replications, the surer one can be that the final results are valid and that correct conclusions can be drawn. However, too many replications make the experimental design complicated and difficult to implement in the field (three are recommended).
- ➔ When deciding where to locate the field trial, do not be influenced by personal bias. Instead, try to locate the treatments randomly. An exercise to facilitate randomisation is to put cards with all the treatments in a bag or a hat and pick the treatments one by one; this will dictate the order of the set up.

Comparative experiments consist of different treatments. Treatments include: control and innovation with different factors. Within one innovation there should be different factors and treatments. Treatments can be various factors (e.g. irrigation and fertilization) or different amounts of one factor (e.g. different amounts of same fertilizer). Every single combination is called treatment.

For instance, innovation with rice varieties could have 2 factors: factor A – varieties, there are two varieties and factor B – fertilization using three quantities of fertilizer. This means that within this innovation there are two factors and 5 treatments. Also, in the same comparative experiment there is a control with one factor. This means that within this experiment there are total 3 factors and 6 treatments.

***Steps taken to match FFS members, facilitators and researchers technology options for testing***



#### 4.12.1 Exercise: Prioritisation of Technologies through Ranking

**Selection of the Learning Theme:** clear understanding of the problem and opportunity is the basis for setting the learning and experimentation theme. This should be based on identified and prioritised constraints and opportunities.

**Learning Objectives:** an experiment needs to have clear objectives as a basis for learning. The objectives of the farmers' experiment(s) or study field are jointly formulated with all the FFS members, facilitators or/and researchers. The formulation of the objectives can be guided by the following questions:

- What do we want to learn from the experiment?
- Why do we want to experiment with the new technology or practice?

**Selection of Options:** the selection of technologies is done through a process by which farmers, facilitators and researchers propose technologies or practices to test. The expectations from the various proposals are discussed using PRA tools such as group discussion (which may be separated by gender and age to solicit interests of different groups), and pair size ranking for prioritisation. This should lead to consensus on the technologies selected for testing in the FFS. All options considered and selected should be based on priority issues identified during the participatory diagnosis of constraints and opportunities.

A criteria that can be considered in technology or study theme selection, could include:

- The degree of probability that the technology will address the identified constraints;
- Potential benefits in terms of profitability, reduced risks, reduced labour and sensitivity to gender issues;
- Ease of adoption, that is, compatibility with the farming system; and,
- Ease of experimentation with the selected technologies in terms of resource requirements and management.

Ranking is a useful tool to prioritise technologies selected by the group of farmers as potential options to be tested. This exercise shows how to carry out prioritisation of technologies through ranking.

#### *Learning objectives*

- Facilitate a discussion among FFS members on which technology options to test.
- Assist FFS participants to prioritise technologies for experimentation.

*Timing:* Prior to the cropping season and following the participatory diagnosis.

*Time:* 1 hour

#### *Materials*

- Large sheets of paper
- Pens

#### *Steps*

1. Ask all FFS participants to think of technologies or practices relevant to the specific theme selected for the study and write all identified technologies on a large sheet of paper.
2. Prepare a matrix on another sheet of paper, by writing all the technologies across the top and down the left of the matrix.
3. To determine the priority, compare the technologies one with another through pair-wise ranking. Each technology cannot be compared with itself, so those squares in the matrix will be blanked out.
4. The first technology listed on the left should be compared with all the technologies listed at the top. Continue the list until all technologies have been prioritised.
5. Count the number of times each technology was assessed as being most important.
6. Make a summary of the preferences and rank them according to priority.
7. Visit the place where the study plot will be organized to make a design of the study plots.

#### **Some suggested questions for processing discussion**

- Does the priority list correspond to what the group members would like to experiment?
- On what basis did you decide on the ranking of the technologies?
- Do you agree with the final prioritisation list of the technologies?

#### 4.12 TOPICS: DEVELOPING THE LEARNING PROGRAMME

Once the FFS group is established, the facilitator develops a programme (i.e. the curriculum for the FFS, based on the main problems/opportunities identified). In collaboration with the group, the facilitator decides what activities need to be undertaken to further explore the problems or opportunities, test the solutions and identify what kind of outside assistance is needed.

The key activities to facilitate learning in the FFS are the AESA, field comparative experiments and learning topics, where group discussion and short- and medium-term learning exercises are conducted. Field trips or exchange visits with other FFS are also useful methods to enhance learning and participants' motivation. A programme defining the FFS season and outlining dates of meetings and the topics of discussion needs to be drafted on a flip chart and made accessible to all.

If during our work farmers have expressed the need for other topics, arrange with them to do topics as special topics that may be included in the FFS.

##### 4.12.1 Exercise: Developing the Learning Programme

###### **Background**

Whatever the farmers perceive as priority, it must be the subject of a follow-up activity (e.g. field comparative experiment, participatory learning exercise or learning topic).

The learning programme should link activities to objectives and put them in a logical order that works towards addressing priority problems in the field. To ensure that all key topics are dealt with in the FFS cycle, the topics must derive from the participatory planning activities. To assist the development of a learning programme, some logical steps and guidelines are provided below.

Objectives: ensure that the FFS learning programme tackles priority learning topics at the right time in the FFS cycle.

Facilitate the selection of activities/strategies to enhance learning (e.g. AESA, field comparative experiments, special topics, exchange visits, etc.).

###### *Materials*

Flip charts, markers.

*Time:* 2 hours.

###### **Steps**

1. Display the list of priority problems in a seasonal calendar to guide the planning.
2. Each priority problem is discussed following the order of the seasonal calendar. The FFS group, in collaboration with the facilitator, decides what activities need to be undertaken to further explore the problem and test the solutions.
3. Each FFS core activity is discussed and the FFS group decides which is most appropriate for each problem. Sometimes a series of different activities can be planned (e.g. implementation of a field comparative experiment or, consulting the calendar, plan in which sessions livestock topics - topic of the day - and non-livestock topics – special topics) and addressed. Field days, field exchange trips, invitation of farmers/experts, etc. can also be planned.



4. To further develop the learning programme, dates of FFS sessions and the topics to be addressed need to be drafted on a flip chart and made accessible to all. The programme is not fixed but should be regarded as a flexible guideline that tracks the progress of the FFS and enhances learning and participation.
5. Plans should also cover topics such as: when the FFS will start and when the graduation will take place; when sessions will begin and end (morning sessions of around four hours are recommended); which dates (weekly sessions are recommended); and when is each host team on duty.

#### **4.13 TOPICS: MONITORING AND EVALUATION OF COMPARATIVE EXPERIMENTS**

##### ***Background***

In order to determine whether a new technology or practice is better than the existing practices, it is important to monitor and observe differences between the two. Regular observations of the experiment within the FFS can identify the reasons why a certain technology is performing a certain way. Monitoring experiments involves keeping track of changes that take place using selected variables or indicators, and assessing the progress towards achieving the goal of the experiment. Usually monitoring involves data collection. The data is then analysed and indicates progress or constraints during the experimentation process. Before the start of the experiment, a plan should be made on the monitoring of the experiment, and who will be responsible for what.

##### ***Building consensus on indicators***

Indicators are required to monitor progress. Indicators are variables that allow identifying and measuring changes during the experimentation process. The indicators selected for monitoring an experiment depend upon the objective of the experiment. It is important that the whole group is involved in the decisions on which indicators are to be monitored and that all FFS members understand exactly what will be monitored and how. Inputs from extension staff and researchers are often useful in this process.

Indicators proposed by FFS members can be identified by asking the following questions:

- What will demonstrate that the new technology or practice is performing well? (this generates indicators of success);
- What will demonstrate that the new technology or practice is performing poorly? (this generates indicators of failure or potential constraints); and,
- What other factors are likely to influence the outcome of the experiment? (this generates environmental-related indicators such as rainfall, pest and disease attack or weed density).

##### ***Deciding on frequency of monitoring***

A discussion should be initiated on the frequency of making observations in order to agree on a regular and systematic way of monitoring using the agreed indicators. The following questions could in determining the frequency of monitoring:

- How regularly should we make the observations?
- Should observations and measurements be made at given periodic intervals?

Table - Examples of Indicators for Monitoring Crop Experiments in FFS

Parameters	Indicators
Nutrient supply/soil fertility	Crop deficiency symptoms, crop growth/yields, weed density
Water supply to the crop	Soil moisture level, surface crusting or sealing, crop wilting, rooting depth
Crop growth/yield	Crop height, vigour, number of leaves, female flowers, number and size of fruits, cobs, length of panicles, crop yields
Pests and diseases	Incidence of pests and diseases, natural enemies

Table - Examples of Frequency for Monitoring Crop-based Trials

Frequency of monitoring	Indicators
At start of the experiment	Prior land use, soil type, salinity, land area, date of planting, germination rate
Periodically (through AESA)	Nutrient deficiency signs, weeds
Frequently (through AESA)	Rainfall, plant growth, pest and diseases, soil moisture, moisture stress, management practices carried out, labour input
At end of experiment	Plant weight, yield, soil nutritional level, total labour input, cost/benefit analysis

#### 4.13.1 Exercise: Selection of Indicators

In this exercise farmers will identify and produce a list of measurable indicators to be used to monitor on-farm testing and also determine how the data will be kept and presented.

##### *Learning objectives*

- Identify measurable indicators.
- Determine how to collect and present data.

*Timing:* Prior to the cropping season following the participatory diagnosis, so that results can be used to monitor experiments or field studies.

*Time:* 1 hour

##### *Materials*

- Large sheet of paper
- Colour pens

##### *Steps:*

1. In groups of about 3-4 persons, discuss and indicate/write what you think should be measured during the field test (yield, labour requirements, crop health, soil moisture, etc.) Brainstorm in the group and list all ideas.

2. Discuss how the groups want to measure. Write which indicator can be used to measure changes for each measure selected. (e.g. kg of production, height of plant, time spent working in the field, etc.)
3. Select a representative from each group to present the results. Fix the list of measurements and respective indicators on the wall so all can see.
4. Look at the indicators and identify the ones that are most valid, reliable, relevant, specific, cost effective, and timely. This will allow you to identify indicators that are most suitable and easy to measure.
5. Finalise the list of measurements and indicators that will be used during the experiments. One or two indicators for each measurement should be sufficient.
6. Decide on when the first measurement should start, how often it should be done, how records will be kept, and how the information will be shared amongst the group.

**Some suggested questions for discussions**

- Are the indicators selected easy to measure?
- How often should they be measured?
- Which part of the field will be used as a test to compare the effects of the improved practice?

#### 4.14 TOPICS: DEVELOPING A DETAILED BUDGET

##### **Background**

Having defined the activities to be performed in the FFS, the group should establish a detailed budget. Participants will have to investigate what is available locally and at what price. These also include the cost of an external facilitator/researcher invited for a special topic session. Annex 1 illustrates an example of a budget.

Before the formation and selection of the final list to check whether it is realistic to purchase certain inputs.

##### 4.14.1 Example of a Detailed Budget

Requirements	Cost
<b>Field inputs</b>	
Fertiliser (cost per bag)	
Seeds (cost per kg)	
<b>Stationery</b> (give all details)	
Flip charts, felt pens, masking tapes, manila papers, registers, etc.	
<b>General tools</b> used across all activities	
Weigh bands, cow calendar, scale, thermometer, etc.	
<b>Field comparative experiments</b>	
For each experiment separately detail all equipment and materials needed:	
Exp 1:	
Exp 2:	
Exp3:	
<b>Field days</b>	
Minimum one field day. Give date and costs	
<b>Graduation</b>	
Invitation, certificates, transport, food/drinks, T-shirts, stationery, etc.	
<b>Exchange visits</b>	
Transport (if possible this should be financed from members or other funds).	
<b>Facilitation and/or external facilitator/researcher</b>	
Number of FFS sessions and facilitation cost per session. Amounts need to be agreed by farmers and facilitator to cover transport and/or lunch allowance. This cost will vary from one region to another and from one FFS to another depending on the distance between the FFS site and the facilitator's house. Total costs for facilitation should not exceed 50% of the total grant.	
<b>FFS participant contribution and commitment</b>	
This can be in cash (amount per session) or in kind (material, field, animal , etc.)	
<b>Total</b>	
<b>Total requested for grant or loan</b>	

Make a plan of the inputs farmers need to supply and a list of activities to be done before beginning production. Together with farmers, define the optimal time to receive input and define deadlines for purchasing of inputs.

**4.15 TOPICS: IMPLEMENTATION AND ORGANISATION OF EXPERIMENT**

Define the exact place and the exact plan where a comparative experiment will be set. It is important to note that the size of the new experiment and the size of the study plots should be sufficient for farmers to produce sufficient to be able to test the product on the market. Testing only opportunities related to production without testing products on the market usually does not lead to a sustainable adoption of new enterprise. The exact size will depend on each individual enterprise.

When the design of the experiment is clear to all participants, the experiment can be implemented. It is important that every member has a chance to participate in every activity taking place. As the participants carry out the activities they simultaneously build up experimental skills and strengthen their capacity to conduct and monitor their own experiments.

**4.16 TOPICS: DEVELOPING AN ACTION PLAN**

*Objective:* to develop an action plan to implement comparative experiments and to make progress towards fulfilling the FFS visions.

*Learning Process, Methods and Activities:*

Brainstorming, Group Discussions

*Materials required:*

White Board or Black Board, markers or chalk, exercise books

**4.16.1 Exercise: Preparing the Action Plan**

*Process:*

1. Write the following headings on the board:

*Action Plan for my FFS*

Action

Duration

Start date

Responsibility

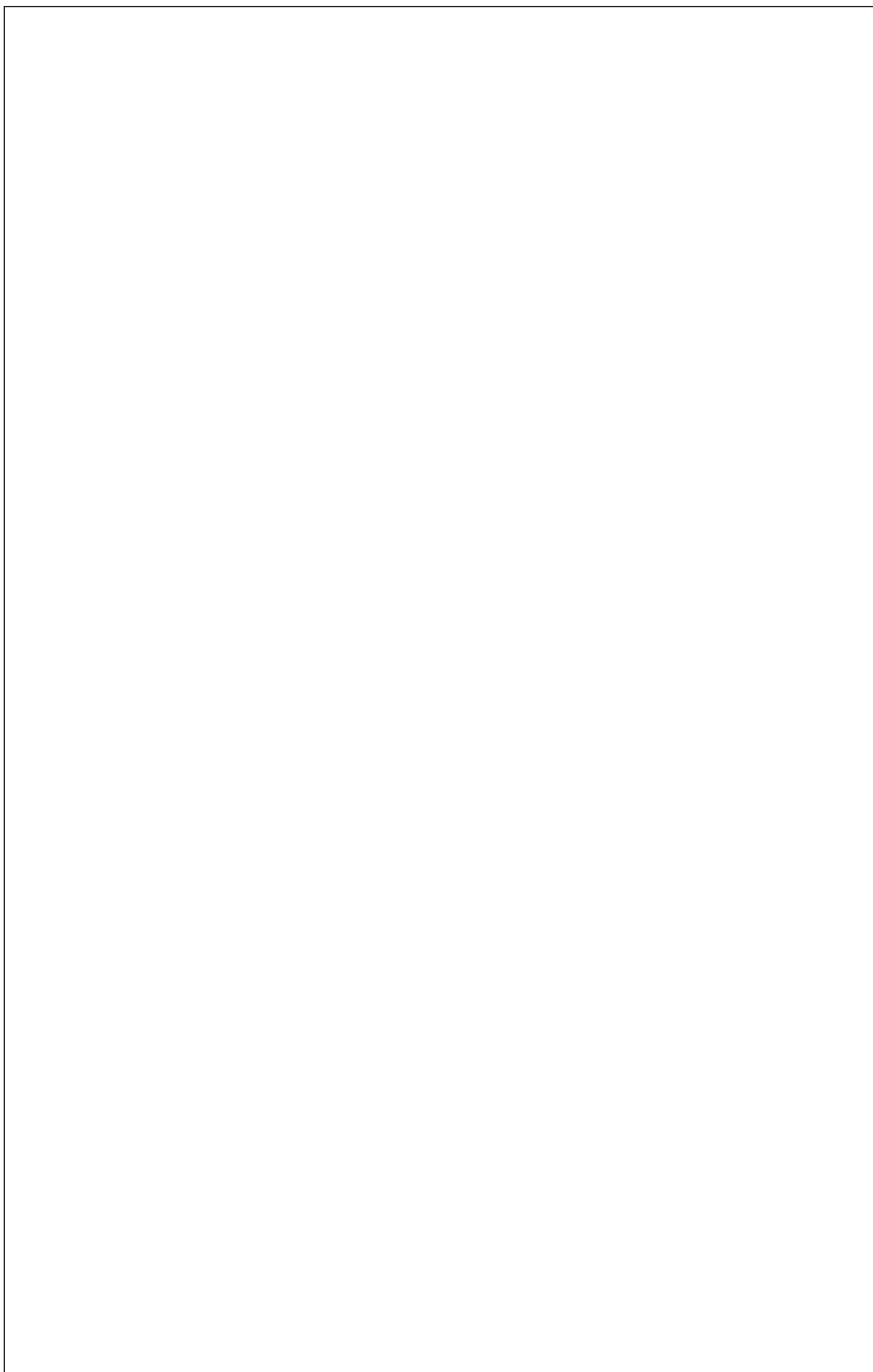
Physical Resources & Inputs

2. Remind them that for each action, they need to identify how long it will take, when it should start and who will be responsible. They should write the decisions under the appropriate heading.
3. When each team has finished, ask each team to share their list of actions. Write these on the board. Encourage discussion. Are the lists similar? If they differ, why? Have any actions been overlooked?

# **MODULE 5**

## **REGULAR FARMER FIELD SCHOOL MEETINGS**





## MODULE 5 – REGULAR FARMER FIELD SCHOOL MEETINGS

This module explains major activities in a regular FFS meeting. The main activities are related to Agro-Ecosystem Analysis (AESAs), Facilitation of Topics of Day, Special Topics and Group Dynamic. Core activities should be carried out during every regular FFS session. Schedule of activities, duration, and responsible person can be changed, but all of the core activities should be carried out during FFS sessions. Further explanations are given for the implementation of activities under FFS.

### 5.1 TYPICAL FFS SESSION

Time	Activity	Objectives	Responsible persons
10 -20 min	Opening Roll call and review of the previous school day	Record attendance and review past activities	Host team
10-20 min	Briefing on the day's activities	Explain which activities will be organized in one day	Facilitator
30 -40min	Field observation-monitoring (AESAs)	Monitor progress of the enterprise by collecting data	All
20 -40 min	Processing of field observations Presentation to plenary and decision making	Analyse and present data to the larger groups for collective decisions and management action	Facilitator and host team
20 – 40 min	Group dynamics	Enhance participation Enhance learning (introduce special topic) Enhance group work, etc.	Facilitator and host team
40 – 90min	Topic of the day or special topic	Introduce technical information Enhance the participants' technical knowledge level; promote discussion and learning	Facilitator
10 -20 min	Review of the day's activities	Evaluate the group's achievements	Facilitator and host team
10 -60 min	Agreements, planning for next session, planning of homework	Prepare any field activities to be done before the next session, setting up of trials and exercises, activities outside of the FFS	Host team
5-10 min	Summary Roll call Announcements Closure	Summary note late-comers and absentees Closure	Host team



## 5.2 ROLL CALL AND REVIEW OF THE PREVIOUS FFS SESSION

The list of members should be kept by the facilitator or secretary. At the beginning of the meeting, the secretary should keep an accurate record of each member's attendance.

Brief recap on what was done in the last meeting. It is very important that they repeat important issues from the previous meeting.

### 5.2.1 Exercise: Review of the Previous FFS

Each FFS meeting should start with a summary of what occurred the previous FFS session. This will bring attention back to the school topics, and refresh memories on what has been discussed, achieved, and agreed.

*Learning outcome:* Participants will refresh their memories of what has been discussed, achieved, and agreed during the previous school meeting.

*Time:*

10-20 minutes

#### *Steps*

1. Ask one participant to summarise what was achieved and discussed during the previous session.
2. Extend and explain the summary when needed.
3. Before the end of the day's session identify the participant who will summarise findings at the next session so that they can prepare notes.

Before moving to the field it is important for participants to know which activities that they are going to undertake both in the field and in the meeting place.

### 5.2.1 Exercise: Briefing on the Day's Activities

#### *Steps*

1. Present the activities planned for the day.
2. Discuss, if relevant, which observations will be conducted in the experiment plots, measurements to be made, monitoring data to be collected.
3. Indicate the special topics the school will focus on.
4. Organise the field visit, if relevant agree on group composition (three or four smaller groups is suggested);
5. Reach a consensus before moving to the field/plots.
6. Wrap-up, summarising the main points discussed.

### 5.3 THE AGRO-ECOSYSTEM ANALYSIS (AESA)

#### Background

The AESA is the corner stone of the FFS approach. It addresses the interactions between components of the ecosystem (e.g. plants, soil, water, and the wider environment) and the functioning or performance of the system. The AESA helps identify strengths, weaknesses, opportunities and threats within the ecosystem (i.e. nutrient depletion, disease, pests, etc.).



The AESA is undertaken with the **aim of improving the decision making process based on field observations**. It also helps in monitoring yields and other impacts. The participants conduct AESA as they visit the study plots/production by observing the ecosystem, including interactions and ecological processes, by sampling, recording, comparison and analysis of information. The decision-making process is based on facts. Thus, AESA is a monitoring tool that should be conducted frequently, regularly and curiously.

Table 5.1 -Examples of frequency of monitoring common indicators in crop-based trials

Frequency of monitoring	Indicators
At start of the experiment/production	Prior land use, soil type, salinity, land area, date of planting, germination rate
Periodically (through AESA)	Nutrient deficiency signs, weeds,
Frequently (through AESA)	Plant growth, pest and diseases, soil moisture, moisture stress, management practices carried out, labour input
At the end of experiment	Yield, soil nutritional level, total labour input, cost/benefit analysis

#### Objectives

- Learn the value of being a good observer become aware of how observation relates to farm management.
- Introduce the concept behind the AESA exercise.
- Improve decision-making skills through analysis of a field situation by observation, analysis, drawing pictures and discussion.
- Improve decision-making skills by presenting small group decisions for discussions in a large group.

Below is a model AESA sheet for plant production. It can be changed depending on the needs, but attention should be paid that all important factors influencing plant/animal behaviour/reaction. Also, in addition to observation and analysis of information for decision-making, actions based on findings should also be included.

Examples: The Agro-Ecosystem Analysis (AESA) sheet

NAME OF FFS: AESA No: Group No: Plot No:	PROBLEM ADRESSED: Date: Time of observation: Name of the host farmer/enterprise:	PLANT DRAWING
GENERAL INFO. Variety: Date planted: Stage of crop:	When was the beginning of the harvest? The amount of harvested product (since the last visit): Amount of total harvested product: Quality of harvested product:	
Background activities during the period from last visit till now		
PLANT OBSERVATIONS: Plant types/associations Length of plant: No of leaves:		
Moisture stress		
Disease observed Types and damage:		
Insect observed: Types and numbers		
Nutrient deficiency or sufficiency signs		
Applied fertilizer		
Irrigation / Soil moisture		
Weeds		
Main mistakes, omissions, problems in previous period		
Other comments and remarks		
Problems which have to be solved urgently		
RECOMMENDATIONS What management practices should be applied?		
Who? , When?		

The purpose of AESA is to **learn how to make regular field observations, analyse problems and opportunities in the field and to improve decision-making skills**. By carrying AESA regularly, farmers develop a mental checklist of indicators to be observed when monitoring production practices.

Some of the main steps in AESA include:

- **Making observations in the field:** the participants, in sub-groups, make observations in the field based on a range of monitoring indicators (see example of AESA sheet). Emphasis is on observing interactions between various factors in the soil-crop-environment. Subgroups of the FFS are organised to undertake the monitoring.

- **Keeping records:** Each sub-group prepares a brief of their findings in a structured recording sheet (AESA) comprising summary data, pictures and drawings of the field situation and decisions and recommendations of the sub-group.
- **Plenary presentation:** Following the discussion in sub-groups a plenary session is held where the sub-groups present their results and conclusions.
- **Plenary discussion:** This “whole group” analysis and discussion of the findings of the monitoring, for example often a weekly session for crop studies, helps the FFS group to make decisions on management actions required to address the situation observed in the field.



### 5.3.1 Exercise: Agro-Ecological System Analysis

#### *Learning objectives*

- Raise awareness of participants on identifying different components of the agro-ecosystem and its importance.
- Assist participants in collecting and analyzing the relevant field data.
- Enhance participants' ability to make proper production management decisions.

#### *Preparation*

In order to ensure that the AESA is done in a smooth way, you will need to discuss and prepare an AESA sheet with the group in a session prior to this exercise.

*Timing:* At every FFS session during the cropping season

*Time required:* 1 hour

#### *Materials required*

- Study field
- Record sheet
- Writing materials

#### *Steps:*

1. Explain the inter-relationships and linkages between different farm components in relation to the theme of field study/experimentation.
2. Divide FFS members into sub-groups and assign a study field for each group.
3. Facilitate the groups to collect the information required using the AESA record sheet.

4. Ask the participants to record important factors influencing production and to make a list of important observations and recommendations.
5. In each sub-group discuss and review the information gathered and propose appropriate management practices (i.e. if many weeds have been observed, weeding might be proposed as a management suggestion). Summarise the findings in to one sheet that can be used as a monitoring and recording sheet. Drawings should be simple and reflect field conditions/observations.
6. In plenary, allow each sub-group to present their findings. Make sure that the task of presenting rotates between the various members each occasion the exercise is done.
7. In plenary, discuss the group presentation and suggested management options and make decisions through consensus building on what immediate actions need to be taken and by whom.

#### *Issues for discussion*

- What changes can be observed since last sessions AESA monitoring?
- What management implications do the observations imply?

*NOTE: it is possible that participants enough experience in production and do not find AESA useful. In this case, the facilitator should take part and guide members in making observations and in making specific recommendations/decisions to be considered by the farmers. The facilitator could also help the farmer in implementing immediate actions such as sowing, irrigation, mulching, or treating a pest and disease.*

## **5.4 FACILITATION OF TOPICS OF DAY**

### ***Background***

It is increasingly recognised that adult learning is best achieved through a 'learning by doing' approach, where new knowledge is acquired through hands-on experience. However, basic information is usually needed before any learning activity can be implemented to help people understand what they have to do and to avoid risk. For example, if the input supplier offers different preparations for rice protection, the farmers will need basic information to help them choose the right chemicals for their environment.

The topic of the day is usually about production processes and post-harvest operations which are foreseen by the plan and program. Special topics are topics chosen by the participants; special topics can also be not related to production.

The "topic of the day" is used to introduce technical information. The objectives are to:

- enhance the participants' technical knowledge;
- provide an opportunity for the facilitator, researcher or specialist to give theoretical inputs needed for a general understanding of the subject before any activities can be carried out;
- ensure a demand-driven learning process;

Participatory approaches can be used to facilitate the topics of day or special topics:

1. Focus group discussions where sub-groups of FFS participants are asked to answer questions followed by a plenary discussion;

2. Participatory learning exercises, which can include simple demonstrations, to introduce technical topics and lead the group in discussing their experiences.

Some of the exercises on delivery of learning topics are provided in Module 9.

*Focus-group Discussion:* A focus-group discussion aims to collect general information, clarify details or gather opinions from a small group of selected people who represent different viewpoints. A group of 4–8 people is ideal. The group is presented with a broad question, for example: “What impact do you think the agro-ecosystem analysis (AESA) has on participant practices?” Let the group discuss this question for the time period agreed upon. The facilitator observes and helps the group to maintain the focus of the discussion. After the discussion has ended, the facilitator notes down the results.

#### **5.4.1 Exercise: Topic of the day - Focus Group Discussions**

##### *Objectives*

- share knowledge and skills for identifying and controlling of rice pests;
- identify knowledge gaps (e.g. they cannot recognize symptoms on plants as result of pest attacks from those as consequence of diseases; no knowledge in differentiation of chemicals for pest eradication from those for disease; cannot recognize which insect attacked the plant and which preparation to use, etc.).

*Materials:* Flip chart, markers, cards and demonstration materials. Plants attacked by major pests.

*Time:* Forty minutes: 10 minutes to discuss and answer questions in sub-groups; 10 minutes per question for each presentation; 20 minutes for feedback and final comments.

##### *Steps:*

1. Prepare one set of questions. For example, if pests on rice pest are the topic of the day:  
How do they look? What are the symptoms on the plant? What are the first sign that pests are present on the plant? What are the ways to eradicate pests? What chemicals can be used? How to identify beneficial pest? When to treat?
2. Form sub-groups of 4–5 people and allocate one question per group. Groups answer their question within the allocated time.
3. Each sub-group presents their discussion/answer to the other groups, perhaps using a flip chart. Comments and feedback with all participants/members follows. The facilitator makes the final comments (wrap-up).

*Guidance:* the identification of knowledge gaps is the initial step and offers the possibility for the facilitator to determine the starting point and what needs to be “filled” during meeting. Through short lessons, the facilitator should give technical information relevant to understand the issue. It is preferable to find plants attacked by some pests. Explain the symptoms of damages, how to recognize the first symptoms and how to solve problems in practice.



### 5.4.2 Facilitation of Special Topics

At the beginning of the training, a number of topics should be selected by the participants. Topics can, but do not have to be related to production. One of the key ingredients in creating a successful curriculum is to get inputs from the farmers. One of the main steps in motivating farmers to work in group is to have them involved in planning their programmes and activities. This helps farmers feel that the group's programme belongs to them.

The facilitator could initiate a special topic by inviting a guest speaker to handle topics (e.g. health, group cohesion, micro-credit, gender, innovations, participants' opportunities and challenges, etc.). This gives participants the chance to learn about anything they feel is important to their livelihood.

If the facilitator lacks the specific expertise, he/she can invite external scientists, specialists or other participants to lead the discussion. The role of the facilitator is to target a specific topic at the most relevant time for FFS participants.

## 5.5 GROUP DYNAMIC

Building social skills and sharing practical and social responsibilities is an important step in forming a FFS. Willingness to work in groups, sharing experiences and gradually adding responsibilities to FFS members can increase self-confidence.

Group dynamic exercises create a pleasant learning environment, facilitate learning and create space to reflect. They also enhance communication, problem solving and leadership skills. The games and exercises are lively and convey messages. They also break the ice, improve participation and bring fun. Furthermore, people tend to remember the exercises and thus the message. Each exercise can serve multiple purposes.

When applying group dynamics, the facilitator should keep in mind the following:

- be clear about what you want to achieve with the exercise
- be aware of the appropriate moment, e.g. do an exercise to energise people when they are feeling tired, or to tackle a possible conflict
- plan and prepare the exercises and always add a 'head' and a 'tail' (introduction and analysis)
- exercises should be adapted to local and cultural conditions
- vary the type and use of the exercises – do not only do exercises that energize
- treat group dynamic exercises as a toolbox – do not become trapped in a fixed formula.

Remember that each FFS is unique and exercises should be modified for each specific FFS. Group dynamic exercise can be carried out before the topic of the day, but also between two sessions/theme units within the topic of the day.

*Objectives*

To provide examples of group dynamic exercises to energise participants, enhance participation, strengthen a learning topic, strengthen group work and cohesion, solve conflicts.

The facilitator should act as a mentor to the groups, by showing respect and interest. The facilitators should let the groups make their own decisions and mistakes and allow for feedback from other groups. The facilitators should guide the groups, not to organise them. The groups should have their own leaders, but the facilitators should always remember to communicate freely with all members, not just the group leaders. Communicating only through group leaders may cause unnecessary tension within and outside the groups.

Some simple rules to enhance group coherence and knowledge-sharing can include:

- Simple energisers, for example songs, dances, stories or games. Remember it is fun if everyone laughs, but not if some laugh at the mistakes of others.
- Always seat face to face in a circle on chairs or on the floor. Do not use tables, as they may create invisible barriers.
- Let one person talk at a time and look at the person talking.
- Do not interrupt others talking.
- Always applaud persons, who stand up and share freely.

## **5.6 REVIEW OF THE DAY'S ACTIVITIES**

The use of feedback exercises and summaries helps the facilitator and participants know how the information was delivered, how the exercises were carried out and how the FFS is progressing. Future plans for the FFS can be adjusted based on participants' feedback. Daily feedback strengthens FFS design and increases feelings of ownership.

### **5.5.1 Exercise: Daily feedback: Word Remembered**

*Learning outcome:*

- Participants able to provide accurate feedback on a FFS session or day;
- Participants showing evidence of reflecting on the feedback given.

*Materials:*

cards, markers, pencils

*Time:* 20 minutes

*Steps:*

1. Explain the learning outcomes and the procedure of this exercise to the participants.
2. Ask participants to write down words which, for example, best describe what they have learned today, or represent the FFS experience today.
3. Promote discussion by asking questions about these words, for example:
  - Why did you choose these words?
  - Can you say more about the words you have chosen?
4. Keep records of the words and comments for possible future use.

### **5.6.2 Exercise: Daily feedback - Feedback Cards**



*Materials:* cards, markers, pencils, pins, tape

*Steps:*

1. Explain the learning outcomes and the procedure of this exercise to the participants and distribute note cards (two colours);
3. Ask participants to write a brief answer to each of the following questions on one of the coloured cards: *what was the most helpful today* (followed by *why*)? or; *what was most useful, interesting* (followed by *why*)?
4. Ask participants to write a brief answer to the following questions on a second coloured card: *what was least helpful or less useful*? This question should be followed by *what could have been improved*?
5. Collect cards.
6. Summarise the responses before the next meeting. Count the number of responses related to each aspects of the day; inform the participants which aspects were of great interest.
7. Discuss the feedback with the participants.

### **5.6.3 Exercise: Daily Feedback: Likes and Dislikes - Statements**

*Materials:* none

*Steps*

1. Explain the learning outcomes and the procedure of this exercise to the participants.
2. There are two parts to this exercise. Arrange participants in a circle or hollow U, so that all have eye contact with each other. In turn each participant completes the sentence:  
*"I didn't like it when ..... because....."*  
 This may refer to anything that happened during the session or day. Each person may choose to say nothing or complete the sentence as many times as necessary. No one should make any judgement on what others say.
3. After everybody has answered this question, the procedure is repeated for what they appreciated. This time complete the sentence:  
*"I liked it when..... because....."*
4. Keep records of the answers and comments and discuss with the participants.

## **5.7 PLANNING FOR THE NEXT SESSION**

Activities and exercises should be prepared earlier. It is important to have some exercises prepared in advance so that participants could later see the desired changes. All other preparations related to study plots also need to be made earlier; the precise time depends on the period of the year (seasonal cycle) and when the training is organised.

## 5.8 SUMMARY AND CLOSURE

Each FFS meeting ends with a summary of what has occurred during the day. This will help participants to recall and remember what has been discussed, achieved and agreed.

### 5.8.1 Exercise: Summary and closure

*Learning outcome:* the participants will recall what they have discussed, achieved, and agreed.

*Steps:*

1. Summarise the topics discussed and the main findings. Remind participants of the assignment given for the week (if any).
2. Remind a selected participant that at the beginning of the next FFS session they will summarise the topics discussed and the main findings of the last session.
3. At the end of each session, the group should prepare the School Meeting Checklist and analyse what was done well and what needs to be improved.
4. Close the session reminding participants of the next FFS date.

## 5.9 FIELD DAYS

### **Background**

Field days provide an opportunity for non-participants to be exposed to the FFS sessions and to show the skills and knowledge gained in the process. In addition, they provide the FFS members with an opportunity to display and share their experiences (e.g. results of experimentation and learning activities, including group dynamics). Field days reinforce the FFS cohesion and raise awareness among the community, the government and other organisations operating in the area, creating support and new demand for FFS.

*Objectives:* provide FFS participants the opportunity to share experiences.  
Exchange experiences with other farmers, extension workers, government officials and other visitors  
Create awareness for the FFS approach in the region.

*Materials:*

Flip charts, paper, markers, masking tape, pins, and camera.

*Time:* preparation time - one full session.

Field day - one full morning.

*Steps:*

1. In an FFS session, the facilitator explains the objectives of the field day. First of all, the group needs to agree on the date and identify the venue. The venue needs to be accessible, show the FFS field comparative experiments and should be able to host many people.
2. Then the group decides what activities in the FFS they would like to display and share. Important topics include an introduction the FFS core activities and field comparative

experiments. The group needs to select at least two accessible locations (or the results of experiments if the trial has already ended).

3. One or two FFS participants take the responsibility of presenting the topic to the visitors. In addition the group needs to select a master of ceremonies, a secretary (responsible for invitations and registration, guides, catering, logistics and stationery).
4. The FFS group needs to draft a letter to invite visitors and a poster to publicise the event. The group needs to compile a list of people they want to invite e.g. community members, neighbouring communities, government staff, other FFS, companies, development organisations in the area, etc. Guest(s) of honour are identified and invited accordingly.
5. The field day expenditures are part of the FFS budget. The group needs to make a detailed overview of the field day's expenditures and make a plan for purchasing.
6. The group develops a programme and ensure smooth implementation.
7. The group should prepare an evaluation of the field day by inviting the visitors to express their opinions. A box can be placed at the exit and departing visitors are invited to write their comments on cards and place them in the box.

#### **5.10 EXCHANGE VISITS**

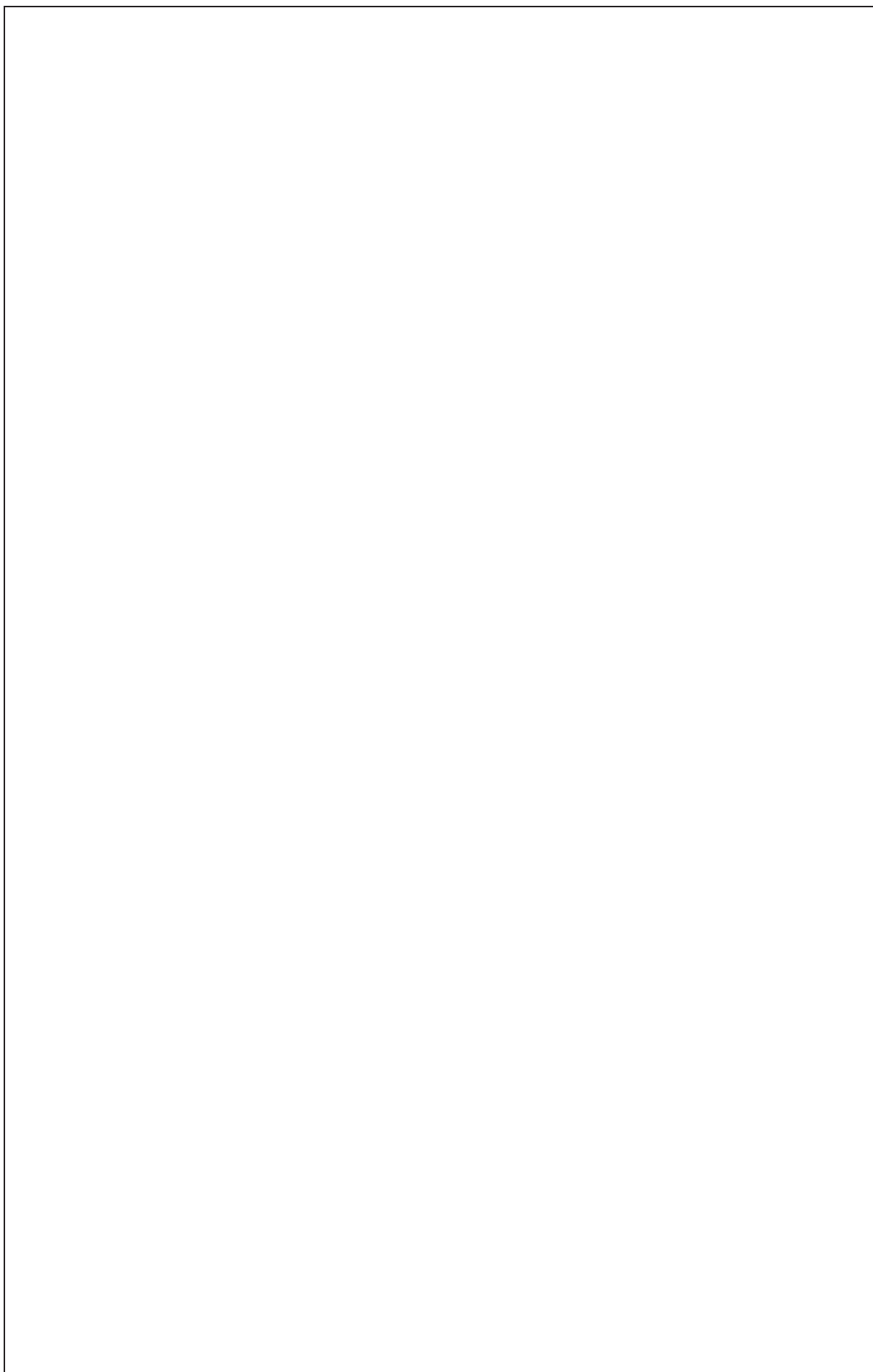
Exchange visits are educational tours to another FFS, agricultural institutions or innovative farmer. They encourage FFS members to compare the activities of different groups and to exchange tested technologies and unique innovations.

There are a number of demo fields in Sierra Leone that could be used as learning sites. Organize exchange visits whenever there are significant opportunities for farmers to exchange information. Special attention should be directed to new enterprises. It is very important to organize exchange visits to the best producers (rice, cassava, vegetable production, etc.). Differences observed in other study plots can be good basis for discovery-based learning.

# MODULE 6

## KEEPING RECORDS





## MODULE 6 – KEEPING RECORDS

### 6.1 TOPICS: KEEPING RECORDS

#### **Objectives:**

- ✓ Appreciate and understand the importance of keeping farm records
- ✓ To know which records to keep and how to keep them
- ✓ Understand the use of records

#### **Why record keeping?**

Many people do not write how much money comes in and how much goes out of their business. Most of the time is because they do not know how to do it and/or do not know how it can help their business. Many times, people do not really know how much money they are earning or losing.

**Recordkeeping is the process of writing all the money coming into the business and all the money going out of the business.** It is important because nobody can keep everything in their head.

#### **The advantages of regular recording keeping are:**

- ✓ you will know how much money you have received, how much money you have spent and how you have spent it;
- ✓ you will know how the amount of inputs and materials used to grow the enterprise;
- ✓ you will know the price of produce sold and cost of inputs;
- ✓ you can calculate whether you are making a profit or a loss;
- ✓ you can keep records of buying and selling on credit, so that people cannot cheat you;
- ✓ you will be able to make better decisions on what to buy and sell;

#### **Why are records important in decision making?**

- ✓ to measure performance of the various enterprises;
- ✓ to compare performance between enterprises and farms;
- ✓ to evaluate the financial position of the farm;
- ✓ to assess/compare alternative strategies;
- ✓ to monitor the use of resources.

**ALL THIS WILL HELP YOU TO IMPROVE YOUR BUSINESS, AND TO INCREASE YOUR PROFIT!**

**6.1.1 Exercise: Group Discussion***Process:*

1. Ask the participants the following question: if you meet a maize farmer who says that he/she had a good harvest last season, what information would you like to have? What are the two most important questions that you would wish to ask?
2. Give each person time to think about the question and write down the answer.
3. Proceed to ask each person individually what their key questions are.

***Guidance:***

*You should be looking for answers referring to the profit the farmer earns. What is your yield? What is your income? What are your costs?*

4. Name the participant with the closest right answer and point out the inadequacy of other answers to the participants.

**6.1.2 Exercise: Role-play***Process:*

1. Ask your two volunteers to perform the role play.
2. Pick a participant who will be the husband coming back from the market (Momodu) and another one who will be the wife (Hawa).
3. Explain to them the following role play: Momodu was coming back from the market where he sold the corn well and earned 1.200.000 Le. He spent all the money he had earned, because he paid the debt, bought new inputs for the production and bought something for the house. When he came home, the wife Hawa asked for money to buy something for herself. Momodu explained that there was no money because he had spent everything. After that Hawa says that she will no longer do work on the field and that she is really angry with her spouse.
4. When the play is done, process the role play by asking the following lead questions:
  - What happened in the role play?  
Answer: Hawa and Momodu got into a fight over money because she did not believe Momodu about how he used the 1.200.000 Le from the sale of their maize.
  - Why did Hawa not believe her husband used all the money properly?  
Answer: To her mind there was a lot of money. It could not have been used up so quickly
  - What could have been done to avoid the confusion on how the money was spent?  
Answer: Keep records

### 6.1.3 Examples of Farm Records

There are different ways of keeping records. The facilitator can assist the FFS and individual farmers in developing their own record formats depending on the type of information required. Even in cases where participants have minimal or no formal education, the group and individual farmers should be encouraged to keep records in form of farm sketches, plans or other illustrations. Some examples are presented below.

Facilitator's notes

- ✓ Some members of the group will be illiterate, and the facilitator must make efforts to ensure they are being effectively involved in the exercise. Suggestions should be made on how illiterate members can also keep records through simple pictorial and numeric representations and how they can access and be encouraged to attend literacy classes.
- ✓ Record keeping may become a gender sensitive issue, for example, depending on the degree of control of products marketed or of income generated by male members of the farm-household. Tools for raising and addressing gender issues and for gender sensitization among the FFS and wider community should be sought.

### 6.1.4 Exercise: Material and Input Record

During organization of FFS, it is of crucial necessity that the participants keep records related to the material and inputs used in the experimentation and results of production on study plots - production records.

*Process:*

1. Write the following headings on the board:

Example format of crop material input record

Application date	Type of input	Unit	Quantity	Price per unit	Value

2. Ask the participants to open their exercise books to a blank page and to copy these headings onto that page.
3. Explain the following: the entries above provide information on material input record. This record helps to understand what you have used in your production/experiments and costs for it. Based on this and on the results of the production, you can calculate the cost benefit analysis of your experiment.
4. Ask the participants to discuss the production records and fill in the table as shown in example below:



Application date	Type of input	Unit	Quantity	Price per unit	Value
2. 05. 2013	Fertilizer	Kg	100	0,8	80
15. 05. 2013	Pesticide- Ridomil	Kg	1	22	22
Total			102		

5. Make sure the participants understand the nature of the records.

### 6.1.5 Exercise: Crop Production Record

*Process:*

1. Write the following headings on the board:

Date	Plot no.	Crop	Output type	Unit	Sold			Consumed	Given away
					Q.ty	Price/unit	Value	Q.ty	Q.ty

2. Ask the participants to open their exercise books to a blank page and to copy these headings onto that page.

3. Ask the participants to discuss the production records and fill in the table as shown in example below:

Table 6.1.6 - Example of Crop Production Record

Date	Plot no.	Crop	Output type	Unit	Sold			Consumed	Given away
					Qty	Price /unit	Value	Qty	Qty
15/04/13	1	Cucumber	Fresh Cucumber	Kg	15	2	30	3	2
20/04/13	1	Tomato	Fresh Tomato	Kg	20	1,8	36	5	2
22/04/13	4	Rice	Grain	kg	-	-	-	3	2

Previous exercises show basic, simple, as well as minimally and necessarily required record keeping in the scope of FFS activities. Advanced and more detailed way for record keeping follows.

### 6.1.6 Exercise: Records and Recordkeeping

#### Process:

1. On the board write: *Records and Recordkeeping*
2. Ask participants: what is a record? Write the responses on the board and explain the following:  
*A record is written proof of what happened or what is happening or anticipated to happen. A record can also be a written proof of what was said and who said it.*  
*Some examples are: minutes of a meeting, a report on the group members who worked in the group farm, names of members who have paid the membership contribution, etc. In a farm business it is important that all records are written.*
3. Discuss with the participants their experience of using records. Brainstorm on why some businesses or farms do not keep records (e.g. farmers do not know the importance of records, farmers do not know how to prepare them, is too complex, not enough time available).
4. Discuss the importance of keeping records. What is the purpose of records? How do records help the farmer? What can happen if records are not kept?

#### Guidance:

*They may make one or more of the points below. Build on their answers, giving examples and cases.*

- ✓ *To know if the business is making a profit or loss.*
  - ✓ *To provide basic information for planning future enterprises.*
  - ✓ *Record keeping helps members in the FFS to remember or keep track of what happened (e.g. date of spraying, cost of inputs, etc.)*
  - ✓ *It provides information and data for periodic reporting, monitoring and evaluation.*
  - ✓ *Without records a supplier could over-charge or deliver less than ordered and paid for.*
  - ✓ *Without records it is difficult to remember the price of each product each time you went to the market.*
5. Ask the participants to list the types of records they are familiar with. Write on the board.  
 Lead the discussions into production, income and expense records and cash book. If they do not come up in the discussions, then introduce them yourself.
  6. Write on the board: Types of Records.
  7. Ask the participants to open their FFS exercise books to a blank page and copy this heading onto the page.
  8. Introduce and explain the different types of common farm records. Explain that there are basically two types of records: physical and financial
  9. Explain that as at the beginning, the most useful records for the FFS are:
    - ➔ Production record
    - ➔ Cash Inflow record
    - ➔ Cash Outflow record

- ➔ Family Consumption record
- ➔ Summary Enterprise Profitability Sheet
- ➔ Fixed Costs record

10. Ask the participants to take out their new exercise books and write on the cover: My Farm Records.

11. Explain the following :

*We will now look at these records. Together they will help you make a profit and loss statement for your farm or enterprise.*

### 6.1.7 Exercises: Production Records

*Process:*

Write the following headings on the board:

Enterprise	Land size	Expected yield/ha or unit	Total yield (tons/kg/bags)

E.g. Layers Production

Enterprise	Number of birds	Expected number of eggs per bird/production cycle	Total number of eggs to be produced

1. Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings onto that page.
2. Explain the following: the entries here provide information on production output. This record helps understanding production efficiency and also for benchmarking purposes. This production record is necessary in assessing our farm business plans.
3. Ask the participants to discuss in groups the production records and fill in the table as shown in the example below:

Enterprise	Land size	Expected yield/ha or unit	Total yield (tons/kg/bags)
Maize	2 ha	3000kg/ha	6000kgs

Make sure the participants understand the nature of the record. For livestock discuss as much as you can so that all outputs and included.

**6.1.8 Exercise: Labour Records**

Write on the board

Date	Activity	Number of people working	Number of hours taken	Total number of hours taken

1. Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings onto that page.
2. Explain the following:  
*The column on number of people indicates the actual number of people who worked on that particular activity for a particular day. The next column indicates the actual hours spent doing the particular activity. The total number of hours is calculated by multiplying the number of people and the number of hours spent per each activity. There is need to record the entries as soon as the activity is done otherwise it will difficult to remember the number of hours taken to complete the activity.*
3. Write as much as you can on the board and make sure the participants understand the nature of the record. Let the participants know that it is important to keep labour records.

Date	Activity (Maize enterprise, 1 ha)	Nr of people working	Nr of hours taken	Total nr of hours taken
10 October 13	Land preparation	2 people	2 hours	4 hours
20 November 13	planting	1 person	6 hours	6 hours
21 November 13	Planting	2 people	5 hours	10 hours

**6.1.9 Exercise: Cash Inflow Record**

Date	Sales/ Output	Unit	Quantity	Unit Price	Total Income (\$)	Comments

1. Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings onto that page.
2. Explain the following:  
*Entries here provide information on the activities that brings money particularly from the sales of the products of the enterprise. The first column gives the date of the produce sold. The type of product is given in the second column. The unit of measurement of what is sold is entered in the third column (no., kg, litre, bag etc.) and the quantity required is entered in the next column. The unit price (the price the buyer*

*paid for one unit of produce) is recorded in the fourth column. The price is multiplied by the quantity sold to arrive at the total income. Because money is always coming in, it is regarded as cash inflow. The amount of money coming in will depend on the level of productivity, the market prices, and scale of the enterprise in question. The last column is given to enter comments observed when marketing the produce that could affect the performance of the enterprise. For example, it could include a note that produce may have been sold at farm gate or alternatively in urban markets. The record should be updated regularly as and when sales occur. All the columns need to be completed at harvest time after the produce is sold and money is received. At the end of the production cycle the farmer should total all the cash inflows.*

- Write as much of the following example on the board to make sure the participants understand the nature of the record. Let the participants know that it is important to give details of the sales/output.

#### 6.1.10 Exercise: Cash Inflow Record

Date	Sales/ Output	Unit	Quantity	Unit Price	Total Income (\$)	Comments
12/04/13	Sold vegetables	bags	2	\$5	10	
15/04/13	Sold eggs	trays	10	\$3	30	
20/04/13	Sold eggs	trays	15	\$3	45	
22/04/13	Sold eggs	trays	12	\$3	36	
25/04/13	Sold eggs	trays	18	\$2	36	
Total					147	

#### 6.1.11 Exercise: Cash Outflow Record

*Process:*

- Write the following headings on the board:

##### Cash Outflow Record

Date	Operation/ Input	Unit	Quantity	Unit Cost	Total Cost (\$)	Comments

- Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings onto that page.
- Explain the following:

*This record is detailed. It provides information on the all the important activities that require the farmer to spend money either to buy inputs or pay for services and operations. The date the activity is done is indicated in the first column. The unit of measurement of the activity and the quantity are entered in the next two columns. The cost of the unit of input, or services or operation is recorded in the fourth column. The*

*cost is multiplied by the quantity used to get the total cost recorded in the Total Cost column. Because money is always going out or being spent it is regarded as cash outflow. The last column is provided for any comments the farmer observed that may affect the performance of the enterprise. All of the columns need to be completed every time an activity is carried out on the enterprise. At the end of the production cycle, the farmer should total all the money spent and regarded as cash outflow.*

- Write as much of the following example on the board to make sure the participants understand the nature of the record. Let the participants know it is important to give details of the sales/output.

#### Cash Outflow Record

Date	Operation/ Input	Unit	Q.ty	Unit Cost	Total Cost (\$)	Comments
1/2/13	Ploughed maize and vegetable garden	Ha	1	70	70	
18/2/13	Second ploughing	Ha	1	70	70	
25/2/13	Constructed chicken housing	Rooms	2	35	70	
5/03/13	Purchased chicks	chicks	100	0.9	90	
5/03/13	Purchased maize Hybrid 614	kg	20	2	42	
5/03/13	Purchased fertilizer	bags	2	22	44	
6/03/13	Planted maize and vegetables	Person days	8	10	80	
20/03/13	Weeded garden	Person days	1	17	17	
03/04/13	Bull died	unit	1	200	200	
08/04/13	2 <sup>nd</sup> weeding	person days	1	17	17	
15/05/13	Harvested maize	bags	50	8	400	
Total					1100	

#### 6.1.12 Exercise: Home Consumption Records

*Process:*

- Write the following headings on the board:

#### Home Consumption Record

Date	Consumed Items	Unit	Quantity	Unit Price	Total Value (\$)	Comments

- Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings onto that page.
- Explain the following:

*The entries in this format record produce that have been stored, consumed, or given as gifts to relatives, friends and family members. The first column includes the date that produce is consumed or stored. The second column shows the type of produce. The unit of measurement of what is consumed and the quantity consumed are given in the next*

two columns. The market price for one unit of produce is recorded in the fourth column. The market price is multiplied by the quantity consumed or given out to get the total value of produce consumed or lost. The last column is provided for comments on the amount of produce consumed or given as gifts. The record should be updated regularly as and when activities happen.

All of the columns need to be completed any time any part of the produce from the enterprise is consumed or given out as gifts. At the end of the production cycle, the farmer should total the value of this produce as part of the money realised from the enterprise. A member of the farm household should be encouraged to keep these records.

- Write as much of the following example on the board to make sure the participants understand the nature of the record. Let the participants know that it is important to give details of the sales/ output.

### Consumption Record

Date	Consumed items	Unit	Quantity	Unit price	Total Value (\$)	Comments
1/2/13						
18/2/13						
25/2/13						
5/03/13						
5/03/13						
5/03/13						
Total						

- Tell the participants that once the season starts, they should start using the consumption record. From time to time you will ask them to bring in their records to see how it is going.

### 6.1.13 Exercise: Profit and Loss Records

*Process:*

- Organise the participants into groups of 3-5. Assign to each group an enterprise (e.g. rice maize, vegetables, broilers). It is okay if there is more than one group working on the same enterprise.
- Explain the following: *the three records we have just looked at can be used to make a profit and loss statement for each enterprise.*
- Write the following headings on the board:

#### Crop Budget:

Inputs/ Operations	Unit	Quantity	Unit Price/ cost	Total Income (\$)	Total Costs

4. Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings onto that page.
5. Ask each group to go through the cash inflow, cash outflow and consumption records for their assigned enterprise and calculate the profit (or loss). They should write this down in their exercise books using an enterprise budget format.
6. Explain the following:

*This sheet is used to arrange the records provided by the farmer into different categories: field operations, inputs and materials, labour, post production and value of sales. The items included in the cash outflow and cash inflow formats are entered under inputs/operations (Column 2) and placed under the appropriate major heading.*

*The unit of measurement and the quantity used are provided in columns 3 and 4. The unit cost or price is given for each item and recorded in column 5. The per unit price or cost item are multiplied by the quantity to arrive at the total income and total cost, recorded in columns 6 and 7 respectively. The extension workers or lead farmers may need to assist and guide the farmers in completing the record sheet.*

Measuring my \_\_\_\_\_ enterprise profit for the period \_\_\_\_\_

Area/ size of the enterprise \_\_\_\_\_

Categ.	Inputs/ Operations	Unit	Quantity	Unit Price	Total Income (\$)	Total Costs (\$)
1.	Field operations:					
2.	Inputs and materials:					
3.	Labour:					
4.	Post production:					
	<b>Total Costs (a)</b>					
5.	Value of Sales:					
6.	Value of consumption:					
	<b>Total Income (b)</b>					
	<b>Profit (b-a)</b>					



7. Ask each group to share their results. Do one enterprise at a time. Did each group arrive at the same answer? If not, why? Which enterprises are profitable? Which enterprises are not profitable? Why?
8. Ask if there are any questions about this. Encourage discussion.

#### 6.1.14 Exercise: Fixed Cost Record

*Process:*

1. Write the following headings on the board:

##### **Fixed Cost Record**

Date	Item	Purchase price	Life (years)	Comments
------	------	----------------	--------------	----------

2. Ask the participants to open their Farm Record exercise books to a blank page and to copy these headings on to that page.
3. Explain the following:  
*This record is very detailed as it provides information on the important items of fixed costs related to the selected enterprise. Each item includes the date, purchase price (cost), the life of the item. The life of the item varies. The life of housing/buildings can be taken as 40 years; the life of a tractor and other machinery is 5 years; the life of tools is given at 10 years.*
4. Write as much of the following example on the board as needed to make sure the participants understand the nature of the record. Let the participants know that it is important to give details of fixed cost items.

Date	Item	Purchase price (\$)	Life (years)	Comments
1/2/13	Hand tools	800	10	To be replaced during the 10 <sup>th</sup> year
3/4/13	Sprayer	1000	10	
4/4/1	Irrigation pipes	2000	10	

#### **Key points**

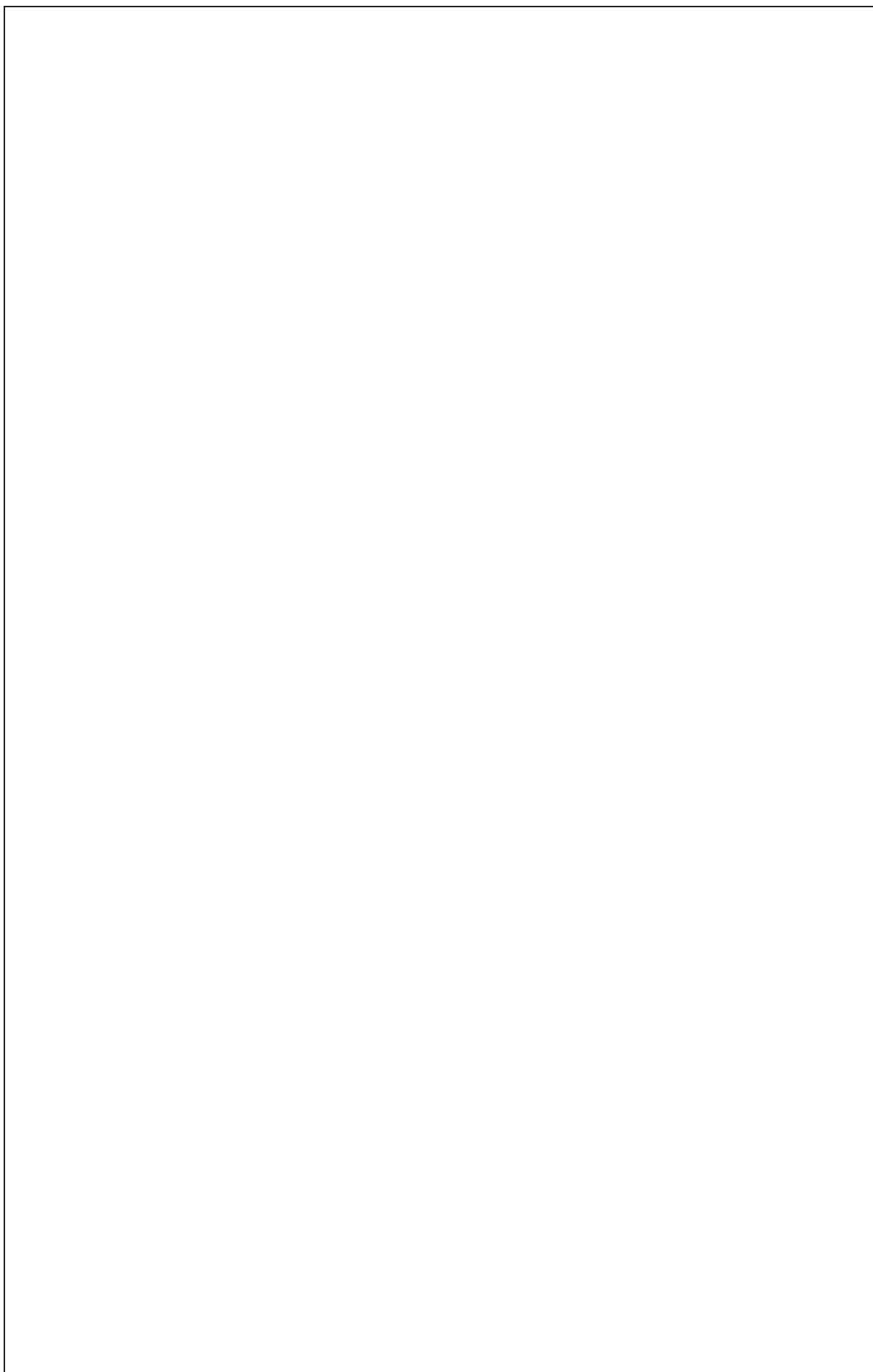
Records are an important part of farm business management because:

- To know if the business is making a profit or loss.
- To provide basic information for planning future enterprises.
- Record keeping helps FFS members remember or keep track of what happened (e.g. the date of spraying, cost of inputs, etc.).

- It provides information and data for periodic reporting, monitoring and evaluation.
- Without records a supplier could over charge you or deliver less than you ordered and paid for.
- Without records it is difficult to remember what price you got for each product each time you went to market.

#### *Completion of the record sheets*

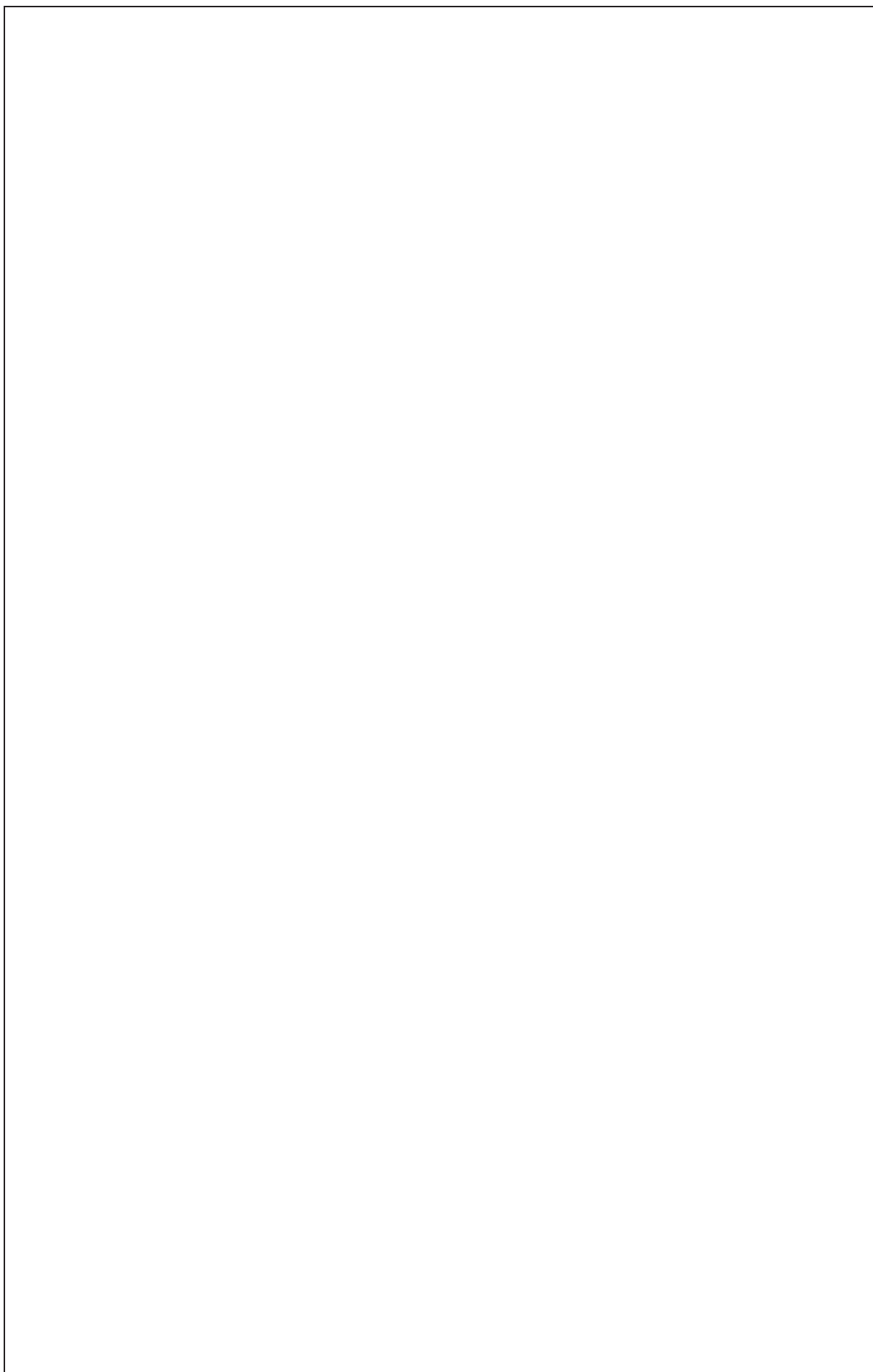
- The record book needs to be completed every time some work or activity is carried out.
- Labour should be recorded as soon as possible after it has been used because it is the type of information that can easily be forgotten. It is advised that somebody else in the household keeps this record.
- If you are not sure how to write down an item of entry ask your children or an extension worker to assist you.
- Involve your wife in keeping the record of home consumption.
- If many activities are carried out in a particular day or at the same time, write each activity separately in a different line, with the date.
- Include a record of unpaid family labour by noting the number of family members that worked on that enterprise and that operation that day; the estimated amount that each would have been paid for the operation; and the amount it costs to feed other members of the community if they work on an activity.
- For hired labour make a note of the number of workers employed on that enterprise and that operation that day; and the amount of money paid to each person.
- Do not forget to record all activities relating to the marketing of your produce. For example, the transport costs to the market and other expenses involved in marketing.



# MODULE 7

## POST HARVESTING CYCLE





## MODULE 7– POST HARVESTING CYCLE

### 7.1 TOPICS: EVALUATION AND ANALYSIS OF RESULTS

It is important to track whether the FFS is achieving its aims and make corrections if necessary. This means monitoring activities in the daily FFS sessions. This will allow participants to:

- ✓ gain an overview of progress and to enhance confidence and motivation;
- ✓ draw lessons learned and stimulate corrective actions, thus improving the quality of the next FFS;
- ✓ get an early warning of problematic activities and processes that will need corrective action.

The main objective of this module is to allow FFS participants to test new technologies and determine their applicability. The different treatments need to be compared using indicators identified by the participants. In this phase of the experiment, all the data collected in the record-keeping format should be analysed. An important tool is the cost–benefit analysis. The resulting analysis can be presented according to different formats.

By using M&E methods, the facilitator can evaluate FFS participants' perceptions and level of adoption of technologies in addition to the knowledge gained from the experiments. Benefits, constraints and barriers to adoption can be identified and discussed in plenary sessions. New experiments or other activities can be designed to solve anticipated problems. Results of experiments should be shared with the community and neighbours during field days and with other resource persons – with a view of improving the overall production and extending lessons and benefits beyond the FFS.

### 7.2 TOPICS: REFLECTING ON EXPERIENCES AND LESSONS LEARNT

#### *Objectives:*

To learn how to capture experiences over the learning cycle and draw ways to make future progress in the farm.

To assess the progress made by farmers at the end of the cropping or livestock cycle, and the need for follow-up assistance and changes in future FFS cycles.

#### *Learning Process, Methods and Activities:*

Group discussion

#### *Materials required:*

White Board or Black Board, markers or chalk  
New exercise book

**Preparation:**

This session starts with the farmers sharing what they have experienced and learned during the FFS learning cycle. In preparation for this, you will need to prepare two lists of questions to guide the discussion. One list should focus on the FFS as a support to the farmers (e.g. what worked? what did not work? how can it be improved?)

The second list should focus on the technical learning from the FFS. The aim is to find out how well the participants could understand and apply the concepts and ideas learned in the FFS.

**7.2.1 Exercise: Reflecting on Progress**

Explain the following

*Evaluation is a process of checking if the activities planned have gone according to plan, verifying if the objectives/goals have been met and finding ways to improve on future plans/activities.*

*Process:*

1. Organise the participants into groups of 3-5.
2. Explain that the purpose of this round of sessions is “Evaluating”. They will spend this meeting evaluating the FFS so far. And they will be evaluating the results from the FFS Plans they developed. The purpose of the evaluation will be to enable them to make another diagnosis of their farms and to develop a FFS Plan for the next season.
3. Ask each group to make a quick assessment of how they feel they have progressed in terms of carrying out their FFS Plans. They should include things that went particularly well and things that did not go well. What was the most difficult part to implement? Why? Do the members of the team have similar experiences? In what way? Were they very different? How and why were they different?
4. Ask each team to share a few stories from their discussions. Have each team tell one story. Encourage discussion then move to the next team. Repeat the process until all teams have shared all their stories or until you see that the stories are beginning to sound the same.

Ask the participants about their future plans. Have they thought about what they want to do next season? What are some of the changes they want to make? What are some of the ideas they have? Encourage discussion.

**7.2.2 Exercise: Assessing Application of the FFS Topics**

*Process:*

1. Reorganise the participants into teams of 3-5 with the same main enterprises on their farms.
2. Use the questions developed. Ask each team to discuss these questions.

3. Starting with your first question, ask each team to share what they learned. Encourage discussion.

Below are suggested questions. Use some or all of these, or make up your own.

#### **Assessing application of the FFS lessons**

- Which FFS topics do you use now and what effect do you think they can have in the farm profit?
- What difficulties have you experienced in applying the methods learnt?
- To what extent have you engaged in commercial farming operations since you started with the FFS?
- How has the FFS influenced your crop and livestock activities?
- By participating in FFS, how do you think you have performed compared with other farmers in the district who did not receive any training?
- If you were to continue with the FFS, what would be the problem or opportunities you would like to include in the training?
- Has the FFS training changed your attitude as a farmer? If yes, by how much and how?
- What will be the overall effect of the FFS on your farm profit?
- What comments have other farmers made about the FFS programme?

#### **7.2.3 Exercise: Assessing the FFS**

*Process:*

1. Reorganise the participants into teams of 3-5 with the same main enterprises.
2. Use the questions developed and ask participants to discuss them.
3. Starting with your first question, ask each team to share what they learned. Encourage discussion.
4. What suggestions do they have to improve the learning programme of the FFS in the next cycle? Write their suggestions on the board. Keep a copy of the key points and suggestions.

Below are some suggested questions. Use some or all of these, or make up your own.

#### **Assessing the FFS**

- How would you rank the training methods in terms of importance to your farming operations?
- Which methods were hardest to understand or apply? Why?
- How did you find the balance between the theoretical and practical parts of the training?
- What follow-up training has been provided to you from outside the FFS?
- What is your opinion of the way the seasonal programme was run? Did it cover issues when you needed them to be covered?
- What suggestions do you have to improve the FFS programme



### 7.3 TOPICS: ASSESSING PERFORMANCE OF FIELD COMPARATIVE EXPERIMENTS

#### *Objective:*

To review and evaluate field comparative experiments

To use farm records to assess performance

To benchmark and evaluate performance

#### *Materials required:*

White Board or Black Board, markers or chalk

New exercise book

Farm Record exercise book (from the season just ended)

FFS Plan exercise book (from the season just ended)

#### *Learning Process, Methods and Activities:*

Group Discussions

#### ***Preparation:***

This session relies on the records the farmers have kept. Therefore, during the production season you will need to have followed-up on the recordkeeping to make sure it is up to date.

#### **7.3.1 Exercise: Evaluation of Farming Practices through Matrix Scoring**

##### ***Guidance***

Following the regular monitoring and at the end of the experimental cycle, evaluation is conducted to seek the answers to two main questions:

- Has the experimental process achieved its objectives?
- Which factors account for the level of performance of the technologies under study?

An example of a tool that can be used to identify farmers' perceptions on technologies is the use of matrix scoring and ranking.

Matrix scoring shows how well options meet redefined criteria. From a monitoring and evaluation perspective, this method can be used to understand people's opinions on, for example, different service providers, on different types of project activities aiming at reducing a problem, on different technologies such as seed varieties, use of fertilizers, etc.

#### *Learning objectives*

- Make comparison between different options of a specific issue or solutions to a problem.
- Prepare a detailed analysis of how people and why they prefer one option above the other.

*Time:* 30 minutes

#### *Materials*

- Newsprint
- Chalk board

#### *Timing*

At the end of an FFS cycle, which could be one or more cropping seasons

#### *Steps:*

1. Be clear about what you are comparing. Place the options/issues in a row, along a horizontal axis. The more there are, the longer the scoring will take; if necessary, prioritise items to be scored.

2. The group discuss the advantages and disadvantages of each item/solution/issue to generate the criteria to be used to compare the options. Each criterion is placed along the vertical axis to create a matrix. If you find that the number of criteria is very large, either ensure you have enough time to finish the discussion or ask the group to prioritise key criteria on which to focus. Ensure that the criteria are all worded in the same way, all either in positive terms or in negative terms. Mixing the two types of criteria will cause confusion in the next stage.
3. Start the scoring. The items are compared for each criterion. Decide how much will be the maximum score. There are different ways to establish the number of points to use for scoring. You can allocate a maximum of points per box – for example, 15 as “the best” – or specify a total number of points to allocate per criterion across the boxes, for instance, 25. Participants can use stones, seeds or numbers for the scoring, with more stones indicating higher scores and therefore better ability to fulfil that criterion. Usually, consensus is reached through discussion. Avoid individual voting in the matrix scoring exercise as it defeats the purpose of stimulating discussion to reach consensus.

**Example: Ranking of soil fertility options**

	Fertilizers (F)	Composting (C)	Green manures (GM)	Animal manures (AM)	Total	Rank
Fertilizers (F)		C	GM	AC	0	3
Composting (C)			C	AM	2	1
Green manures (GM)				AM	1	2
Animal manures (AM)					2	1

The total for each technology, is the number of times that specific technology was the preferred option, i.e. for composting it was preferred over fertilisers and green manures. The rank is the prioritisation where 1 is the preferred technology, in this case both composting and animal manures were equally preferred, followed by green manures and lastly fertilisers.

### 7.3.2 Exercise: Cost–Benefit Analysis

#### **Background**

Many farmers do not record their expenses and therefore do not know how expenditures relate to income. In some cases, they may not realise that they are earning little money or even making a loss. In crop production, expenditures include seed, fertilizer, pesticide, labour etc. In livestock production, expenditures are diverse and include feed, healthcare, artificial insemination (AI) and labour and can be difficult to track. Systematic record keeping of all costs and benefits (e.g. sales of rice, cassava or milk and meat) is crucial to performing cost–benefit analysis. The cost-benefit analysis can help farmers to understand the factors determining income and find ways to improve profits. It is important that record keeping is not imposed on the participants but that they realise the need to keep records.

When analysing comparative experiments, it is important to know, at the end of the season, the costs and benefits of the applied practice. Information is needed to make a decision to accept or reject innovations. In addition, information is very useful in disseminating the results of innovations. The potential benefit is something that can motivate the later adopters to accept innovations.

#### *Objectives*

- To make farmers aware of the importance of keeping records, and
- To train farmers on how to use records to make economic analyses of their enterprises.

#### *Example of Cost –Benefit Analysis*

Date	Items	Cost	Income
		<b>Total</b>	<b>Total</b>
<b>Total income – Total Cost = profit</b>			

For more details, see section Understanding Enterprise Profitability

### **7.3.3 Exercise: Did I Achieve my Goal?**

#### *Process:*

1. Organise the farmers into groups
2. Write the following heading on the board:

#### **My goal**

3. Ask the participant to take out their FFS Plan exercise book and their Records exercise book for the season just ended. They should open to the “Background” section and look for the goal they set for the season.
4. Ask each team to discuss how well each team member has done in achieving the goals set at the beginning of the season. What progress did they make? Did they achieve their goals? Did they do better than they planned? Did they fall short of achieving their goals? For those who achieved their goals, they should discuss what key things contributed to their success. For those who did not achieve their goals, they should identify the things that prevented them from achieving their goals.
5. When they have finished, ask each team to present what they have discussed. Encourage discussions and try to identify key elements that contributed to achieving or not achieving results. Write the key elements on the board under the appropriate heading.

**Guidance:**

*There are likely to be many factors contributing to achieving and/or not achieving the goals. There may be a tendency for farmers say that the factors were beyond their control. It is important for the farmers to take responsibility for their actions.*

*You will need to probe their answers:*

- ✓ *Did they follow their plans?*
- ✓ *If the plan did not work, what were the weak elements? Why were they weak? What should they have done differently?*
- ✓ *What parts of the plans went well? Can they be repeated?*

<b><i>My plan for the next FFS cycle</i></b>	
<b>Things I should do again</b>	<b>Things I should do differently</b>

6. Ask participants to discuss how well their plan worked. Did they achieve the expected results? What problems they had? What worked? What did not work? What should be done differently next time? They should look at every aspect of the plan. Is there anything indicating that it is technically not feasible to produce this product? Soil? Climate? Slope of land? Elevation?
7. Ask each team to present what they have discussed. Identify and write on the board key things that they should do again and things they should do differently. These will be important when they develop their next FFS cycle.
8. Explain that the participants should remember these key points. They will be important when developing the next FFS cycle.

**7.3.5 Exercises: What are we going to commercialize?****Objective:**

To identify what product we are going to repeat, new field test, use on the farm or commercialize

**Learning Process, Methods and Activities:**

Group Discussions

**Materials required:**

White Board or Black Board, markers, card

The goal is, based on previous sessions, to identify:

- a. Activities that FFS members will repeat in the following year in the FFS (e.g. something that was not well done or something they need to repeat a number of times in order to form an opinion on positive innovation).
- b. What will be new to test (and what has proved in the first round to be necessary).
- c. What new technology/technique to start using in the farm (here the farmer has put the technology into use in his or her farm).

- d. What are we going to commercialize from the farm (here the farmer will introduce the technology to produce for the market).

*Process:*

1. Ask farmers to sit in a circle and write on the board:

- a) Repeat
- b) New-examine /investigate further
- c) Use
- d) Commercialization

Each farmer needs to think about what is planned for the future.

- 3. Organize discussions. Every farmer need to express their opinion what must be repeated.
- 4. Write it all down and grouped the answers. Encourage discussion. What topic has the most proposals? Why?
- 5. Write on the board what needs further to be investigated. What have the most suggestions? Why?
- 6. Ask farmers, from all things they have found/learned during the previous FFS, what will they use on their farms?
- 8. Ask those who have no plan to use any innovation, why they will not use it? What are their concerns? What are the constraints and barriers to adoption?
- 9. Discuss about the innovations they plan to use. Ask what are the limitations and barriers. Create an action plan to overcome barriers and become a commercial farmer in the coming years.

## 7.4 TOPICS: FOLLOW-UP ACTION PLAN

### *Objective:*

To develop a follow-up action plan  
To conclude the FFS training and receive certificates

### *Learning Process, Methods and Activities:*

Brainstorming, Practical exercises

### *Materials required:*

White Board or Black Board, markers or chalk, notes, exercise books, pens.

### *Key questions:*

How can farmers implement most efficiently, the second FFS cycle?

How can they effectively impart the knowledge and skills gained to other farmers?

What follow-up assistance is required?

### 7.4.1 Exercise: Follow Up Actions

#### *Process:*

1. Organise the farmers into groups. Ask each team to discuss the kinds of things they will need to do to continue learning in order to improve their farms. Ask them “what solutions for problem or opportunities will be included next year in the study plots”; “will solutions be applied on a larger surface?”
2. Ask them to make a list of all follow-up actions that they will need to take.
3. Each team should discuss these actions to ensure that everyone in the group fully understand them. Encourage teams to identify realistic follow up actions. Encourage them to make plans for individuals and actions they need to undertake together.
4. Ask each team to prepare a brief presentation for the other groups, on what actions they will take. Presentations should be fairly short and the team should select one or two people to do the presenting. Allow for a period of questions and answers at the end of each presentation.

### 7.4.2 Exercise: Preparing an Action Plan

#### *Process:*

1. Keep the participants in the same teams.
2. Ask each team to look at the actions they have agreed and to develop an FFS action plan. The plan should explain when each action will be taken, the expected outcome and who is responsible. Suggest the teams to use a seasonal calendar so the plan can be easily understood. They need to discuss each of the actions in detail to ensure that everyone fully understands the action plan.
3. Ask each team to prepare and deliver a brief presentation. Encourage discussion. Are the plans realistic? Do they involve actions for individuals as well as for the team together? Did they leave anything out?

## **7.5 GRADUATION**

Farmers with a good record of attendance (e.g. 75% of sessions) can graduate for the specific activities completed during the FFS meetings. The graduation is organised by the farmers and the facilitator and involves an official ceremony to which community members, MAFFS officials and neighbouring communities are invited. Participants are awarded a certificate by the supporting agency/programme to recognise their efforts and to celebrate their achievements. At the same time, other community members will be attracted and the event marks the end of an official learning period.

## **7.6 POST-GRADUATION**

### **7.6.1 Follow-up of FFS Activities**

At the end of a learning cycle and after the graduation ceremony, the FFS must continue. With help of the facilitator, the group evaluates the FFS and develops an action plan for the next FFS. New sessions (different topics or more in-depth learning of the specific topics), implementation of commercial plots or enterprises, linkages with researchers, extension workers and other FFS should be planned. In many cases, one of the farmers takes on the role of the facilitator.

### **7.6.2 Establish/Create FFS Networks**

FFS networks should be encouraged. Networking is a sustainable mechanism to support economic activities and the development of existing and new FFS. It initiates commercial ventures in all affiliated FFS, facilitates fundraising and helps to coordinate marketing activities.

### **7.6.3 Set Up Farmer-led FFS**

The FFS facilitator and the farmers identify farmers willing to play the role of facilitator and who have the potential to be trained further. The farmers selected will start by assisting the current facilitator, and will learn the basics. When the farmer is ready, he/she can conduct an FFS on his/her own. The so-called farmer-led FFS is backed up by the current facilitator. The facilitator can oversee many trained farmers, helping to scale up the methodology.

This responsibility should be carefully handed over from the facilitator to the farmer. It usually takes time for the farmer to master technical knowledge. Usually after the first cycle, the farmer begins commercialization of some of the tested innovations; it is very important to provide adequate support during this period.

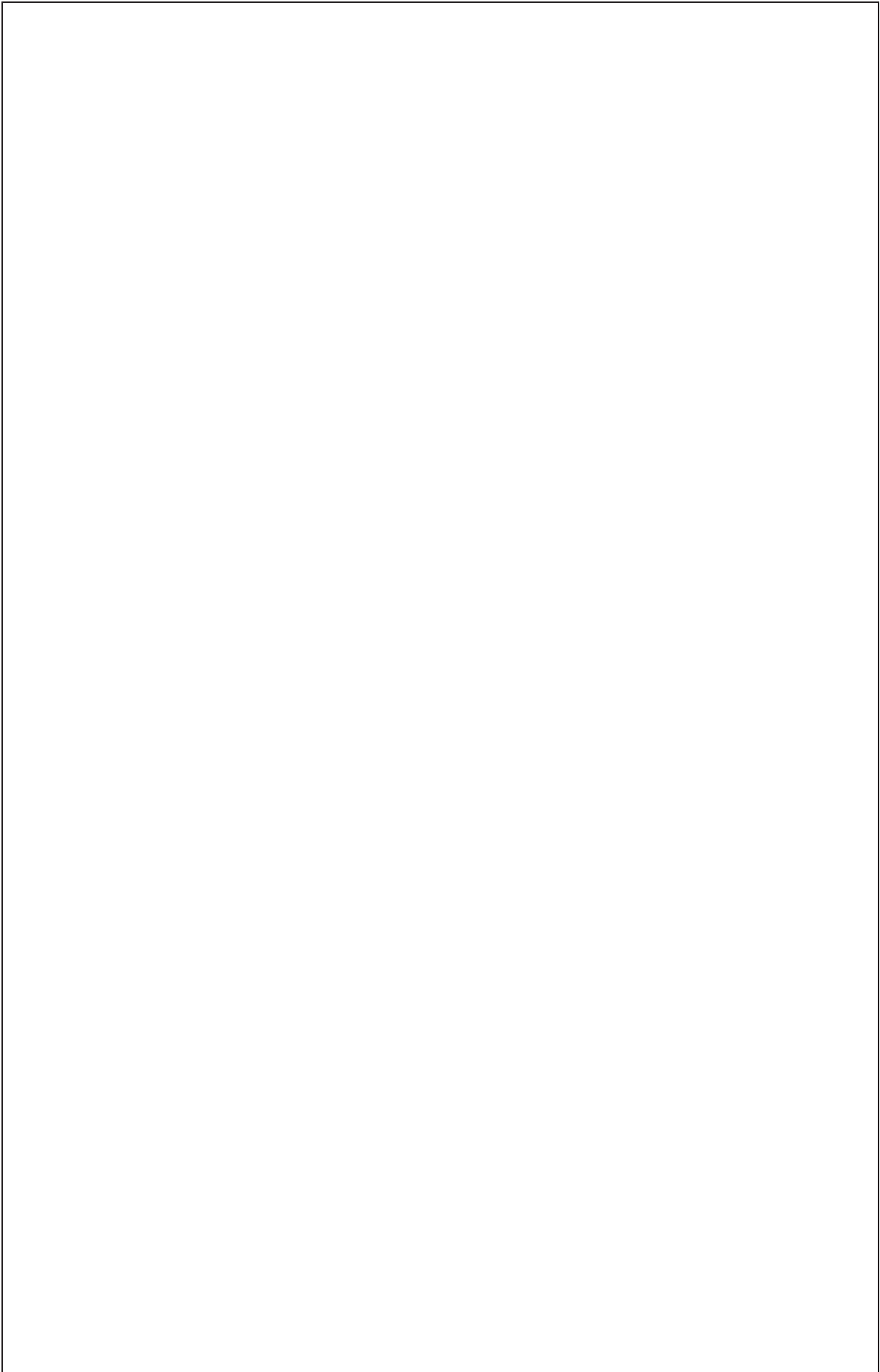


# **MODULE 8**

## **PREPARING A FARM BUSINESS PLAN**







## MODULE 8 – PREPARING A FARM BUSINESS PLAN

### Objectives:

- 4 To understand the critical aspects involved in a business enterprise.
- 5 To understand what needs to be included in a business plan.
- 6 To prepare a business plan for the farm enterprise.

### Materials required:

White Board or Black Board, markers or chalk,  
New exercise book

### Learning Process, Methods and Activities:

Brainstorming, Group Discussions

### Guidance:

- *In this session the farmers will form small groups and work on a common/similar enterprise (or the same enterprise, if the group has a common one).*
- *These exercises are all designed to help participants write a basic business plan for a selected enterprise. At the end of the meeting, the participants will be asked to take the basic farm business plans home and work in preparing a business plan for their farms.*

*Note: Examples and numbers in tables in this module are there to explain the process of calculation, and they do not represent real values. They are given in \$, kilograms or tons and hectares because of the easier and better visibility. Real values for the price on the market and real yields accomplished should be used in reality when calculating. All of these should be given in domestic currency (Le). Depending on the product, measures acre instead of hectare and bushels or bags instead of tons or kilograms can be used*

### 8.1 TOPICS: THE FARM VISION AND GOALS

#### Objectives:

- ✓ To enable farmers in establishing a vision for the farm businesses. A vision can be an ideal of what you want to achieve in the future. It is a picture of your future and what you need to achieve to get there.
- ✓ To understand the importance of farm business goals.
- ✓ To recognise that farm businesses usually address more than a single goal.
- ✓ To understand the balance between family and business goals.

#### 8.1.1 Exercise: Farm Visions

##### Process:

1. Organise the participants into small groups of equal or near equal numbers and explain the following:

*You are now going to develop a personal vision for future. The vision should state what you hope to achieve. This vision should be something to be achieved over five years. Work in small groups and help each other. Explore the possibilities for developing your*

*farm business, by “challenging” your current situation. Ask yourselves how you can improve your life. Where would you like to be in five years’ time?*

2. Ask participants to be in small groups and brainstorm on what could be their personal or individual visions.
3. Ask each group to discuss and to assist each other with their respective vision statements.
4. When all groups have presented, brainstorm on what could be the personal vision for the five year period. Write the personal vision on the board and ask participants to copy the personal vision in their exercise books under “My Vision”.

**Guidance:**

- *This is an abstract exercise. The individuals may struggle with it. But be careful that the participants do not just copy the example vision.*
  - *Because visions are a very personal thing and individual participants may not want to share them with others, you will need to see each vision individually as they are being written.*
5. Select some of the participants willing to share their visions and explain the following:  
*Your visions are meant to be real. They are not just a learning exercise for the FFS. They are meant to be used as a reference guide for you to improve your farms.*  
*You are encouraged to share and redevelop your visions with your families. They may suggest some additions or changes. You can report on this at the next meeting.*

### **8.1.2 Exercise: Setting Farm Goals**

*Process:*

1. Explain the following:  
*Goal setting is a necessary first step in managing the farm business. You have developed FFS and individual visions. What goals do you need to put in place to realise your visions. A goal is an objective, aim or target you wish to achieve. It is therefore something that you set to achieve in a specified time frame and it is measurable.*
2. Ask the participants to list the different goals that farmers set themselves. Write the answers down on the board.

**Guidance:**

*Below are a set of typical goals that could be used to prompt participants if they are struggling to identify their own set of goals.*

- *making money to achieve a certain living standard*
  - *producing enough food to feed the family*
  - *producing products to enable the family to stay healthy*
  - *ensuring that family members have enough leisure time to fulfil social obligations*
  - *help the family to achieve financial security*
3. Organise the participants into small groups of 2 or 3 and write the following on the board:

GOALS	Family	Business
<p>4. Explain the following:</p> <p><i>We are now going to look at your goals and work in small groups.</i></p> <p><b>What do you hope to achieve for your family?</b> Discuss the issues as much as needed. Write the answers in the exercise book under “Family”. The one who answered the first question now asks the other participant the same question.</p> <p><i>What do you hope to achieve for your business?</i> Discuss the issues as much as needed. The one answering the question writes his answer in his own exercise book under “Business”. The one who answered the first question now asks the other participant the same question.</p> <p>5. When they have all finished, ask each group to share what they have written. There should be only limited discussion at this point. Check that they understand the exercise. Give guidance as needed. Some groups might have similar goals.</p> <p>6. Promote discussion leading to the need of balancing family and business goals.</p>		
<p><b>8.1.3 Exercise - Session 2: Report Back from Family Discussions</b></p> <p><b><u>Personal/Individual Visions: Report back from family discussions</u></b></p>		
<p><i>Objective:</i></p> <p>To reinforce the understanding of visions and goals</p>		<p><i>Materials required:</i></p> <p>Board, markers or chalk</p>
<p><i>Learning Process, Methods and Activities:</i></p> <p>Brainstorming, Group Discussions</p>		
<p><i>Process:</i></p> <ol style="list-style-type: none"> <li>1. Check that everyone discussed the vision statements with their families. Encourage those who did not discuss it with their families to do so as soon as possible.</li> <li>2. Ask the participants to share stories about their personal/individual visions with their families. Ask first for volunteers. Then choose a few others. They do not all have to report. (Remember, these visions can be very personal) Did anyone make any changes? What changes were made? Why?</li> </ol>		
<p><b>Key points</b></p> <ul style="list-style-type: none"> <li>• Visions are meant to be real. They are not just a learning exercise for the FFS. They are meant to be used as a reference guide for you to improve your individual farms.</li> <li>• Share and redevelop your individual visions with your family when you return home. They may suggest some additions or changes. You can report on this at the next meeting.</li> <li>• All farmers have reasons for farming. They have goals they are trying reach. Goals are an important part of running a successful farm business.</li> </ul>		

## 8.2 TOPICS: VALIDATING THE ENTERPRISE

Organise participants into small groups around a common enterprise.

*Process:*

Explain the following:

*In the last sessions you have identified goals and set visions for your farm business. Now you will need to decide what the best way is to use your farm to achieve your goal.*

*You are already producing a range of products. You have looked at some of the problems you are experiencing in making those products profitable. In the end, you will need to decide what to produce and how to produce it. You may want to change one enterprise to take advantage of a market. You may want to change the way you produce a current enterprise, to make it more profitable.*

*In short, you will need to decide:*

- ➔ *What to produce*
- ➔ *How much to produce*
- ➔ *How to produce*
- ➔ *How to market and what price to charge*

*You will be organised into small groups working on a common enterprise. You will develop a basic farm business plan for the group. The enterprise you choose should be a cash crop or a high-value product. This will help with the learning process.*

**Guidance:**

*This is the first time you are introducing the concept of the farm business plan. Therefore you need to be sure that the enterprises chosen by the participants are known to be technically feasible. The enterprises can be of three forms:*

- *Common enterprises for all participants. This will likely to be the case when the participants are commodity based (e.g. cassava groups, rice groups, cacao group, etc.)*
  - *Group Enterprise: participants are divided into small groups of similar enterprises.*
  - *Individual Enterprise: participants develop their own enterprises and include them in the farm business plan.*
- ✓ If participants have one common enterprise, it shall then be used as reference for the business plan.
  - ✓ If participants have different enterprises, there is a need to group them into small groups of similar enterprises and then they will develop individual plans for individual enterprises.

### 8.3 TOPICS: WRITING THE FARM BUSINESS PLAN

#### **Guidance:**

- *This exercise is written in a very prescriptive manner. The exercise asks the participants to prepare an exercise book with heading on specific pages. This is done to make sure that the final farm business plan book is well ordered and there is enough room for everything.*
- *The aim is to make sure that the participants have a written copy of their farm business plans. You should review this exercise very carefully and decide if you want to do this exercise or not.*
- *If you do not do this exercise, then you will need to ask the participants to enter the headings for each section of the plan as you work on them. You will need to remind them to leave enough space to be able to return to the section later in the FFS.*
- *If you do not do this exercise, you will at least need to write the headings on the board and explain to the participants what they will be working on.*

#### **Process:**

1. Write the following headings on the board:

- MY FARM BUSINESS PLAN
- BACKGROUND
- FARM PRODUCTION PLAN
- TECHNICAL FEASIBILITY
- PHYSICAL RESOURCES AND INPUTS
- LABOUR REQUIREMENTS AND AVAILABILITY
- MARKET PLAN
- PROFITABILITY
- CASH AVAILABILITY
- RISKS
- NOTES

2. Ask the participants to take a new exercise book. On the cover they should write: *My Farm Business Plan (insert a year)*

1

My Business Plan

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3. On next double page they should write: *Background*

2	3
Background	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

4. On the next page they should write: *Farm Production Plan*

## 5. Follow the same procedure for the rest of the labels on the board.

## 6. Explain that this exercise book is now ready to make all the notes they will need to prepare a Farm Business Plan. Introduce the concept of a business plan. Explain the following:

*A farm business plan is a plan that records the most important decisions and actions affecting the operation of the farm. It is a way to make sure that all things are completed on time. And it is a way to make sure that they are done in a way that makes the farm more profitable. A farm business plan can be very simple or very complex. For a start, we will work on a simple plan.*

**8.3.1 Exercise: Background***Process:*

## 1. Ask the participants to open their Farm Business Plan exercise books to “Background”.

## 2. Explain the following:

*In a business plan the background gives a description and the objectives of the farm business. It states the vision and goal of the farm business and help farmers stay focused on what he/she wants to achieve.*

*Each group needs to decide how to approach the preparation of a business plan. It can be a “group” business plan or it can be developed for a specific farm (chosen among the group members). After, everyone will need to develop an individual farm business plan.*

## 3. Ask the small groups to discuss whether they will use a member’s farm or an example farm. Give them about 5 minutes to decide this.

## 4. When time is up, ask each group to share their decision.

## 5. Ask the farmers to write their name, village district, and the duration of the plan. Write an example on the board.

**Example:**

Name: Musa Sankoh      Chieftdom, District:

Period of plan: October      2013      to      September 201

**Guidance:**

- *The dates should be based on the seasonal cycle of the specific enterprise*
6. Ask the participants to take out their FFS exercise books and turn to the section on the visions and goals for their farms. Explain that they should review their goals and agree on a new goal for their enterprise should that be necessary. When they have finished, they should write this in the book. This should include the vision and goal they set in the previous session. Explain that it does not have to be long or very detailed. Just a simple, clear explanation will be good.

*Example:*

This season:

I will increase rice production and sales from 900 to 1500 bushels per acre.

I will increase the number of acres from 4 to 8

I will increase the number of buyers from 3 to 5.

7. When the small groups have finished, ask each of them to share their goals. Encourage discussion.

**8.3.2 Exercise: Farm Production Plan***Process:*

1. Ask the participants to open their Farm Business Plan exercise books to the “Farm Production Plan” Explain the following:

*You will now prepare a farm production plan. Your farm production plan should be based on your goal. If you have chosen a crop, then the farm production plan states what crop you will grow and the number of acres you will plant. If you have chosen a livestock enterprise, then the plan states the kind and number of head of livestock you will have.*

*When you have decided on your production plan, you should write this into your exercise books*

**Farm Production Plan****Crops**

Enterprise	Land size (ha)	Expected yield/ha or unit	Total yield (tons/kg/bags)
Maize	2 ha	3,000kg	6,000kg

**Layers Production**

Enterprise	Number of birds	Expected number of eggs per bird/production cycle	Total number of eggs to be produced
Layers	100	190	19,000

2. Give them 5-10 minutes to work on this. While the small groups are working, move from group to group to listen and help.



- When the time is up, ask each group to share their production plans. Encourage discussion. If there is more than one group with the same enterprise, compare production plans. Are they the same? If not, why not?

### 8.3.3 Exercise: Technical Feasibility

*Process:*

- Write the following headings on the board.

Technical Production Factors	Okay/Not okay
Overall suitability	

- Ask participants to open their Farm Business Plan exercise books to “Technical Feasibility”. Explain the following:

*You are now going to check if it is possible to produce the enterprise. You need to make sure that your land and soil is appropriate and climate, rainfall and the temperature are suitable for your enterprise.*

- Explain that in this exercise, they have chosen enterprises that they know are technically feasible. However, it is still important to think about the factors that determine if it is really possible to produce the product.

Example Technical Production Factors		
Crops		Livestock
Soil		Climate
Climate (rainfall, temperature)		Grazing/Vegetation
Topography		Water availability
Water availability		

- Ask the participants to copy the headings and to think about what their enterprise needs and to decide if their farm is suitable for the enterprise. Next to each indicator, they should write whether their farm is okay or not. They should also give an overall assessment of all factors. In this case all the factors should be “Okay”.

Technical Production Factors	Okay/Not okay
Soil	Okay
Climate (rainfall, temperature)	Okay
Topography	Okay
Water availability	
Overall suitability	Okay

If the technical feasibility is not okay, the farmers need to understand the risks involved in case they decided to proceed.

5. While the small groups are working on this, move from group to group to help.
6. When the groups have finished their work, ask each one to share the results of their discussions.

### 8.3.4 Exercise: Physical Resources and Inputs

*Process:*

1. Write the following headings on the board.

Resources/Inputs

Quantity

Source of supply

2. Ask the participants to open their Farm Business Plan exercise books to “Physical Resources and Inputs” and to copy the headings onto the page.
3. Explain that they will now discuss the physical resources required for their enterprises. They need to answer three questions:
  - What physical resources will I need? (capital, inputs, materials)
  - How much of each will I need?
  - How much of each is available at the farm and how much shall I buy?
  - What are my sources of supply?
4. Ask the small groups to think about what physical resources their enterprises will need. For crops, these should include seeds, fertilisers and pesticides, equipment, implements and tools, storage structures, etc. For livestock it should include feed, medicines, tools and small equipment, etc. These resources should include both existing on the farm and what they need to buy. They should list these in the first column. Give them 5-10 minutes for this.

Resources/Inputs	Quantity	Source of supply
Seed		
Fertiliser		
Hand hoe		
Pesticide		
Storage bins		

5. When they have finished, ask each group to share their lists. Encourage discussion. Have they covered everything? Is anything left out?
6. After each group has reported, ask the groups to decide on the quantity needed for each resource. For each resource in the list they should write the decided quantity under the “Quantity” column.

Resources/Inputs	Quantity	Source of supply
Seed	25kg	
Fertiliser	50kg	
Hand hoe	5	
Pesticide	15kg	
Storage bins	2	

- When they have finished, ask each group to share this with the rest of the participants.
- When all the groups have reported, explain that they must now decide where they will get each resource. Again the small groups should discuss this and make a decision for each resource. Write the decisions for each resource in the “Source of supply” column.

Resources/Inputs	Quantity	Source of supply
Seed	25kg	Nakuru Farm Supplies
Fertiliser	50kg	Nakuru Farm Supplies
Hand hoe	5	Available at the farm
Pesticide	15kg	Agricor
Storage bins	2	Build my own

- When all the groups have finished, ask each group to share their resource plan. Listen carefully. Encourage discussion. Have they covered all the resources he needs? Are there any major problems?

### 8.3.5 Exercise: Labour Requirements and Availability

*Process:*

- Write the following on the board:

I need \_\_\_\_\_ workers for a total of \_\_\_\_\_ days.

I have \_\_\_\_\_ workers from my family.

I need to hire \_\_\_\_\_ workers according to the following plan

<u>Enterprise Activity</u>	<u>Month</u>	<u>Total labour required to do the activity</u>	<u>Family members available to do the activity</u>	<u>Amount of labour to hire</u>	<u>Number of days needed by hired labour</u>

- Ask participants to open their Farm Business Plan exercise books to “Labour Requirements and Availability” and to copy the above onto the page. Explain that in this exercise they will discuss what labour they will need for their enterprises.

3. Ask participants about the labour on their current farms. Use the following questions as a guide for discussions:

- How many have only family labour?
- How many hire labour?
- Do any of farmers use communal labour or traditional work parties?
- How do they decide whether or not to hire labour?
- How do they decide when they need labour?

4. When the discussion is done, explain the following:

*Now you need to look at your enterprises and decide:*

- *how much labour you need*
- *how much family labour you have*
- *how much labour you must hire*
- *when you need it*
- *where you will get it*

*For crop enterprises you should think about all the different farming activities (e.g. land preparation, planting, weeding, pest control and harvesting). For livestock you should think about production activities (e.g. feeding, watering, cleaning and handling).*

*From this, you should estimate how much labour is needed. How many workers will they need? For how many days? Write this down in the first line in the labour plan.*

5. When the discussion is done, ask each group to discuss the need for hired labour on their enterprise. Give them 10 minutes for this.

6. When everyone has decided on how much labour they need, ask the groups to discuss how much family labour they have. Will they have to hire any labour? How much? In which months will they need to hire labour? When they have answered these questions, they should complete the rest of the labour plan. See example.

**Example Labour plan**

I need   5   workers for a total of   90   days.

I have   3   workers from my family.

I need to hire   2   workers according to the following plan

<u>Activity</u>	<u>Month</u>	<u>Total labour required</u>	<u>Family members available</u>	<u>Amount labour to hire</u>	<u>Number of days needed</u>
Land preparation	October	3	1	2	6 each (12)
planting	December	2	0	2	6 each (12)
harvesting	March	3	1	2	6 each (12)

7. When the groups have finished, ask one participant from each group to share the labour plan. Encourage discussion. Does the plan make sense? Is it missing anything?
8. When this discussion is done, ask each group to share what they discussed. Did any group think they would need to hire labour? What did they decide to do? How did they decide to do it?

### 8.3.6 Exercise: Market Plan

*Process:*

1. Ask the participants to open their Farm Business Plan exercise book to the section on Marketing.
2. Recap on the marketing diagram you had earlier on under marketing sessions. Ask participants about the components involved in marketing and the marketing channel. Ask one participants to draw the diagram on the board assist him/her as much as possible.
3. Remind them that:
  - A product exists only if someone is willing to pay for it (buy it)*
  - A product can be sold only if it has a customer*
  - Marketing is critical to the success of the farm business*
4. Write the following headings on the board.

Target market	Expected Quantity to Sell	Farm gate price (\$)	Marketing Costs (\$)	Market Expected Price (\$)
---------------	---------------------------	----------------------	----------------------	----------------------------

5. Ask the participants to open their Farm Business Plan exercise books to “Market Plan” and to copy these headings onto the page.
6. Explain that they will now be looking at the marketing plan for their enterprises. Explain that the marketing plan shows how their products will be marketed. The plan should include the target market, the quantity they expect to sell, the farm gate price, an estimate of the marketing costs and the expected market price.
7. Ask the participants in each group to help one another to think about their marketing plans. They should discuss the following questions:
  - What market should I use?
  - How much can I sell at each market?
  - What price can I expect from each market?
  - What costs can I expect to have to pay to use each market?
  - What other important points should I think about?
8. While the small groups are working, move from group to group to listen and help.

9. When they have finished, each participant should record the information in their books. If necessary, show them the example below (but use a well-known product as example).

Target market	Expected Quantity to Sell	Farm gate price (\$)	Marketing costs (\$)	Expected Price
Nakuru General Market	800kg	\$0.45 per kg	\$0.05 per kg	\$0.50 per kg
Monare's Fruit & Vegetable Shop	200kg	\$0.58 per kg	\$0.02 per kg	\$0.60 per kg

Other points

I will need to organise a truck for the Nakuru General Market. The produce will be sold over a two week period after harvest.

For Monare's, I will have to store it at my farm and take 10kg per day by bicycle.

When the small groups have finished, ask each group to share their market plan. Encourage discussion. Does the market plan sound reasonable? Does anyone have any suggestions?

### 8.3.7 Exercise: Profitability

*Process:*

Ask participants to open their FFS exercise books to the page about profitability. More on this can be found in the Module Understanding Business Management, topic Farm Business Profit and Understanding Enterprise Profitability.

1. Review the concept of profitability and how it is calculated.
  - Profit is the amount remaining when costs are deducted from income
2. When you have finished the review, write the following headings on the board.

<b>Income</b>			
<b>Product</b>	<b>Quantity</b>	<b>Price/Unit</b>	<b>Total Value (\$)</b>

3. Ask participants to copy the above headings onto the page.
4. Explain that they will now be discussing the profitability of their enterprises. They will start with income. They need to answer three questions:
  - What products will they sell?
  - What quantity of each product will they sell?

- What price per unit do they expect to get for their products?

They can get this information from the market plan prepared earlier. To work out the total value of the products they sell, they must multiply the quantity to be sold by the price per unit. Use the following example:

#### Income

<u>Product</u>	<u>Quantity</u>	<u>Price per unit</u>	<u>Total value (\$)</u>
Beans (market 1)	800kg	\$0.50	400
Beans (market 2)	200kg	\$0.60	120
Total Expected Income			520

5. Ask each group to work on the income for their farm. As they are working, move from group to group and help them if they need help.
6. When everyone is done, ask each group to share their income calculations. Encourage discussion. Does this make sense? Is anyone struggling with this?
7. After each group has reported, add the following headings on the board under the income table.

#### Income

<u>Product</u>	<u>Quantity</u>	<u>Price per unit</u>	<u>Total value (\$)</u>
Beans	800kg	\$0.50	400
Beans	200kg	\$0.60	120
Total Expected Income			520

#### Variable Costs

<u>Resource/Input</u>	<u>Quantity needed</u>	<u>Cost per unit</u>	<u>Total cost (\$)</u>
-----------------------	------------------------	----------------------	------------------------

8. Explain that they will now calculate the costs of their farm business. In this exercise they will be looking only at the costs associated directly with producing and marketing the product from their chosen enterprises. They have already made a list of the physical resources they will need and their costs. To calculate the total cost, they must multiply the quantity needed by the cost per unit for each.

**Guidance:** Regarding labour, it is suggested that all labour (whether family or hired labour) to be treated as a cost of production.

9. When they have all finished, show them how to total the costs. On the board, write the words “Total Variable Costs” at the end of the list of resources. Add up the cost of each resource/input and put the total at the end of the list of costs. Use the example below. Ask the participants to copy this into their exercise books using their own variable cost information.

#### Variable Costs

<u>Resource/Input</u>	<u>Quantity needed</u>	<u>Cost per unit</u>	<u>Amount (\$)</u>
Seed	10kg	\$5	50

Fertiliser	25kg	\$2	50
Pesticide	10kg	\$2	20
Labour	5	50	250
Total Expected Variable Costs			370

10. When they have all finished, show them how to calculate the expected profits. On the board, write the words “Expected Enterprise Profit” below “Total Variable Costs”. Show the participants how to subtract the Total Variable Costs from the Total Income. Put the total below the amount under “Total Cost” Use the example below.

**Expected Enterprise Profit** **\$150**

11. When they have all finished, ask each participant to share his expected profit. Encourage discussion.

### 8.3.8 Exercise: Cash Availability

*Process:*

1. Write the following on the board:

*Do I have enough cash available to implement the farm enterprise(s)?*

*a) I have the following cash available to use for my enterprise: \_\_\_\_\_*

*b) I need the following amount of cash for my enterprise: \_\_\_\_\_*

*( ) Yes, I have enough cash*

*( ) No, I do not have enough cash*

*c) The amount of extra cash I need is: \_\_\_\_\_*

*d) I need the extra cash in the following months: \_\_\_\_\_*

*e) I can get the money from the following sources:*

Source

Amount

2. Ask the participants to open their exercise books to “Cash Availability”. Ask the participants to copy the question into their exercise books. Explain the following:

*We will now discuss cash availability. Even if a farm is profitable, the profits will come only at the end of the season. It is important to know if you will have enough cash to carry out your farming activities during the season. If you do not have enough cash, you will need to decide what to do.*

3. Ask the small groups to discuss the following question: Do I have adequate cash available to implement my farm enterprise?

**Guidance:**



*To assist the participants, you might use a monthly cash flow to see exactly the months they will be with and without cash. The example used earlier on enterprise profitability for maize, can be used to illustrate the activities and how cash is utilised.*

4. Explain the following:

*We are going to use an example to discuss the concept of cash flow. The season for this farmer starts in September to August of the following year. In this example the farmer needs to buy seed and fertiliser in November which will cost him \$100 and \$120 respectively.*

*The example also shows that the farmer will organise hired labour for November (\$100), January (\$100) and February (\$100) to do weeding. The total cost for labour is \$300. In May harvesting is done by hired labour (\$400).*

*The farmer sells his maize in June and July.*

*Then you add up the costs for each month. The farmer needs \$100 in January, \$100 in February, \$400 in April, \$220 in November and \$100 in December as shown below.*

*The question then to ask is: Do I have enough cash in that month, or will I have to borrow the money?*

*The next step is to identify how much cash will flow into the farm. In this example, the farmer has income from crops in June (\$600) and July (\$1000).*

*This is what is called a cash flow. A cash flow shows the farmer how much cash flow into to the farm business and how much flows out of the farm business each month or over a certain period of time. If the cash flowing out is more than the cash flowing in, then the farmer knows he has to find extra cash for that month. In this example the farmer needs cash in November, December, January, February and April for the maize enterprise.*

Activity	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
<b>Cash outflow</b>													
Buy seed			\$100				-----	-----					\$100
Buy fertiliser			\$120					-----	-----				\$120
Labour-hired				\$100	\$100	\$100		-----	-----				\$300
Harvesting								\$400					\$400
<b>Cash needed</b>			<b>\$220</b>	<b>\$100</b>	<b>\$100</b>	<b>\$100</b>		<b>\$400</b>					<b>\$920</b>
<b>Cash inflow</b>													
Crop sales	0	0	0	0	0	0	0	0	0	600	1000	0	\$1600
Cash available										<b>600</b>	<b>1000</b>		
Net cash flow			-220	-100	-100	-100		-400		+600	+1000		

- The above cash flow indicates the amount of cash available at the start of cropping season. They should write this amount under (a).
- Next they should think about the amount of cash they need for their enterprise. Each farmer will have a different amount. When they have decided on the amount, they should write it under (b).

6. Explain that if the amount in b) is more than the amount in a), then they have enough cash for their enterprise. In this case they should put an “X” next to “Yes”. If the amount in b) is less than the amount in a), then they do not have enough cash for their enterprise. In this case they should put an “X” next to “No”.
7. If they have enough cash, they do not have to make any further decisions about cash. If they do not have enough cash, they will need to make a plan to get the money needed during the season. The total amount required should be written in (c)
8. Next ask the groups to discuss in which months they need extra cash (as shown in their enterprise cash flow). They should write down the months in (d).
9. Next ask the groups to discuss where the farmers can get the extra money. They should put the source under the “Source” column. Next to each source they should put an amount.
10. When all the participants have finished, ask one participant from each group to share his cash availability plan. Encourage discussion. Does the plan make sense? Will it work? Have they covered everything?

### 8.3.9 Exercise: Risks in Farming

#### Process:

1. Ask the participants to open to a blank page in their FFS exercise books.
2. Ask the participants what they think is risk in terms of farming. Encourage discussion. Lead the discussion to the understanding risk as follows:  
*Risk refers to things that could happen that can harm the farm business. Farmers need to think about them ahead of time and be prepared for them.*
3. Ask the participants what are the things that can happen and harm their farming business. What can happen to the production part of the business? What can happen to technical feasibility? You have gone ahead with the enterprise although other factors may pose a technical risk, what actions do you need to put in place? What would happen to the marketing part? What would happen to the financial part? What would happen to the human part of the business? Follow up the ideas with additional questions about how a particular risk can harm the farm business? What is the effect of a drop in the market price of a product? What is the effect of a pest infestation? What is the effect of a delay in the delivery of fertiliser from your supplier? Write their answers on the board under the relevant heading.
4. When this overview of risk is done, write the following headings on the board:
 

Risk and what harm it can do	How to handle the risk
------------------------------	------------------------
5. Ask the participants to turn to “Risk” in their Farm Business Plan exercise books and to copy these headings onto the page
6. Explain that now they should think about the enterprise they are working. Ask the groups to discuss the specific risks that they might face in these enterprises. They

should think about changes in market prices, low yields, increases in costs of production and other types of risks. For each risk they should also identify what harm it can do. Each risk they identify should be written down in the “Risk” section.

7. For each risk they identify, they should decide on what they think they can do about it. They should write their answers next to each type of risk.
8. When the groups have finished, ask each group to share what they have written about risk to their enterprises. Encourage discussion. Have they covered all the risks? Will their plans to address the risks work? Are there any suggestions?

### 8.3.10 Exercise: Notes

*Process:*

1. Ask the participants to turn page written “Notes”. Explain that in the notes section of the farm business plan, farmers can write any other important information they need to record. It may be about where to get technical assistance and when it is required, or about setting up group marketing activities with other farmers.
2. Ask each group to discuss if there is anything else they think should be included in the farm business plan.
3. When each group has finished, ask each group to share what they have written. Encourage discussion. What do the other small groups think? Are these notes useful to other small groups?
4. When the discussion is finished, ask the small groups to look back over the farm business plan exercise books. They should check the information and make changes where they think changes are needed.
5. When this is done, explain to the participants that they have just finished their first farm business plan. It is very important step toward making their farms better managed and more profitable. Encourage them to take their plans to their families and to discuss them with them. They may need to make changes. There is room in their books to write any additional information they may want to record.

### 8.3.11 Exercise: Writing Individual Farm Business Plans

*Process:*

1. Ask the participants to take their new exercise books. Explain that you want them to set up a book just like the practice book.
  - On the cover they should write: *My Farm Business Plan*
  - On first page they should write: *My Farm Business Plan for the* (insert a year or time period) *Season.*
  - In the next page they should write: *Background*
  - In the following pages they should write: *Farm Production Plan*
  - *Technical Feasibility*
  - *Physical Resources and Inputs*
  - *Labour Requirements and Availability*

- *Market Plan*
- *Profitability*
- *Cash Availability*
- *Risks*
- *Notes*

2. Explain that this exercise book is now ready to make all the notes they will need to prepare a Farm Business Plan of their individual farms. Explain the following:

*We have practiced writing a business plan. We have used a farm of one of our fellow farmers or an imaginary farm. This was just for practice. Each of you now needs to work out a business plan for your individual farms. Between now and the next meeting, each of you should consult your families and write a farm business plan for own farms. You should bring the complete plan to our next meeting.*

### **Key points from Topics**

A good farm business plan has the following main parts:

- *BACKGROUND*
- *FARM PRODUCTION PLAN*
- *TECHNICAL FEASIBILITY*
- *PHYSICAL RESOURCES AND INPUTS*
- *LABOUR REQUIREMENTS AND AVAILABILITY*
- *MARKET PLAN*
- *PROFITABILITY*
- *CASH AVAILABILITY*
- *RISKS*
- *NOTES*

**8.4 TOPICS: FINALISING BUSINESS PLANS***Objective:*

To review and finalise the first draft of the business plans for the individual enterprises

*Learning Process, Methods and Activities:*

Brainstorming, Group Discussions

*Materials required:*

White Board or Black Board, markers or chalk, exercise books

**8.4.1 Exercise: Reviewing Farm Business Plans for Individual Enterprises***Process:*

1. Organise the participants into groups with the same individual enterprises; 3-5 people per group.
2. Check with each group how far they got with the business plan for the individual enterprises. If it looks like the plans are nearly all done, then start straight away with step 3. If it looks like there is a lot of work still to be done, give each group more time to continue working on their plans. Set a clear time limit – one or two hours. Encourage them to work together.
3. Ask each group to review one another's business plans. They should discuss them more or less in the same way the whole group did the common enterprise. Give about 30 minutes for this.
4. Ask each group to consult and select one business plan from their group to present to the rest of the participants.
5. Ask the first group to present the complete business plan they have chosen. Ask questions and encourage the rest of the participants to ask questions. Help with suggestions for improving the business plan.
6. Ask the group to explain how the business plan contributes to fulfilling the farm business vision.
7. Repeat steps 5 and 6 one group at a time until all the small groups have had a chance to present their chosen business plan.
8. When the last plan has been presented, consolidate the work. Ask if there are any more questions or issues to be discussed.

## 8.5 TOPICS: DEVELOPING AN ACTION PLAN

### Objective:

To learn how to organize all farming operations over the production period in a way to enable to make best use of the resources available to implement the business plans and to make progress towards fulfilling their visions.

### Materials required:

White Board or Black Board, markers or chalk, exercise books

### Learning Process, Methods and Activities:

Brainstorming, Group Discussions

### Guidance:

- *Identify the actions required to implement the business plan (including timing and responsibilities); the actions will be developed into an action calendar and into a seasonal calendar.*
- *Finalise the resource needed to implement the business plan. Farmers are to use the information from the physical plan to confirm that the resources required for implementation are available on the farm.*
- *Keep a checklist handy of general activities needed to implement the business plan.*

### 8.5.1 Exercise: Preparing the Action Plan

#### Process:

1. Write the following headings on the board:

*Action Plan for my Farm Business Plan*

<u>Action</u>	<u>Duration</u>	<u>Start date</u>	<u>Responsibility</u>
---------------	-----------------	-------------------	-----------------------

Physical Resources & Inputs

2. Keep the participants in the same groups they formed to review the Farm Business Plans. Ask each participant to open their Farm Business Plan exercise books to a blank double page and to copy the headings onto the pages.
3. Start with *Physical Resources and Inputs* page of the farm business plan. They have already identified what they need including the quantity and the supplier. What else do they need to do to implement this part of the plan? Ask each group to make a list of the activities they will have to undertake in order to get the inputs they need. Do they have the cash or will they have to ask for credit? Will they need transport? Storage? They should write these under the heading "Action".

### Guidance:

#### Example of actions might include:

- ✓ *Arrange finance for buying inputs*
- ✓ *Confirm supplier and sale price for each input item*

✓ *Arrange transport to collect/deliver inputs*

✓ *Place order/collect inputs from supplier*

4. For each action, they need to identify how long it will take, when it should start and who will be responsible. They should write their decisions under the appropriate heading.

5. When each group has finished, ask each group to share their list of actions. Write these on the board. Encourage discussion. Are the lists similar? If they differ, why? Have any actions been overlooked?

6. On the board, draw a line under the list and add a new heading: *Labour*

*Action Plan for my Farm Business Plan*

<u>Action</u>	<u>Duration</u>	<u>Start date</u>	<u>Responsibility</u>
<u>Physical Resources &amp; Inputs</u>			
1. <i>Arrange finance for buying inputs</i>	<i>2 weeks</i>	<i>1 Jan</i>	<i>Muhamed</i>
2. <i>Confirm supplier and sale price for each input item</i>	<i>5 days</i>	<i>10 Jan</i>	<i>Muhamed</i>
3. <i>Arrange transport to collect/deliver inputs.</i>	<i>1 day</i>	<i>15 Jan</i>	<i>Bright</i>
4. <i>Place order/collect inputs from supplier.</i>	<i>1 day</i>	<i>15 Jan</i>	<i>Bright</i>
<hr/>			
<i>Labour</i>			

7. Repeat the process for the “Labour Requirements”

8. When “labour” is complete, draw a line at the end of list and write *Market Plan* and repeat the process again.

9. When “market” is complete, draw a line at the end of the list and write “*Risk*”and repeat the process.

10. Explain that this completes the action calendar. The next step is to develop a seasonal calendar based on the action calendar.

**8.5.2 Exercise: Developing a Seasonal Calendar***Process:*

1. Keep the same groups from the previous exercise.
2. On the board write the following headings:

**Activity Plan Seasonal Calendar**

Enterprise \_\_\_\_\_ Duration \_\_\_\_\_

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Responsibility
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----------------

3. Ask each participant to open their Farm Business Plan exercise books to a blank double page and to copy down the headings across the two pages.
4. Next they should copy the activities from the action plan onto the page under the heading “activity”.
5. For each activity, they should indicate the duration of the activity as shown in the example. It is determined by the starting date plus the duration.
6. Put the name(s) of those responsible in the last column.

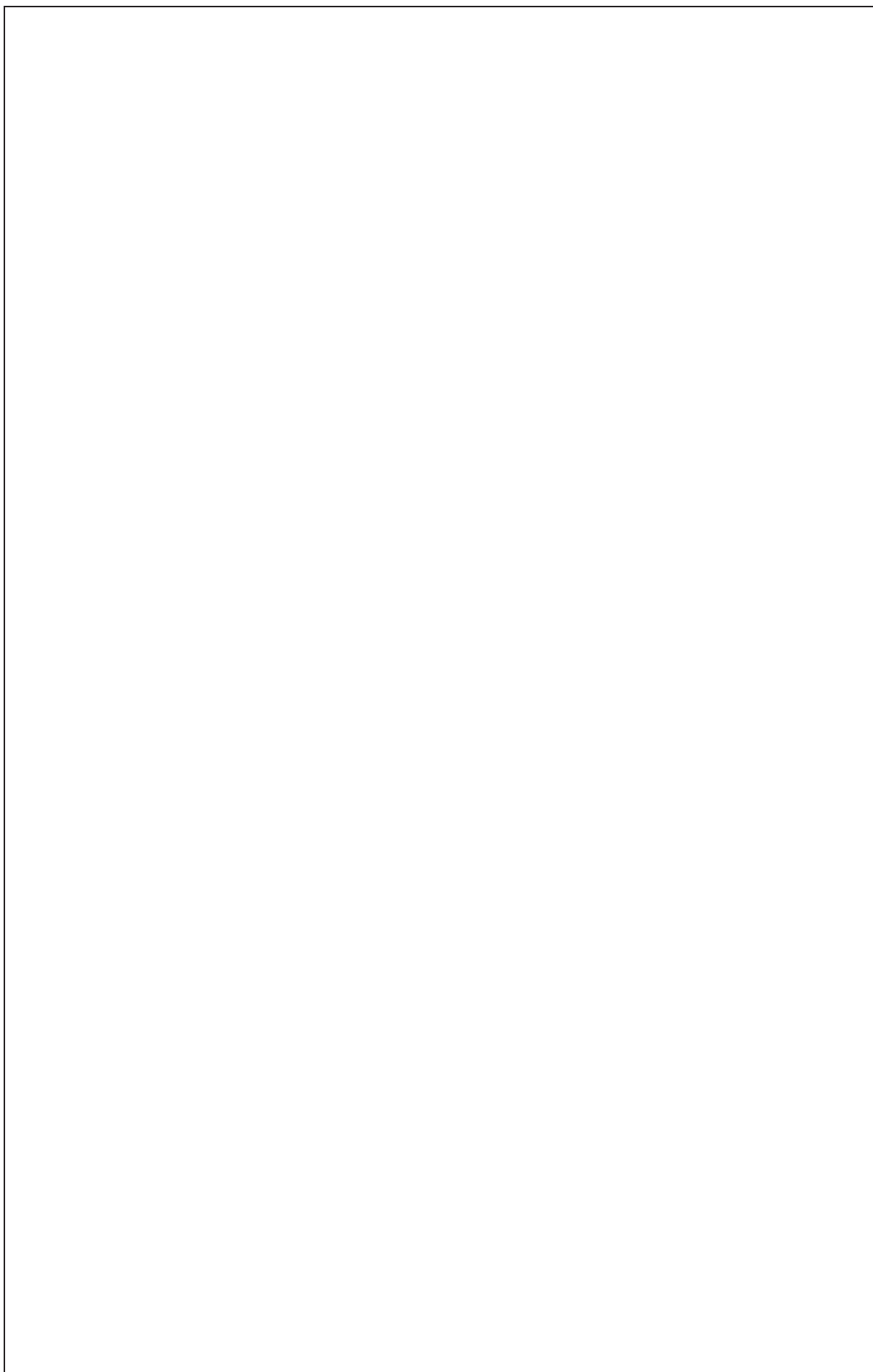
**Activity Plan Seasonal Calendar**

Enterprise \_\_\_\_\_ Duration \_\_\_\_\_

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Responsibility
Buy seed			-----	-----									Mariama
Organise ploughing				-----	-----								Abdul

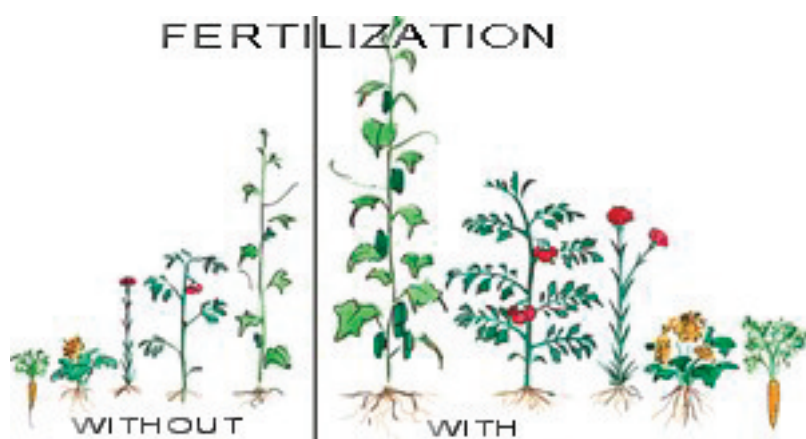
7. When the groups have finished, ask each to share the results of their work from one of their farms. Compare the results and encourage discussion. Give each participant a chance to make corrections to their calendars.
8. Emphasise that the action plan and the activity plan seasonal calendar will be the main guide to the work to be done their enterprises and to fulfil their business plan. Explain that when they return home, they should meet with their families to discuss the action plans and activity plan seasonal calendar and to make changes as needed.

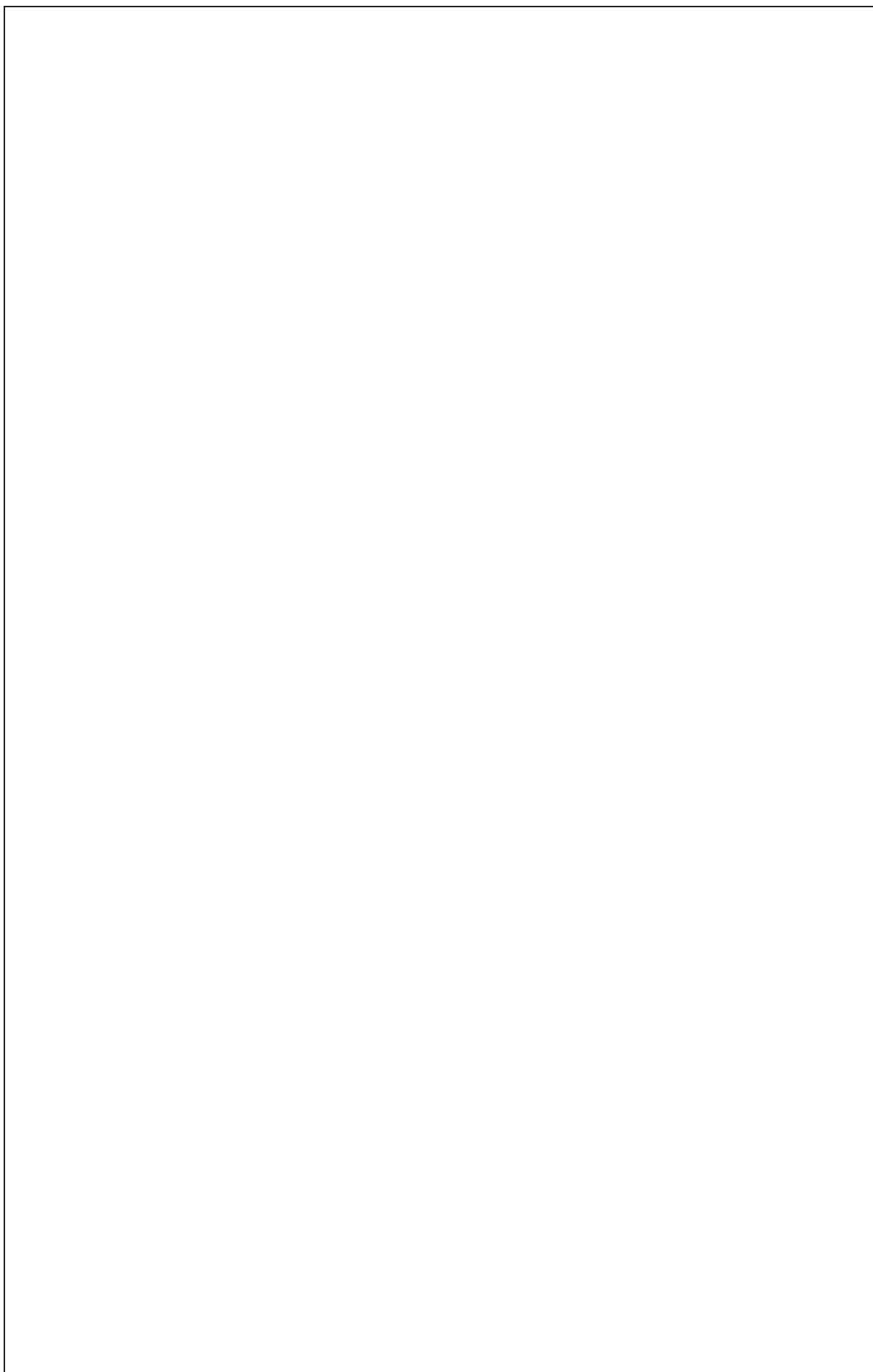




## MODULE 9

# PRACTICAL EXAMPLES FOR EXTENSION WORKERS





## MODULE 9 – PRACTICAL EXAMPLES FOR EXTENSION WORKERS

### A. LAND PREPARATION

One of the factors that affect plant growth is land preparation. Properly prepared fields promote good root development and better weed, pest and disease management.

*Learning objectives:* participants will better understand the relation between land preparation and to growing a healthy crop; participants will know the advantages and disadvantages of land preparation practices.

*Materials:* newly planted fields, large sheets of paper and marker pens

*Process:*

1. Explain the objectives and the procedure of this exercise to the participants.
2. Brainstorm with the whole group the important things to note when planning for land preparation. Come to an agreement on the important indicators and write them down. The list may include, but not be limited to, the following:
  - Is the presence of weeds a problem?
  - Is seed evenly germinated?
  - Is the crop healthy? Is it well established?
  - Is the field prepared in beds?
  - Does the type of land preparation have any influence on irrigation and drainage?
  - When was it prepared? Why at that time?
  - Is weed, pest and disease management considered when planning for land preparation?
3. Go with the participants to the field and ask the participants to observe a newly planted area. Small groups might be assigned to different crops and areas.
4. Ask the participants about their practices in land preparation and give them 30 minutes to prepare a presentation of the output of their observations and discussions.
6. Ask the groups to present and discuss the outputs.
7. Wrap-up, summarising the main points discussed.

*Some suggestions to facilitate the group discussion:*

- ✓ What is good land preparation?
- ✓ What is the importance of thorough land preparation?
- ✓ What are the characteristics of a well-prepared field?
- ✓ When is the best time to do the first ploughing and succeeding harrowing?
- ✓ What are the advantages and disadvantages of frequent or intense land preparation?
- ✓ How does land preparation influence the growth of weeds?
- ✓ How does land preparation influence crop germination?
- ✓ How does land preparation influence drainage and irrigation?
- ✓ How does land preparation influence soil erosion?

- ✓ What will the timing of land preparation influence?
- ✓ How can land preparation help in weed, pest and disease management?

## B. SOIL PARTICLES

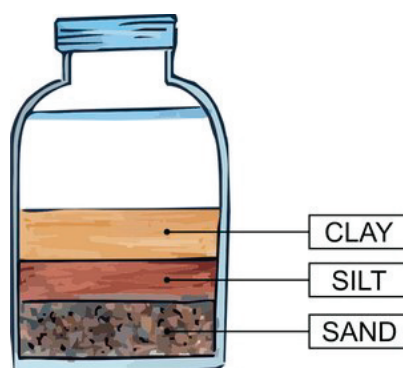
*Learning objectives:* learn that soil is made of different sized particles.

*Materials:*

- soil from outside (find several types of different soils, one type should be sandy soil, the second silt and the third type clay soil)
- jar or plastic bottle. As much as types of soil you have
- water

*Process:*

1. Collect different type soil from outside. Find soil with higher content of sand, also soil with higher content of clay and humus. If you cannot find different soil types, make different combinations by adding more sand to one type, and more humus to the other soil that you have.
2. Divide into three or four groups depending on how many soil types you have
3. Fill a jar two-thirds full with the soil.
4. Fill the jar almost to the top with water. Leave one to 5 cm of air space at the top.
5. Put the lid on tightly.
6. Shake the jar for three to five minutes until all the clumps of soil are mixed well with the water. You may need a spoon to break apart some of the clumps.
7. Set the jar down and wait for 5 minutes.



What does the soil inside the jar look like?

After 5 minutes	After 10 minutes	After One hour

8. Compare your “soil shake” to another group’s shake. How are they similar? How are they different?
9. Explain different parts of soil and their significance
10. Leave the experiment for the next meeting and check again during the next meeting and discuss differences

Note: Soils are made of three kinds of particles: sand, silt, and clay. Good soil is made up of a balanced mixture of these three particles.

*Discussion:*

Do you think your soil would be a good soil for cassava (rice) growing?

Why or why not? How do soil particles influence the water capacity of soil? What type of soil is easier to cultivate? Is the soil colour different due to particle size?

### C. DETERMINING SOIL TEXTURE

*Learning objectives:* to evaluate texture of different soil types.

*Materials:* water dispenser; soil sample; measuring spoon

*Process:*

1. Take a spoonful sample of a selected soil.
2. Put it on your left hand.
3. With the aid of the water dispenser, gradually add some water (drop by drop) and with your right hand manipulate it to the point where a sticky consistency is reached and then make a 2- 5 cm ball (3 do 5 cm) diameter. The point at which the wet soil becomes malleable is an indicator of its texture.
4. To identify the textural class of the soil, compare it to the table below.

Sandy	The soil stays loose and separated, and can be accumulated only in the form of a pyramid
Sandy Loam	The soil contains enough silt and clay to become sticky, and can be given the shape of an easy-to-take-apart ball
Silt Loam	Similar to the sandy loam but the soil can be shaped rolling it with a small and short cylinder
Loam	Contains almost the same amount of sand, silt and clay. can be rolled with a 6" long (approximately) cylinder that breaks when bends
Clayey Loamy	Similar to the loamy, although this one can be bent and be given a U shape (without forcing it) and does not break
Fine Clay	The soil can be given the shape of a circle, but shows some cracks
Heavy Clay	The soil can be shaped as a circle, without showing any crack

### D. PERCOLATION

Percolation rate is a measure of the “vertical permeability of the soil” or the rate at which the water moves vertically through the soil into the water table (i.e. the groundwater level).

During rainfall on a soil with low permeability, the surface soil will become rapidly saturated as the rainfall rate will exceed the movement of water through the soil resulting in runoff, even though the soil at depth may remain dry. In a highly permeable soil, rainfall will move rapidly deep into the soil and drain away so there will be less risk of saturation

and water logging. However, waterlogged soils causes root malfunction and prevent nutrient and moisture uptake.

This exercise will visualize percolation differences between soils and effects of those differences.

*Learning objective:* to visualize deep percolation and its potential contribution to groundwater recharge.

*Preparation:* collect two or three contrasting types of soil; a sandy soil, a soil rich in organic matter and a clayey soil.

*Time and Timing:* this exercise can be carried out at any time of the year, not limited by adverse weather conditions. The time required is initially 1 hour, but more observations can be made in the next day(s)

*Materials:* two plastic bottles of 1 litre, 1 sharp knife and some “sticky stuff” (or patty)

#### *Steps*

1. Divide the participants in sub-groups of 3-5 persons each; each group carries out the exercise.
2. Cut the tops from two of the plastic bottles and make small holes in the bottom to allow water to continue moving downwards by gravity.
3. Fill each container with a different type of soil or sand, compost, and soil.
4. Cut the base from the two other plastic containers and place or fix them under the two containers filled with soil. Pour the same amount of water (a cupful) into each container. Do it where people can see what happens over the next few minutes.
5. Each group should prepare a presentation of their results and findings for each type of soil.
6. Plenary presentations and discussions.

#### *Some suggested questions for processing discussion:*

- ✓ What different factors affect the percolation rate of a soil and ultimately the groundwater recharge?
- ✓ What is the groundwater depth in your area? How does it fluctuate?
- ✓ Compare the situation in the village over the years
- ✓ What are the participants’ perceptions of the quantity and quality of groundwater?
- ✓ How has the situation changed over the last 10 or 20 years?
- ✓ What are the dominant causes of groundwater pollution?

## E. PLANT NUTRIENTS

As per all living beings, plants need food to grow and develop. Plants live, grow and reproduce by taking up water and minerals from the soil, carbon dioxide from the air and energy from the sun to form plant tissues. As with other living beings, plants need different kinds of mineral nutrients.

To manage properly the fertility of a soil, it is essential to know the needs, in terms of nutrients, of the plants, the amounts required as well as the optimum timing for growing phases.

*Learning objectives:* participants will learn what nutrients plants need to grow.

*Materials:* large sheet of paper, marker

*Process:*

1. Draw a plant on a sheet of paper and ask the participants if they know what that plant/crop need to grow and develop (air, water, sun and soil). Write these around the plant (with arrows) on the paper.
3. Ask the participants to mention all the soil nutrients they know and list them on the sheet of paper also.
4. Inform the participants that there are 13 different elements which a crop needs for healthy growth: 3 primary, 3 secondary and 7 micro nutrients.
5. Explain the differences between primary, secondary and micro nutrients (differences in the quantities needed by the crop).
6. Discuss with the participants what will happen if the soil cannot provide one or two of the nutrients needed by the plant at a specific time, and what could be done to correct/prevent this situation.
7. Wrap-up, summarising the main points discussed.

*Some leading questions to promote discussion:*

- ✓ What are the soil mineral elements a crop needs?
- ✓ What can you do if a soil mineral element is limiting crop growth?
- ✓ What will be the effect of using N, P and/or K chemical fertilizers over a large number of years on the availability of the other 13 essential mineral nutrients in the soil?
- ✓ What can be done to maintain the availability of those other essential mineral nutrients?





**F. HOW THE PLANT “EAT”? (NUTRIENTS UPTAKE)**

To be able to best manage soil fertility, it is important to understand how a plant absorbs nutrients. Most of the nutrients are taken up by the plant through its root system. Root development is therefore very important for nutrient uptake. A plant can only take up nutrients when they are dissolved in water and therefore soil water plays a crucial role in the nutrient uptake process.

*Learning objectives:* participants will be able to understand factors influencing nutrient uptake.

*Materials:* spade, handful of a nitrogen (urea) fertilizer and handful of phosphate fertilizer, watering can with water

*Process:*

1. Ask the participants to discuss what the influence will be on the root growth and the nutrient uptake capacity of the plant of:
  - a compacted soil layer,
  - water table close to the surface,
  - very dry soil conditions.
2. Go with the participants to a nearby field where differences in crop growth can be observed and which are, most likely, related to limited root development.
3. Ask the participants to dig a pit close to a well-developed plant and one close to a badly developed plant (most likely to be as the result of limited root development).
4. Observe the root development of the different plants.
5. Compare and discuss with the participants the relationship between root development, nutrient uptake and crop development.
6. Show the participants a handful of nitrogen fertilizer (Urea) and a handful of phosphate fertilizer and ask the participants if the plant can take up the fertilizer in this solid form or if it has to be first dissolved in water.
7. Ask the participants what they think will happen to the fertilizer when it is added to the soil.
8. Sprinkle a little of the nitrogen fertilizer on the ground and do the same with the phosphate fertilizer on another spot. Ask the participants if the plants will be able to take up the two different fertilizer nutrients from where they are now.
9. Water the two spots with a watering can until most of the urea has disappeared. Use the same amount of water for the two spots.
10. Ask the participants if the plant now will be able to take up all the nitrogen? What about the phosphate fertilizer?
11. Discuss the importance of the ability of a nutrient to dissolve in water as well as the mobility of the nutrient in the soil to reach the roots.



12. Discuss with the participants what the consequences of soil fertility management of: (a) limited root development limiting nutrient uptake; and (b) the fact that nutrients have to dissolve in water first before they can move within the soil and be taken up by the plants.

*Some suggestions for discussion*

- ✓ Does an improvement in the soil structure also improve soil fertility?
- ✓ Are the nutrients present in the root zone the only nutrients available for the plant?
- ✓ Does the amount of nutrients available for a plant also depend on the size of the root system?
- ✓ Are the availability of water and the availability of nutrients related to each other?
- ✓ Does irrigation influence the nutrient uptake of the crop?
- ✓ Are all nutrients needed by the plant easily dissolved in water and made available to the plant?
- ✓ What will be the influence of deep ploughing on the fertility of a soil?
- ✓ What will be the differences between broadcasting and mixing into the soil for nitrogen and a phosphate fertilizer?
- ✓ What will be the effect of a nutrient such as nitrogen being easily dissolved on the long term availability of the nutrient for the crop? What will be the consequences for fertilizer management (split applications?)?

## **G. CROP NUTRIENT DEFICIENCIES**

*Learning objectives:* participants will be able to diagnose abnormal appearance or signs of abnormal growth as a result of nutrient deficiencies.

*Materials:* Brown paper, crayon, pencil, tape

*Process:*

1. Ask the participants if they have ever observed an abnormal appearance or signs of abnormal growth in their crops.
2. Go to the place where the participants have observed an abnormal appearance or signs of abnormal growth of the crop.
3. Ask the participants, to form small groups to observe the plants with abnormalities and to discuss in their groups:
  - ✓ if the abnormal symptoms have appeared just recently or if they have been present for a longer period.
  - ✓ if the symptoms are present on only a few plants/trees/small area or on a large number of plants/trees/large area.
  - ✓ if the area infected resembles a soil type unit and/or an area which has received equal/unequal soil management treatments.

4. Ask each group, to take one specimen of an abnormal and one of a healthy plant and to identify where the symptoms appear: mainly on the older (lower) or on the younger (upper) leaves or almost equally on both old and new leaves.
5. Ask each group to draw and report their observations on their specimens.
6. Ask the participants what they think the following characteristics indicate about the causes of the symptoms:
  - ✓ the length of time the abnormal symptoms have been present on the plants
  - ✓ the shape of the area covered with plants with the same symptoms
  - ✓ the area covered with plants with the same symptoms resembles an area with the same soil type and/or received the same soil management
  - ✓ the distribution of the symptoms on the plant.
7. Ask the participants what can be concluded about the cause of the abnormal symptoms based on the observations made.
8. Repeat with the participants all the steps they have gone through during “the nutrient deficiency diagnosis process”.
9. Repeat the process if the participants would like to do this at another location.

The symptoms of nutrient deficiencies and of pest infestations often look the same. But, if the symptoms have been observed over a long period of time and are universal to a large area related to one soil type or type of soil management, they are probably due to a nutritional disorder. Further, plant nutrients differ in mobility within the plant and therefore deficiency symptoms appear in different parts of the plant for different nutrients.

- ➔ Nutrients such as potassium and magnesium, which are highly mobile in the plant, show deficiency symptoms in the older leaves.
- ➔ Nutrients such as calcium and boron, which have a low mobility in the plant, show deficiency symptoms in the younger leaves.
- ➔ Nutrients such as nitrogen, phosphorus and sulphur, which have a medium mobility in the plant, show deficiency symptoms evenly spread over the plants.

*Some leading questions for discussions:*

- ✓ Does the symptom occur during the wet or dry season, or both?
- ✓ On what type of soil did you observe the symptom?
- ✓ What can you say about the symptoms (relate them to the functions of nutrients)?
- ✓ What part of the plants has the symptoms; upper/middle or any portion of the plants?
- ✓ Can you identify what causes the symptoms?
- ✓ Is it a nutrient deficiency or a pest?
- ✓ What about the root system of the plants?
- ✓ Can you describe the root of the healthy and the abnormal plants? Is there a difference?

## H. FERTILIZERS AND THEIR USE

### Learning objectives

- ✓ Participants should be able to distinguish the nutrient content of each type of fertilizer available in the area, (organic and inorganic) and explain the information written on the fertilizer bags;
- ✓ Participants should be able to estimate the amount, timing, and modality of fertilizers needed to grow a healthy crop on their farms;
- ✓ Participants will have shared their experience and knowledge on fertilizers available in their area.

**Materials:** Samples of different types of organic and inorganic fertilizers, bags of chemical fertilizers and samples of other types of fertilizers available in the area.

### Process:

1. Identify participants that have brought fertilizer samples to the meeting and ask them to present their fertilizer indicating:
  - what nutrient elements are provided by the fertilizer?
  - why is the fertilizer used?
  - how much is used and how is the amount to be used decided?
  - what is the time and modality of application?

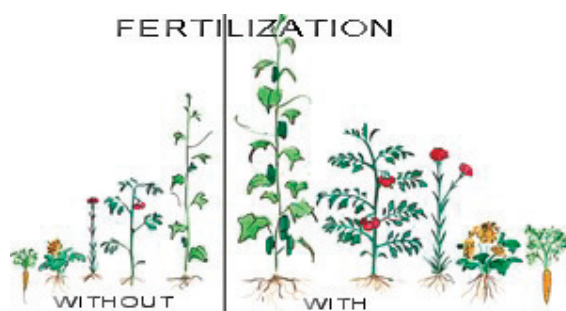
Complete the participant presentations with additional information if required and promote group discussion and participant-to-participant exchange of information.

2. Share with participants your knowledge on fertilizers showing other types of fertilizers (*prepared in advance*), in particular organic fertilizers, along with information on integrated soil nutrient management, soil fertility improving crops, and other farming practices that improve soil fertility.
5. Wrap-up, summarising the main points discussed during this exercise.

### Some suggestions to facilitate group discussion:

- ✓ What are the differences between the natural (organic) and the chemical (inorganic) fertilizers?
- ✓ What are the different types of fertilizers available in the area?

*Plants develop an abnormal appearance or show signs of abnormal growth when they receive an inadequate supply of a particular plant nutrient. Recognizing the symptoms of a particular nutrient deficiency can provide the participant with some valuable basic information upon which to plan further action. It is a preliminary diagnosis technique and, as soil testing, also has its limitations. It is part of the diagnosis of nutrient deficiencies, but does not, in itself, give the whole story, nor does it necessarily supply a solution to the problem. But, for the participant, who has often no access to other diagnosis techniques, it can provide some indicators for soil fertility management.*



- ✓ Where do the participants usually obtain the fertilizers?
- ✓ What nutrient element do you get from each kind of fertilizer?
- ✓ What are the quantities used of each of the fertilizer types per hectare?
- ✓ Why are the participants using the amounts of fertilizers they are using now?
- ✓ How do the participants apply the different types of fertilizer to the crop(s)?
- ✓ What things did you look for to assess the fertility of the soil?
- ✓ Which of the soils that we have seen today is the most fertile?

#### **I. MEASURING SOLUBILITY OF FERTILIZERS**

*Objective:* measure solubility of different fertilizer, then observing how readily the fertilizer has dissolved.

*Material:* 4 fertilizer types, 4 jars, spoon

*Process:*

1. Obtain samples of 3 different fertilizers.
2. Test each one in turn by placing one tablespoon full of fertilizer into a jar along with 1 cup full of water, then shaking ten times.
3. After shaking, observe how much residue, if any is left from the fertilizer being tested.
4. Grade the three different fertilizers according to most soluble through to least soluble.

*Note:* The rate at which a plant is able to absorb a fertilizer depends, among other things, on the solubility of that fertilizer.

*Some suggested questions for discussion:*

- ✓ Are there differences in solubility?
- ✓ How does the solubility affect the intake/absorption by plants?
- ✓ Which leach more easily?

#### **J. FERTILIZING SEED BEDS**

*Objective:* To compare organic with inorganic fertilizers in the nursery.

*Materials:* nursery site with good access to irrigation, sand, compost and/or manure (fully mature), N-P-K fertilizers, vegetable seeds, rice seedlings

*Process:*

1. Prepare a seed bed of about  $2 \times 5 \text{ m}^2$  (+ border) according to participants' practices, including harrowing.
2. Measure two plots of  $2 \times 2.5 \text{ m}^2$  each (make sure that the field is level, in order to avoid water flow from one plot to the other).
3. Label one plot "organic fertilizers" and apply the compost and/or manure only.
4. Label the other plot "inorganic fertilizers" and apply the N-P-K fertilizer only.
5. Sow 200 seeds in each plot or rice seedlings.
6. Apply normal irrigation and other nursery practices (not fertilizing) during the seedling raising period.

**Observations:**

7. Depending on the crop, after 4 to 6 weeks, record numbers of growing seedlings, of weeds and of diseased seedlings.
8. Calculate the overall percentage of healthy seedlings.
9. Randomly uproot 25 seedlings per treatment. Assess the average number of leaves per seedling and measure root and shoot length.

Note: Usually participants use both organic and inorganic fertilizers in their nurseries. The organic matter content in the seed bed is important. Not only is it the medium in which seeds need to germinate and grow, it is also the medium with which the seedling is transferred to the field. This exercise tests purely organic versus purely inorganic fertilisation in the nursery to observe effects on seedling growth and development.

*Some suggested question for discussion:*

- What are the differences between the different treatments?
- Was there difference in seedling growth and health? Why?
- What is the cost and labour needed for both treatments?
- What are advantages and disadvantages of both treatments?

**L. WATER HOLDING CAPACITY OF DIFFERENT SOILS AND ORGANIC MATTER***Learning objectives*

- ✓ Investigate the amount of water different soils can hold.
- ✓ Understand how water moves through the soil and is held by soil particles.
- ✓ Understand the role of organic matter in water holding capacity of a soil.

*Preparations*

Identify different types of soil, like sandy, clayey and/or loamy soils; poor and rich soils according to participants and compost.

*Materials*

- Samples of different types of soil and compost
- Filter paper or pieces of cloth
- Funnels, made from plastic soft drink bottles
- Measuring cup - or alternatively jars and balance
- Jars or beakers

*Process:*

1. Place the funnel in the measuring jar.
2. Place the filter paper or piece of cloth in the funnel.
3. Add a known amount of soil to the funnel.
4. Pour a known amount of water into the funnel, for instance 20 ml
5. Wait until the water has stopped dripping out of the funnel and read of the amount of water in the measuring jar or weigh the amount of water on the scale.
6. It may take 10-15 minutes for the water to stop dripping from the soil.

7. Record the results in a table similar to the one below.
8. Throw soil and filter paper/cloth in the bin and repeat steps 1-6 for the other soils.
9. Plenary discussion about results.

Note: The amount of water absorbed by a soil depends on many factors. The size of the particles making up the soil is an important factor in water absorption. The water stored in the space between the soil particles is called soil water. The larger the spaces, or pores, the faster water can move through the soil.

*Some suggested questions for discussion and points to emphasize*

- ✓ Which soil type holds the most amount of water?
- ✓ Which soil type holds the least amount of water?
- ✓ Which soil type would support plant growth longest during a dry spell?

#### **M. MICRO HABITAT AND NATURAL ENEMIES OF THE PLANTS**

*Objectives:* to understand on what parts of the plant pest stages are mostly found; to understand whether predator species are found on the same plant parts as pests.

*Materials:* One blank data sheet for each subgroup. Charts with drawing pens

*Process:*

1. Divide each group into 2 or 3 subgroups that can separately make their observations.
2. Assign one species (pest or defender) to each subgroup (only this species has to be recorded, all other insects can be ignored). Select those species that are available in the field.
3. Number of plants to be sampled: 10 (larger species); or 5 (small species); some pests or defenders are small but quite common, sampling 5 plants will be sufficient in these cases.
4. Walk through the field and select plants that are relatively erected.
5. Measure the plant and divide the plant into three equal parts, top, middle and bottom.  
The best way to sample may be to start at the growing top, then observe the stem, then all the fruits and finally the 5 leaves from that section of the plant (top, middle or bottom).  
For small species, leaves should be picked so that you can observe more closely. Because it is very tedious to sample all leaves of the plant, it suffices to sample 5 leaves from the top, 5 leaves from the middle and 5 leaves from the bottom of the plant.
7. To analyse the results, calculate the total and the average number on each plant part. Each group should prepare a chart for presentation.

Note: So far we have recorded pests and natural enemies, or defenders, by sampling the whole plant (or by sampling leaves only for small sucking pests). We made no distinction between different parts of the plant; whether insects occur on the fruits, leaves, in the top or at the bottom of the plant. To increase our understanding of the ecology of pests and



interactions with the plant and with the defenders, we will look at more detail into their position within the plant. If defenders are found on the same plant parts as pests, there is more chance they will meet and consume the pests.

*Some suggested question for discussion:*

- ✓ What is the distribution of each pest within the plant?
- ✓ Why are pests found on specific plant parts?
- ✓ Are predators found on the same or on different parts of the plant as the pests? What could this mean?

## **N. FARM MANAGEMENT – DECISION-MAKING**

*Learning objective:* understand and appreciate the importance of decision-making in a changing environment

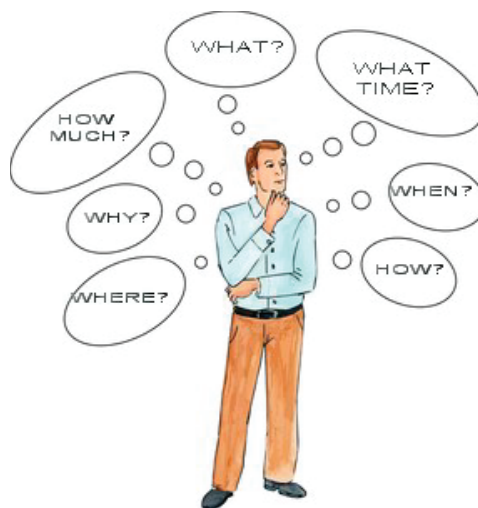
*Preparation*

The facilitator should provide each FFS member with an exercise book.

*Materials:* Flipchart, exercise books, pencils, rubbers, etc

*Process:*

1. The FFS participants assemble and are divided into three to four groups.
2. Each group is given one of the following tasks:
  - Track the changes in prices of common inputs within a selected period (trends);
  - Track the changes in market gates prices of common crops between planting time, and the time the crop matures and is ready for sale;
  - Identify which institutions are stakeholders in specific farming enterprises (e.g. input suppliers, extension service, financial services, etc.); and,
  - Identify who makes which farm decisions (man, woman, head of household, children, youth, etc).
3. Group discussion. The facilitator will use the participants' knowledge and the information from the group work to help discover how their decisions can negatively or positively impact on them. Questions (see below) about who makes decisions and who is usually trained during FFS will be tackled. The facilitator will try to balance the roles, and help change negative attitudes and perceptions right from the beginning of this FFS module. Trends in prices of inputs and products from group work will assist the FFS to discover when to make short-, medium- or long-term decisions.



*Some suggested questions for discussions*

- ✓ Who makes the main farm decisions? Who could/should be making them?



- ✓ Who actually does the farm tasks? Who could/should be doing them?
- ✓ Who attends the FFS sessions? Who could/should be attending?

#### **O. FARM MANAGEMENT – EXPLORING MARKET OPTIONS**

*Learning objective:* to explore options for market empowerment activities

*Materials:* flip chart, pens, pencils, notebook

1. Plenary discussion to identify needs for market options and diversification activities based on what the group has learned and discovered so far. Try to identify advantages and disadvantages of a group approach.
2. Sub-divide participants in sub-groups to identify options for market options activities (input supply, marketing output, activities outside primary agriculture such as processing, alternative income generating activities).
3. Conduct priority ranking among the various options.
4. For the two highest ranked options define the required conditions and activities for successful implementation. The FFS could then agree to take up this ranking activity, by for example, purchasing input in bulk in order to reduce transaction cost or value adding in order to target certain markets.

#### **P. FARM MANAGEMENT – FORMULATING A MARKETING PLAN**

*Learning objectives:* to identify the major technical and marketing problems related to a particular enterprise; to identify the major information gaps and how this information can be gathered; to formulate an implementation and marketing plan for this enterprise.

*Materials:* pens, paper, transport, checklists, marketing plan format

##### *Steps*

1. Discuss the objectives of a marketing plan with the whole group.
2. Using the check list below, jointly identify per each sub-group the essential information needed to formulate a marketing plan (try to identify 3-4 major essential questions per heading in the checklist).
3. Design a format for a plan making or use the example below.
4. Each sub-group goes to the market to learn about the conditions of the market for the products of their sub-group.
5. Each sub-group conducts the market survey.
6. Upon return to the training venue, the sub-groups work on their market plan for their current products plus for the product assigned to their team. They should justify how they arrived at their marketing plan.
7. Discuss the reports in plenary.

**Checklist for Market Surveys****a) Information on farm enterprises**

- When crops are harvested? What are the yields, the prices attained and the level of production?
- What are the advantages of these crops over others in terms of yield, quality, price, and seasonality?
- Is the produce graded? If yes, what grades?
- Is the produce packed? If so, what type, size and cost of packing material?
- What is the break-even price for each enterprise?
- What are the costs of growing, harvesting and transporting the crop?
- What are the main production problems?

**b) Input Supply and Financing**

- How readily available are the enterprise inputs?
- Are they of the right quality?
- Do input suppliers provide advice to farmers? If so, how good is the advice?
- Do farmers have money to pay for inputs?
- Do farmers have savings? Have they saved in the past?
- Do farmers have access to credit for working capital and long-term loans?
- What are the sources of credit available? What types of collateral is required and how available is finance?
- How easily can farmers obtain farm equipment (buying or hiring)?

**c) Local Marketing System**

- How is the farm produce marketed at present?
- Who buys the produce and when?
- Who are the most important intermediaries or buyers?
- Which buyers have the best reputation?
- What prices are paid?
- What competition is there between buyers?
- What is the variation between the prices received by farmers for similar produce in the same area? What causes this variation?
- Do buyers provide credit to farmers and on what conditions?
- How is produce transported to the market?
- Where are the main markets and where is the produce sold?
- Who provides transportation?
- What is the unit price of transport to the different markets?
- How long do the journeys take?
- How efficient are the transport links?
- What form of transport should be used to get the produce to the market?

- Should the transport of produce be pooled or sent individually?
- What is the frequency of shipment and the best day for arrival in the market?
- How much contact do farmers have with the market? What is their source of information and how quickly do they obtain market information on prices, volumes and quality requirements?
- What complaints do farmers have about intermediaries?
- What complaints do intermediaries have about farmers?

#### **d) Product Requirement by Market**

##### **Product Type and Form**

- What products do customers desire?
- What forms should produce be sold (fresh, processed, etc.)?

##### **Competition**

- How competitive is the market?
- Who are the main suppliers to that market?
- How much is sold and in what months of the year? (daily, monthly, annually?)
- What are farmers strengths and weaknesses compared to competitors?

##### **External Factors**

- What external factors are likely to affect sales of the produce (country growth, inflation, rising input prices, family income)? What are most critical? What legal factors are likely to affect the market?

##### **Buyers/Consumers**

- What are the characteristics of buyers/consumers?
- How is the product to be used?

##### **Market Potential**

- How large is the market? How much can the market absorb?
- What percentage of produce should farmers be interested in producing?

##### **Storage**

- Is the crop/livestock produce stored? If yes, where and by whom? How much of the product should be stored? What storage arrangements are required?

##### **Quality standards, packaging, prices**

- What are the grades and quality standards of the produce?
- What market prices are obtained? (average, maximum, minimum, effect of different quality standards on price)
- What type of packaging is required? What is the cost of packaging?

##### **Marketing Costs and Margin**

- What are the overall costs of marketing and what is the marketing margin?

**Sales**

- What factors are likely to affect sales (weather, special festivals, day of arrival in market)?
- What are the potential and techniques for developing sales?

**Pricing**

- Is the producer a price taker or a price maker?
- What way premium prices can be attained?
- If a price maker, what price strategy should be followed? And what is the percentage mark up? Does the set price leave a margin for profit?

**Promotion**

- What is the current trend in popularity? How can the product be more effectively promoted?

**Problems and Opportunities**

- What are the main problems facing producers?
- What are the main problems regarding consumption?

**e) Under-utilised Local Resources**

- What local resources/facilities (if any) (e.g. food processing, empty returning transport, cool rooms facilities, box manufacture, local radio, links to the market), are not being fully utilised?

**f) The farming community**

- Who are the leaders of the farming community? Who is being especially successful and why?
- Do farmers think they need help in marketing and if so what type of help?

**FORMAT OF MARKETING PLAN**

Enterprise	MARKETING STRATEGIES						
	When?	How Much?	Where?	How?	To Whom?	Farm Gate Price	Likely Problems

**Q. FARM MANAGEMENT – IDENTIFYING CROP PRODUCTION AND POST-HARVEST PROBLEMS**

*Learning objectives:* participants able to identify main existing crop production and post-harvest problems, and their causes and influence.

*Materials:* cards, markers

*Steps*

1. Ask participants to form small groups (3 or 4 groups) to discuss and to write on cards the main problems they have identified (*one card per problem*);
2. Ask each group representative to present their pooled information and to fix their cards on the board or flip chart for all to see; facilitate discussion during these presentations.
3. At the end of the presentations, cluster/regroup the problems according to major categories so that a total of 6-10 problems are listed. Ask all participants to confirm the final list of problems.
4. Wrap-up, summarising the main points discussed during this exercise.

*Some suggestions to facilitate the group discussion:*

- ✓ Are the problems observed related to crop production and post-harvest management activities?
- ✓ Are these constraints or not?

**R. GRANT PROPOSAL FORM**

Please discuss the following items among association members (and FFS facilitator) and fill in as completely as possible. Submit to your supervisor. Attach extra pages if necessary.

**Proposal title:**

.....

**Association name:**

.....

**Address:**

.....

**Introduction of the Association <sup>1</sup>:**

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**FFS proposed activities<sup>2</sup>:**

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**Workplan<sup>3</sup>:**

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**Detailed budget <sup>4</sup>:****Field inputs:**

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**Stationery and supplies: .....**

.....

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Travel for facilitator: (amount per week with x number of meetings) .....

.....

.....

.....

.....

Field day: .....

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.....

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Group contribution <sup>5</sup>: .....

Study field: .....

Snacks: .....

**Total grant requested:** .....

**Signatures (name, signature and date):**

Association chairperson: .....

Facilitator: .....

DAO: .....

<sup>1</sup> Explain the activities of your association and community activities in general including association objectives and membership.

<sup>2</sup> Describe the crops/livestock to be studied, including analysis of economic benefits expected as a result of this FFS activity.

<sup>3</sup> Provide commencement date, meeting days, and field day date. Also attach a list of members to be enrolled in the FFS including name, gender and age.

<sup>4</sup> Provide list of materials, supplies and other items to be purchased here or on a separate sheet.

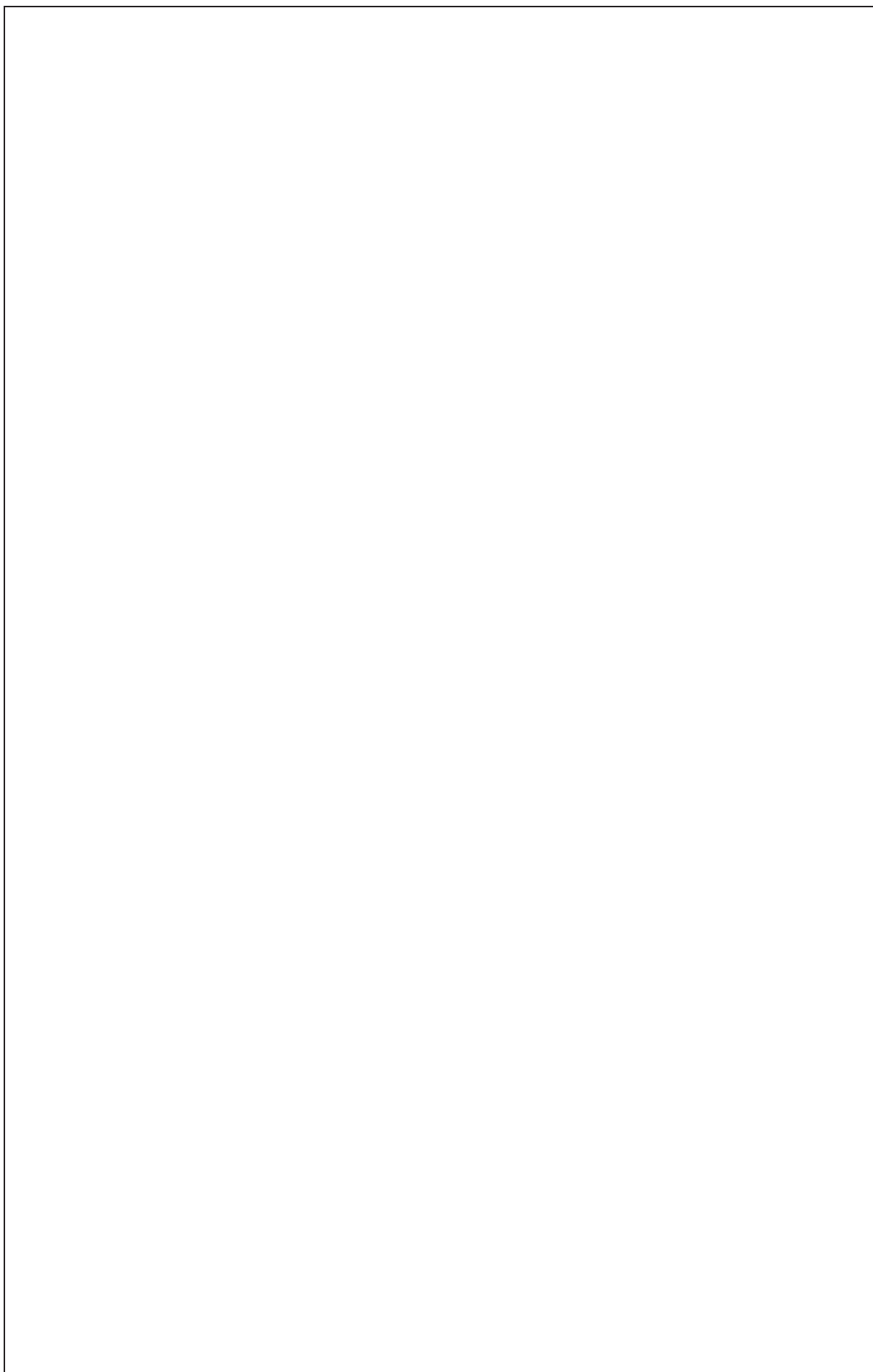
<sup>5</sup> Describe contributions from the association.

# MODULE 10

## FOOD AND NUTRITION SECURITY







## MODULE 10 – UNDERSTANDING FFS AND TEAM BUILDING

This training Food and Nutrition Security Module has been prepared to guide training in which facilitators will help participants in Farmer Field Schools to learn more about nutrition. The training can be run by one or two facilitators who have knowledge and experience in training, using active participatory methods.

The training is divided into five topics which can be covered on separate training days. The course includes information on food security, following the guidelines for good nutrition using locally available nutritious foods, food needs of family members with special food needs (pregnant and lactating women, infants and children), personal and environmental hygiene, and food safety.

The training methods suggested in this module are suitable for use in communities where there are limited resources. Facilitators should have a basic level of literacy and numeracy, but they do not need to have significant level of formal education. They should be experienced trainers, who know how to apply principles of active engagement of adult learners.

This training provides information on the topics listed above, but it should focus on facilitators assisting, and encouraging, participants to adopt the recommended actions and behaviors. If training time is limited it is better to cover fewer topics, and ensure that participants recognize the actions that are recommended for topics that are addressed. In addition they should feel confident that they know how to implement these actions.

This Food and Nutrition Security Module is supported by a “Nutrition Tool Box”, which contains visual aids and support material to assist discussion and learning about implementing healthy eating patterns.

### **Overall objectives of the training:**

- To sensitize participants on the importance of nutrition in personal and community health and development.
- To advocate for “nutrition sensitive agriculture” in home food production.
- To help participants to implement the guidelines for healthy eating for family meals.
- To help participants (in their daily activity, food production, and daily life) contribute to healthy eating and a healthy lifestyle for their families and communities.

We hope that the information in this manual, and the support material in the “Nutrition Tool Box”, will guide farmer field school facilitators in helping families to produce and eat foods that provide essential nutrients, and thereby contribute to improving nutrition of families in Sierra Leone.

**Words used in health, hygiene and nutrition education, and their meanings:**

Absorb	The body takes up water, nutrients and other substances (like medicines). Digested food is absorbed from the intestine into the blood.
Anaemia	A sickness in which the number of red blood cells is low. The most common cause is not having enough iron from the eating plan. A person with anaemia may feel weak, tired and dizzy.
Bleach	A strong smelling liquid containing chlorine which is used for disinfecting food contact surfaces, plates, utensils, cleaning cloths and storage containers. Bleach can be used to kill bacteria in water to make it safe to drink.
Breastfeeding	This is when babies get breast milk from their mothers. This can be directly at the breast, or expressed milk given by cup.
Complementary feeding	When a baby is six months old complementary feeding is started. This is giving the baby breast milk and soft / semi-solid foods.
Dehydration	Loss of water, which causes something to dry out. A person with diarrhoea can become dehydrated, which is dangerous for their health. A wet food, like vegetables leaves can be dehydrated so that it can be stored for later use.
Digestion	Process by which food is broken down into small parts for the body to absorb and use.
Exclusive breastfeeding	A baby is given only breast milk, and no other foods (not even water); babies should be fed this way until they are six months old.
Faeces	The waste material from the body that is eliminated through the anus.
Healthy eating plan	A diet that supplies all the foods needed to supply the correct amounts of nutrients. This is sometimes called a balanced diet.
Iodate salt	Commercial table salt that has had iodine added (fortification).
Kilojoule	The unit used to measure energy in foods.
Nutrient	The parts of the food that are used by the body for energy, for growth and to keep the body healthy.
Oral rehydration solution	A mixture that is specially prepared to give to people with diarrhoea or vomiting. This will help to stop them from drying out inside (becoming dehydrated). The homemade mixture is made with sugar, salt and water and is called Sugar Salt Solution (SSS).
Pathogens	A type of germ that causes disease.
Under nutrition	This is the condition that a person develops when they do not have enough of one or more nutrients; for a long time.

**Recommended materials for training**

Teaching aid pictures on	<ul style="list-style-type: none"> <li>• The food paths (home and commercial)</li> <li>• Factors that contribute to good nutritional status in children</li> </ul>
Nutrition tool box	<ul style="list-style-type: none"> <li>• Food flash cards</li> <li>• Food guide poster (if available)</li> <li>• Sentence cards of Guidelines for Healthy Eating</li> </ul>
Flipchart size pictures	<ul style="list-style-type: none"> <li>• Taken from UNICEF or MoHS IYCF charts – done in line drawing style               <ul style="list-style-type: none"> <li>○ Maternal nutrition during pregnancy and lactation</li> <li>○ Breastfeeding (exclusive and at night)</li> <li>○ 6 – 9 months</li> <li>○ 9 – 12 months</li> <li>○ 12 – 24 months</li> <li>○ Hand washing (adapted)</li> </ul> </li> <li>• Household scene for hygiene education</li> <li>• Germ multiplication</li> <li>• Food safety keys</li> </ul>
Items for demonstration	<ul style="list-style-type: none"> <li>• Hand washing               <ul style="list-style-type: none"> <li>○ Water, Bow, Jug, Soap or ash</li> </ul> </li> </ul>
General	<ul style="list-style-type: none"> <li>• Beans / counters</li> </ul>

**Guidance:**

Explain that the training will include discussion and other training methods. All participants are encouraged to take part in the discussions and to share ideas and concerns. There are no answers that are wrong, all discussion relates to what they understand and what they feel about the topic that is being discussed.

**10.1 TOPICS: BASICS CONCEPTS OF FOOD, FOOD SECURITY AND NUTRITION***Learning objectives:*

By the end of this session participants will:

- ✓ Be able to describe the food path (from production to consumption) of commonly eaten food items (home food production and commercial food production).
- ✓ Identify and discuss problems that may limit food availability in the area (for the community and for families). Most of these can be described in one of the following dimensions:
  - availability of food in the country, district etc
  - access to food at household level
  - consumption (utilization)
  - stability of all dimensions over time (all year)
- ✓ Understand the link between good nutrition and good health.
- ✓ Recognize the importance of nutrition security, rather than only food security.

**10.1.1 Session Outline**

Content	Items needed	Methods
Foods commonly used in the area and food paths.	Food flash cards. Counters / beans. Pictures food path stages.	Round robin. Personal exercise. Group discussion.
Food availability throughout the year and problems that limit food availability.	Food flash cards. Seasonal food calendar.	Presentation / discussion. Exercise.
Link between eating patterns and health.		Discussion. Provide link to next session.

**10.1.2 Summary of Information**Foods and food paths

- The food we eat comes from different places. Some foods are produced at home; some are from plants we grow and others are from animals we catch or keep. We may buy some of the food; this can be produced by other people or may be produced by a food company.
- Different foods are available at different times of the year and in different locations. The types and quantity of food available at a particular time influence the food and meals eaten by individuals and families.

Household food security

- Some families may not have enough food to eat; there could be many reasons for this. There are actions that people can take to increase the amount of food that they have to eat.

#### The link between food and health

- People who eat the right amount of the right kinds of foods have improved health and feel more energetic.

#### **10.1.3 Exercise Summary**

1	Naming commonly eaten foods	Question and input.
2	Dividing foods into groups; produced at home / bought	Sorting pictures.
3	Personal exercise; number of different types of foods eaten	Indicating produced / bought using beans.
4	Steps of food production	Identifying steps of food paths; support discussion with pictures.
5	Barriers and solutions to food availability	Continue from above.
6	Link between nutrition and health	Summarize the above with point that leads into next session.

#### **10.1.4 Exercise:**

1. Ask the participants the following questions.  
Go around the group and try to get at least one answer from each person:
  - “Please name foods that you have eaten in the last week”
  - “Are there foods that you eat at other times of the year that are not available now – what are they?”
  - “Are there other foods you know about that you could eat, but you do not have here?”
2. Here are pictures of these foods.  
“Please divide these into three piles
  - foods you produce here
  - foods you buy
  - foods that fit into both groups.”

#### **Guidance:**

Prompt if there are foods that are not included that you are aware they use e.g. salt.

3. Ask participants to do this personal exercise:
  - “You do not eat all these foods every day. Please think of how many of them you ate yesterday – from the time you woke up, until the time you went to sleep at night. Keep that number in your head.”

- “Now come to this bowl and take that number of beans.”
- “Take your beans and divide them into two piles. One pile has the foods that were produced here in *INSERT NAME OF PLACE*, and the other has foods that you bought that were produced somewhere else.”
- “We will talk about these numbers again later in the training. First let us go back to the foods you have mentioned.”

4. Use the piles of food pictures to talk about the stages of production of these foods.

- “Before we see the food like this, it goes through many steps of production. Let us take tomatoes as an example, (use another *popular plant food from the area if needed.*) What are the steps?”

**Guidance:**

After feedback and prompting, use the pictures of key food path stages to discuss the stages.

Home production:

- prepare the land
- plant
- weed, water etc
- harvest
- store
- cook

- “Now let us look at another food, what are the stages of production for bread?” (*Use another example if people make their own flour and bread*)

**Guidance:**

After feedback and prompting, use the pictures of key food path stages to discuss the stages.

Commercial production

- as above to ‘harvest’
- transport in truck
- mill (e.g. flour)
- package in mill
- on truck to bakery
- mixed with other ingredients, made into bread, baked
- on truck to shops
- for sale at small shop

- “We see that the steps are different for home produced food and for commercially produced foods. What are the main differences?”

Ask participants to give answers they think, and then add other points if needed:

- Commercially produced foods have a step where they must be transported by truck – this takes diesel and so adds to the cost of the food.
- Commercially produced foods are often in packaging material, this costs money.
- Most commercially produced foods are available all year.
- Some commercially produced foods have very little nutritional value (e.g. sweets).
- Home produced foods are available when they are in season.
- Home produced foods do not have the extra cost of packaging, transport and profit.

5. Continue the discussion about barriers to food availability and solutions to these barriers.

- “What problems can occur along these pathways of production that stop you getting the food?”
- “Let us discuss tomatoes and bread as examples”

Tomatoes

- no rain
- plant gets disease
- not available all year

Bread

- no money to buy it
- only available in town

- “How can some of these problems be solved? What can you do if this occurs?”
  - No rain: grow a variety of foods, as some survive when there is little rain / use dried foods from previous season.
  - Plant gets disease: put mulch on soil to keep soil and disease away from the leaves, remove diseased leaves.
  - Not available all year: dry some to use in cooked dishes.
  - Use home grown starchy foods instead of bread
  - Buy it when you go to town.

**Guidance:**

Participants must realize that there are actions they can take to increase the availability of some foods.

Repeat the key message: “What can you do to increase the availability of some foods?”

6. In this session we have seen that different problems can occur that may prevent us having some types of food.

- “What happens to us and our families when we do not have enough food?”



*This is when the family does not have food security.*

- “Could this happen if there is food, but only one or two kinds available?”

*This is when the family does not have nutrition security.*

Give participants time to think of answers, then add the following points if they have not been raised.

- we get sick      • our children do not grow well      • we do not feel strong

Explain that in the next session you will be discussing information on the foods that are most important for health, and steps you can take to help you to use this information.

## 10.2 TOPICS: GUIDELINES TO HEALTHY EATING

*Learning Objectives:*

By the end of this session participants will be able to:

- ✓ Describe the main functions of food in the body.
- ✓ Name and discuss information about foods available for use in the community.
- ✓ Describe a healthy eating plan, using the guidelines for healthy eating and foods available locally.

### 10.2.1 Session Outline

Content	Items needed	Methods
Food groups. Nutrient functions.	Food flash cards. Sentence cards of guidelines.	Round Robin; sorting foods to groups.
Importance of variety.	Nutrient content chart. Food guide poster.	Feedback on thoughts of meaning of food guide.
Guidelines to healthy eating.	Food flash cards. Sentence cards of guidelines.	Discussion and feedback, meaning of statements, barriers and solutions. Group work as above.
Application of messages.		Personal goal setting.
Meal and menu planning.	Beans.	Small group work. Meal and menu planning.

### 10.2.2 Summary of Information

#### Nutrient functions and food groups

- Enjoy a variety of foods
  - Food provides the nutrients that are essential for life.
  - Different nutrients have different functions in the body.
  - Food provides energy to work, to play, to live and to be healthy.
  - Food provides substances to help the body fight sicknesses.

- Food provides the building blocks for the body, so people can grow and the body can repair itself as it ages.

#### Varied local foods and their contribution to nutrient needs

- Different foods have different nutrients. People who eat a variety of foods, from each of the food groups, will get a variety of nutrients.
  - Eat different foods from each food group; use food from at least 4 food groups a day.
  - Use foods that are available in your community.

#### Guidelines for healthy eating, planning mixed meals

- A healthy eating plan has three mixed meals a day
  - Eat starchy foods at every meal.
  - Eat plenty of vegetables and fruit every day.  
Eat at least one portion from group A (vitamin A rich food).
  - Eat beans, peas, lentils or soya most days.
  - Include animal and milk foods when you can.
  - Add a little oil or have avocado or nuts at least once a day.  
This should be with the meal that has the vitamin A rich food.
- Drink lots of clean water.

### **10.2.3 Exercise Summary**

1	Food groups.	Use food pictures to create food groups for nutrition education. Round robin.
2	The food guide	Discussion of food guide poster and interpretation of it.
3	Enjoy a variety of food	Discussion of understanding barriers to achieving it and some solutions.
4	A healthy eating plan has three mixed meals a day	Discussion of understanding, barriers to achieving, message and support statements and identification of solutions.
5	Fishing game	Used to reinforce messages of planning mixed meals to obtain all key nutrients.
6	Goal setting	Setting of some personal goals for changes in action. Link back to number of beans in session 1.
7	Meal and menu planning	Practical personal menu planning, including use of additional foods discussed in previous point.

### **10.2.4 Exercise**

1. Use the food flash cards to support your teaching in this session.
  - “Earlier we grouped foods you produce at home and those you buy.  
Now we will group them according to food type”
  - “Look at these food pictures, does anyone know one food that is called a starchy food, or staple food?”

- “Please pick up that picture, and place it over here.” (to be placed by itself)
- “Now can someone give us one food that is a vegetable or a fruit?”  
“Pick up the picture and put it here.” (Place it apart, by itself.)

Continue by asking for examples of foods as follows, and place them apart:

- Give one food that has oil / fat.
- Give one food that is from an animal and is a building food.
- Give one food that is from a plant and is a building food.

Continue until all the pictures are placed in a food group. If anyone makes a mistake ask the other participants if they agree or not, if all are wrong then correct them.

- “These are the food groups that we use when learning about healthy eating. The vegetable and fruit group is divided into two groups. Some of these foods have the important nutrient, vitamin A. These foods go in their own group, we call this Group A. You will learn more about vitamin A later in this training. Which foods are high in vitamin A?” (If anyone knows use their information, otherwise provide it.)

2. Here is a poster with these foods grouped in this way.

- “Have you seen this before?”
- “Have you seen something similar to this before?”
- “What does this picture teach you about foods?”
- “We will now learn more about these foods and how they help promote good health.”

Record the responses made in this session for inclusion in your training report. This information is useful to find out who has had nutrition training in the past.

- “This picture is used to remind people about the ‘Guidelines for Healthy Eating’ that you are going to learn about now.”
- “You will have more chances to discuss the meaning of this picture.”

3. Show the sentence card

**Enjoy a variety of food.**

- “What do you think that this statement means?”

Get a lot of feedback, probe to find out what participants think that “variety” means.

Explain:

- This guideline statement teaches us to eat a variety of foods; this means we should all eat different foods from within one food group, and should also eat foods from different food groups. (Point to the food guide picture as you explain this).

- The reason for this is that people who eat a variety of food are more likely to get all the nutrients that they need compared to people who only eat a few kinds of foods.
- Nutrients are the goodness in food that we need for good health.
- Different nutrients have different functions in the body.
- Food provides energy to work, to play, to live and to be healthy.
- Food provides substances to help the body fight sicknesses.
- Food provides the building blocks for the body, so people can grow and the body can repair itself as it ages.

Now discuss reasons participants may find it difficult to follow the message in this guideline (in the same way as they discussed difficulties in getting some types of foods, in session 1). This can be done as small group work where possible.

- “What makes it difficult for you to eat a variety of foods?”
- “How can this problem be solved?”

Some possible problems and their solutions are:

- Little variety available locally / Learn how to grow more kinds of foods.
- Too far to go to town to buy food / Produce as many kinds of foods as you can at home.
- Family do not like to change / Explain why family members need variety, and encourage them to give ideas of foods they are happy to eat.

Encourage discussion about variety in all food groups.

Record the responses made in this session for inclusion in your training report. This information is useful to find out what support communities need to improve their eating plans

4. Show the sentence card and support statements for the second guideline and for the third guidelines.

#### **Eat two to three mixed meals a day to have a healthy eating plan**

- Eat starchy foods at every meal.
- Eat plenty of vegetables and fruit every day.  
Eat at least one portion from group A.
- Eat beans, peas, lentils or soya most days.
- Include animal and milk foods when you can.
- Add a little oil or have avocado or nuts at least once a day.  
This should be with the meal that has the group A food.

#### **Drink lots of clean water**

Discuss the guideline and each support statement in turn. Use the same questions as used for the previous guideline.

Use whole group discussion or small group discussion with feedback.

Conclude this section by explaining that this session has shown what foods they must eat to have healthy eating plans. They will find that they are already doing many things which are good for healthy eating, but there may be some changes that they will need to make.

#### 5. Fishing game

Participants work in groups. Give each group one 'fishing rod' and they take it in turns to 'fish' for game cards from the pond. Each game card has a kind of food, with symbols representing the main nutrients it provides. They must mark the nutrients that they have from their 'fish' on their game card. The first group to have all the nutrients marked will be the winner.

Some groups may need to bargain with other groups (after a while or when all the fish have been caught) to barter cards they have for cards they need.

After the game is finished ask the participants what they learnt; the main learning points are:

- different foods provide different nutrients
- some nutrients are found in very few foods, and so are hard to get in the eating plan.

Ask participants to plan daily meals from their cards – do they have foods that can be eaten together? What do they learn from this?

Using the guidelines for healthy eating helps to plan meals that supply all the nutrients needed for good health.

#### 6. Goal setting

- "Think of one thing that you will do differently to apply one of the messages in the guidelines."
- "Try to think of something that you can start to do differently this week."

Ask the group to share their goals.

- "Do you have any goals you will set which are more long term? Please share them with the group."

If anyone has not raised it ask if anyone has plans to increase the variety of foods they will eat; will the extra foods come from home food production or from buying the food.

Give results of the average numbers of foods they eat and they buy (from the earlier bean exercise), ask how they can increase this.

Encourage them to set goals of nutritious foods that can be home produced that can be included in their regular eating plans.

#### 7. Meal and menu planning

Ask participants to describe their typical daily food pattern.

Ask for suggestions of how it can be improved to follow the messages in the guidelines and the food suggestions that they have listed in the previous point.

What changes may be needed in food production to make this easier to achieve?

What other changes are needed in the community to help achieve the guidelines?

Summarize by setting an action plan, with specific responsibility allocated, for any changes that can be implemented relatively easily, and those that will require follow up or external input.

### 10.3 TOPICS: NUTRITIONAL STATUS - DETERMINANTS AND OUTCOMES

*Learning Objectives:*

By the end of this session participants will:

- ✓ Have learnt about the nutritional status of children and adults in Sierra Leone and know the consequences of undernutrition.
- ✓ Understand the factors that contribute to good nutritional status (UNICEF conceptual framework on the causes of malnutrition in children).

#### 10.3.1 Session Outline

Content	Items needed	Methods
Nutritional status of people in Sierra Leone / province / district.	Beans.	Interactive discussion.
UNICEF Conceptual Framework on the Causes of Undernutrition in Children.	Pictures of factors that contribute to good nutritional status in children.	Discussion.

#### 10.3.2 Summary of Information

Information on undernutrition and the consequences

- People can become sick (malnourished) when their eating plans supply more or less nutrients than they need. Malnutrition is a result of undernutrition or over nutrition.
- There are other factors besides lack of food that contribute to undernutrition, such as the environment and health care.
- The type of undernutrition will depend on:
  - the nutrients that are missing
  - the age of the person
  - the amount of time that the eating plan has provided the incorrect amount of nutrients.
- Babies and children have a high risk of developing undernutrition, because their needs for nutrients are high.
- Children with undernutrition will not grow as well as they should and they may get sick often. Their brain will not develop as well as it should and the child may have difficulty at school when he / she is older.

Causes of undernutrition in children

- Poor nutritional status is not only due to poor eating habits, it may also be caused by frequent illness, lack of care and limited access to health care.
- People, especially children, who do not have access to adequate sanitation, clean water and a clean environment, are at high risk of developing undernutrition.

### 10.3.3 Exercise Summary

1	Understanding of undernutrition	Presentation of key points.
2	Explanation of numbers of women children in Sierra Leone who have under nutrition and the consequences	Use of beans to illustrate statistics.
3	Factors that contribute to good nutritional status in children	Discussion with drawings.
4	Participant commitment to spread this message	Personal goal setting, relating to changes in piles of beans.

### 10.3.4 Exercise

#### 1. Explain the following:

- When we talk about health of people we think of many different kinds of sicknesses that could stop them being healthy.
- Go around the group and ask them to name different kinds of sicknesses that are found in their community; this could include malaria, TB, HIV, AIDS, measles, pneumonia, parasite infections, diarrhoea and so on.
- There is one kind of sickness that many people, especially children have that does not make the person look different. This is undernutrition, this happens when the person does not have enough of the correct food, for a long time.
- When children have undernutrition they do not grow well, when they get to school they cannot learn well, and when they are adults they are not as strong as they could be.
- When pregnant women have undernutrition they are very tired and their baby does not grow as well as it should.

#### 2. Place beans in 3 pre-counted piles of 100.

Tell participants that these piles of beans each represent 100 people from the group specified in Sierra Leone / the Province / the District (facilitator to get information depending on availability). The groups are:

- Pregnant women with anaemia
- Children under the age of 5 with long term undernutrition
- Children under the age of 5 with a shortage of vitamin A in their body

Ask for input on how many people they think have this condition. Get feedback from a number of people.

Give the information from health statistics. Ask someone to count out the number of beans to show this.

The national statistics are

- Pregnant women with anaemia: 62 out of 100
- Children under the age of 5 with long term undernutrition: 34 out of 100
- Children under the age of 5 with a shortage of vitamin A: About 47 out of 100

“Do you think this is a problem for our country / province / district?”

“What can we do to help?”

It is likely that many answers will relate to the discussion already conducted about healthy eating.

Agree with these comments; ask if there are any others?

Explain that in the next session you will discuss food needs of pregnant women and young children. Before that you will continue to discuss the factors that help young children to be healthy or that may cause them to have undernutrition.

3. Place the picture of a healthy well nourished child (under the age of two) on the board.

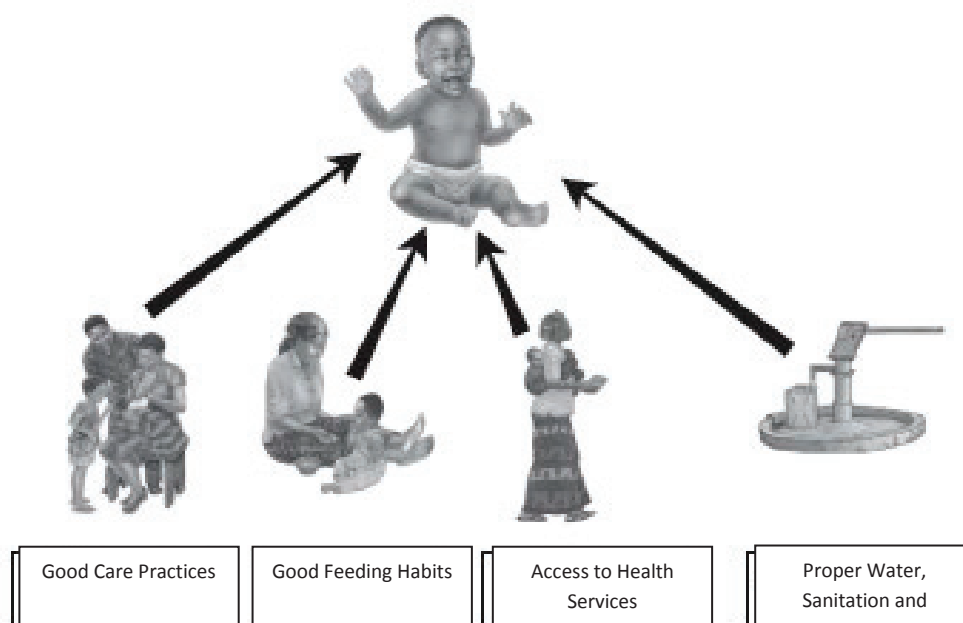
Ask participants to name all the things that are needed to have a healthy child; as participants mention items place that picture on the board.

**Guidance:**

You may need to probe to get input needed for this discussion.

Confirm that participants understand why many of these reasons apply specifically to children under the age of two, and some also apply to children aged from two to five.

If they do develop malnutrition at this age some of them may not be able to catch up the growth and development when they are older.





#### 4. Ask participants

- “What can happen in *INSERT NAME OF PLACE* if we were to make these changes?
- “How many beans will we have in the piles of xx and yy and zz?”

“There is something you can do to start to make this change happen – tomorrow.”

“I want you to think of one person who you will teach something you learnt today; and then to share this information with the group if you are happy to do so.”

#### 10.4 TOPICS: NUTRITION DURING THE LIFECYCLE (TIMES OF SPECIAL NEEDS)

##### *Learning Objectives:*

By the end of this session participants will:

- ✓ Understand that women and children have different nutrient needs at different stages of their lives.
- ✓ Recognize that if women and children do not get the foods needed to supply these nutrients they are at increased risk of developing undernutrition

##### 10.4.1 Session Outline

Content	Items needed	Methods
Special food needs of pregnant and lactating women, babies and young children.	Flip chart illustrations (from MoHS or UNICEF IYCF chart <sup>1</sup> ).	Brief presentation and discussion.  Record of answers from game for final report.

##### 10.4.2 Summary of Information

###### Pregnancy

- Pregnant women must follow the guidelines for healthy eating.
- Pregnant women should eat an extra small meal or big snack a day.
- Pregnant women should include animal and milk foods a few times each week.

###### Lactation

- Women who are breastfeeding must follow the guidelines for healthy eating.
- Women who are breastfeeding should eat an extra portion of starchy food at each meal and should eat two extra snacks a day.
- Women who are breastfeeding must drink lots of clean water every day.

###### Babies less than 6 months of age

- From birth until the age of 6 months babies need only breastmilk. This supplies all the water and nutrients that they need.

<sup>1</sup> Suggested that these drawings are converted into line drawings, in the style of artwork for other illustrations in this programme, but clearly repeating the same messages as the source material.

- Young babies who receive only breastmilk are more likely to be healthy and grow well than those who receive no breastmilk, or who are given breastmilk and other foods and liquids.

#### Babies and young children (complementary feeding)

- Breastmilk continues to be an important part of a baby's diet from 6 months until 24 months and beyond.
- At six months babies must start to get a variety of soft food, several times a day.
- The amount and variety of food must be increased each week, and the texture changed to lumpy then gradually to family foods.
- Everything must be very clean when food is prepared for babies and young children.  
Caregivers must wash their hands with soap and water before preparing food and before feeding babies and young children.  
Young children must have their hands washed.

#### **10.4.3 Exercise Summary**

1.	Knowledge evaluation game.	Using standard questionnaire to determine baseline knowledge.
2.	Facilitated discussion. Food needs of pregnant and lactating women.	
3.	Food needs of babies and small children.	
4.	Conclusion.	Repeat of standard questionnaire and discussion of questions; so as to reinforce main messages.

#### **10.4.4 Exercise**

##### **1. Knowledge evaluation game**

Ask participants to sit in a circle, facing outwards (so they cannot see each other).

Explain that you are going to ask some questions; they will give a hand signal to illustrate their answer. They are to put one hand in the air with one finger if the answer is yes, and two fingers for no. If they do not know the answer they must put a fist.

(The questions are below under 10.4.5 Group quiz and information on answers. Some questions may be adapted for regional needs if required.)

When finished tell them that they are going to learn more about food needs of pregnant women and young children. When the session is finished you will go through these questions again, to discuss the answers.

#### **Guidance:**

The number of people who have indicated yes and no for each question must be recorded on the facilitator feedback sheet.

2. The discussion will start with food needs of pregnant women and women who are breastfeeding.

Show the picture and discuss the messages in the picture with the participants, the questions below can guide the discussion.

The whole group can be broken into smaller groups with discussion and feedback for each question.



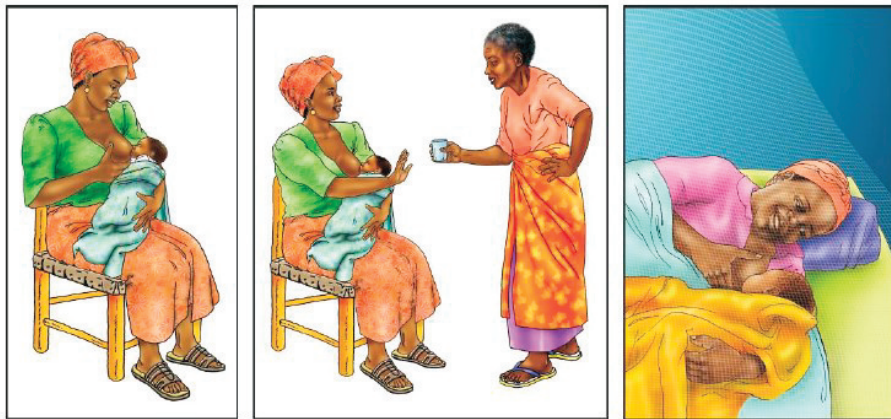
- “What do you see in the picture?”
- “What do you think are the important messages we want to teach when we show this picture?”
- “Can anyone tell us something they have learnt about healthy eating for pregnant women and women who are breastfeeding?”

Listen to the suggestions then sum up by emphasizing the main messages for this training (from Summary of Information above).

3. Show the next four pictures at one time.

They are all about feeding babies and children under the age of two years. Repeat the questions and method used above. What are the messages in these pictures?

### 0 to 6 months of age



- “The first picture shows us that a small baby must get breastmilk and nothing else. It must also get breastmilk at night.”
- “Even if anyone encourages you to give the baby something else to drink or eat you must not give it to the baby.”

### 6 to 9 months of age



- Still give your baby breastmilk
- Wash your hands
- Give porridge “Pap” but it must not be too runny
- Give the baby food four times in the day

### D 9 to 12 months of age



- The same as above, except feed the baby 5 times in the day
- Give the baby some food to hold to feed itself

### D 12 to 24 months of age



- The same as above, give the baby more food to hold, still be nearby to help the baby feed.

4. Repeat the questions given in the initial quiz, and discuss the answers.

Participants must have a chance to query any questions that they got wrong.

#### 10.4.5 Group quiz and information on answers

Participants may answer Yes (one finger), No (two fingers) or I do not know (fist).

1. Women who are pregnant must continue to eat as normal; they do not need extra food.



Answer: NO. Pregnant women need extra food. They must eat an extra small meal or big snack each day.

2. Women who are pregnant must eat more meat than men.

Answer: YES. Pregnant women need the good nutrition from meat (and other food from animals) more than men do. If the family only have a little of these foods they should be given to the pregnant woman to eat.

3. Women who are pregnant should not eat fish.

Answer: NO. Pregnant women should eat fish if they can get it. If it is easily available they should eat it several times a week.

4. Women who are breastfeeding must give the baby to someone else at night so they can sleep well.

Answer: NO. Babies must be breastfed at night and during the day.

5. The baby from a woman who did not have enough food when she was pregnant may be born too small and have health problems.

Answer: YES. Women who do not have enough food when they are pregnant may have babies who are born small. These babies may have more health problems than bigger babies.

6. Babies who are breastfed when they are small must be given water to drink on hot days.

Answer: NO. Babies under the age of six months must only have breastmilk. They do not need water, porridge or any foods until they are six months old.

7. Small babies who are being breastfed must also get porridge “Pap” to eat.

Answer: NO. Small babies must get only breastmilk until they are six months old. They must get breastmilk many times a day and at night.

8. Babies must start to eat porridge “Pap” when they are six months old.

Answer: YES. All babies must start to eat foods when they are six months old. They must also still get breastmilk. In communities where porridge “Pap” is often eaten it is a suitable food for babies. Babies should get enriched porridge “Pap” (porridge with other foods added).

9. Vegetables are important foods for children.

Answer: YES. Vegetables are important foods for all people. Children and pregnant women and women who are breastfeeding should eat at least one vegetable or fruit from group A everyday.

10. It is important to wash your hands before preparing food for young children.

Answer: YES. When you wash your hands you remove the germs that could make children sick.

**10.5 TOPICS: PERSONAL AND HOUSEHOLD HYGIENE***Learning Objectives:*

By the end of this session participants will:

- ✓ Recognize the importance of hygiene in the prevention of diseases.
- ✓ Identify key actions for implementation of good personal and household hygiene.
- ✓ Identify key actions for implementation of good hygiene for food storage and preparation.

**10.5.1 Session Outline**

Content	Items needed	Methods
Germ theory	Items for hand washing. Flip chart picture with elements for germ multiplication (water, food, warmth, time).	Presentation. Demonstration and practice of hand washing.
Role of personal and environmental hygiene to prevent diseases	Flip chart pictures of household with hygiene elements emphasized.	Discussion of picture.
Key messages for food safety	Pictures of key messages of food safety. Case study story.	Case study discussion.

**10.5.2 Summary of Information**Information about germs and how they cause sicknesses

- Germs are all around us. Some germs cause sicknesses. Germs are very small, we cannot see them.
- Germs multiply very quickly when conditions are good; they need water, food, time to multiply and they multiply quickly at warm temperatures (not at very cold or very hot temperatures).
- Germs cause illness when they get into the body.  
Some germs come from the air (e.g. germs that cause colds or TB can be spread when people cough or sneeze); other germs enter through the mouth through food, water, dirty hands or dirty utensils used for preparing food.

Ways to prevent germs from causing sicknesses

- Good hygiene helps to prevent diseases that come from germs.
- Everyone should try to prevent the spread of germs. This can be done by:
  - Washing your hands (in the way to get rid of germs) after you have been to the toilet.

- Wash your hands before you start to cook food and before you eat.
- Cover your mouth when you cough or sneeze.
- Keep the household and the environment clean to stop the spread of germs.

### Steps to safer food

- Many people get sick because the food they eat or water they drink contains too many germs. They may get diarrhoea and vomiting from food poisoning, or they may get other sicknesses.
- The people who are most sensitive to food-related sickness are young children, the elderly and people who are already ill.
- Stop germs from food from making you and other people sick. You should:
  - Keep everything clean.
  - Keep raw food and cooked food separate.
  - Cook food, especially meat, chicken, fish and eggs, thoroughly.
  - Keep food at safe temperatures, hot food must be eaten hot and cold food cold.
  - Use safe water and safe food.

### **10.5.3 Exercise Summary**

1	Explanation of germ theory.	Discussion causes of illnesses, information on germs.
2	Examples: germ multiplication with time, food, water, temperature.	Poster discussion.
3	Clean hands.	Picture of occasions to wash hands. Demonstration.
4	Personal and household hygiene.	Poster of household for discussion.
5	Food safety and food hygiene. Keep clean.	Key steps poster.
6	Case study.	Story and discussion.

### **10.5.4 Exercise**

1. Ask participants if they know what causes diseases like colds, diarrhea and TB?

The answer is germs (or any other word indicating disease causing micro-organisms).

- “We learn about germs to help us to learn how to prevent the sicknesses that are caused by germs.”

Explain that before you go further in this session to discuss what people can do to try to prevent germs causing illness in their families you will explain a bit about germs.

- Use the information from above, about germs and how they cause sickness.
- Note that some diseases that are caused by germs can be prevented by immunization e.g. measles.

2. When conditions are right germs will multiply very quickly.



This means that one germ will become two, and two will become four, and four will become eight and so on.

When there are a lot of germs present they are more likely to cause sicknesses, or to cause more severe sicknesses. Different germs cause different kinds of sicknesses.

Germs are able to multiply when the conditions are right. They do not need a male and a female germ; they multiply by dividing into two.

Germs need the following to be able to multiply:

- water                      - food                      - warmth                      - time

- “Let me use maize flour as an example.”
- “When I keep this maize flour in a container with a lid, and I keep it dry I can keep it for a few weeks.”
- “If I take the maize flour and make soft porridge I can only keep it for a few hours, not a few weeks. I have added water to the dry flour, so any germs that are there can now multiply. They will get their food from the flour.
- “When I first cook it the germs cannot multiply because the mixture is too hot, but when I let it cool down a bit they can multiply. If I eat it straight away then there is no time for the germs to multiply and reach the level where they are dangerous to my health.”

**Guidance:**

Check for understanding of the four factors that allow for rapid multiplication of germs. Use other examples if needed; such as fish, rice or cut up fruit.

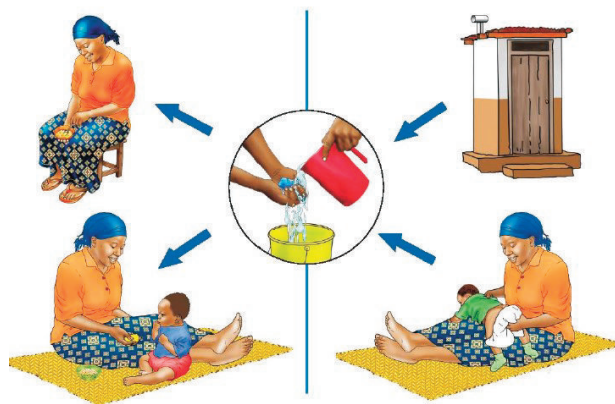
An important way to stop diseases caused by germs is to limit the number of germs that are in our environment or that get into our food.

This is done by keeping everything clean.

3. “Keeping our hands clean is an important step to prevent the spread of germs”

- “How do germs get onto our hands?”
  - Touching things that have germs on them such as pets, soil, our hair, runny noses.
  - Cleaning a baby’s bottom.
  - When we go to the toilet.
- “Can germs that are on our hands multiply on our hands?”
  - Are our hands warm? – Yes
  - Is there moisture on our hands? – Yes
  - Is there food on our hands? – Yes
  - Is there enough time? – Yes.

- “If we have just a few germs on our hands they can multiply and then reach a level where we spread germs from our hands to others and to the things we touch.”
- “The best way to prevent this is to wash our hands.”
- What are the most important times to wash your hands?”
  - After going to the toilet.
  - After cleaning a baby’s nappy.
  - Before cooking.
  - Before feeding children.
  - Before eating yourself.
  - After contact with sick people.



- “When you wash your hands it is important to get rid of as many germs as possible.”
- “This is done by making sure you wash your hands for long enough, you use soap or ash and you wash all parts of your hands.”

➤ Do a demonstration of hand washing

#### 4. Personal and household hygiene

Describe a household scene (or draw on a chart) with the following issues included: a child defecating behind a bush, a child eating a banana and feeding some to a toddler, banana skin on the ground with flies on it, an old lady washing her hands from a tippy tap as she leaves the toilet, water container which is covered, young lady sweeping, dog lying in sun with dog stool nearby.

- “Let us look at this picture of a household scene in a village. You are going to talk about it.”

Let small groups discuss and explain what they see in the picture relating to personal and household hygiene; they should mark it on the picture to remind them.

- “What do you see happening in the picture?”

Get groups to give their feedback. Then go through the points again and ask:

- Is this common practice in our community?

- Is it a good or a bad action?
- What is the reason for it being good / bad?
- If it is bad what should they do instead?

Then go through the points again and ask:

- How do you feel about people doing this?
- Why do you feel this way?
- What difficulties could this family experience to do these things?
- Are there ways to help them overcome these barriers?

Ask if anyone will be happy to share ideas of things they would like to do differently at their homes?

## 5. Food safety and food hygiene

Explain to participants that they have named many of the aspects for hygiene for the household. Now you will discuss some that refer especially to food.

For each there is a key message and they will help you think of the points that are examples for that message.

### **KEEP CLEAN**

What should be kept clean?

- Wash your hands before handling food and often during food preparation.
- Wash your hands before eating.
- Wash your hands after going to the toilet.
- Wash surfaces and equipment used for food preparation.
- Protect cooking areas and food from insects, pests and other animals.

**WHY:** Dangerous micro-organisms are found in soil, water, animals and people. These are carried on hands, wiping cloths and utensils.

Hands frequently transport micro-organisms from one place to another, so hand washing is very important.

Utensils that have been used to prepare raw meat, chicken and other meat products must be cleaned very well. These foods are often contaminated with dangerous germs. After being washed clean, they should be left to dry in the sun, or a well ventilated area – they must not be stacked or stored when damp.

The cleaning equipment, cloths and sponges must also be cleaned and left to dry. Germs grow faster in damp places.

For cleaning after a meal, remove leftover food or waste from plates before putting them in water. After washing leave dishes to air dry or wipe with a clean, dry cloth.

Protecting food preparation areas from pests

- Pests are rats, mice, cockroaches, flies and other insects. Pet animals also carry germs and pests on their fur, feet and feathers.
- Keep food covered or in closed containers.
- Keep rubbish covered and remove the rubbish regularly.

### **SEPARATE RAW AND COOKED**

- Separate raw meat, chicken and fish from other foods.
- Clean everything well after raw food has been cleaned / cut.
- Store food in containers to avoid contact between raw and prepared foods.

WHY? Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous micro-organisms which may be transferred to other foods during food preparation, storage or serving.

#### How to keep raw and prepared food separate

- Wash plates and utensils used for preparing raw foods, use clean plates and utensils for cooked and prepared foods.

### **COOK THOROUGHLY**

- Cook food thoroughly, especially meat, chicken, fish and eggs, to kill bacteria and spores.
- Bring foods like soup and stew to the boil to ensure they are hot enough.
- Reheat previously cooked food until it is hot right through. This will help to kill germs that have multiplied.

WHY? Proper cooking kills almost all dangerous micro-organisms. Studies have shown that cooking food to a temperature of 70 °C can help ensure it is safe for consumption. Foods that require special attention are minced meat, rolled roasts, large joints of meat and poultry.

#### How to cook food thoroughly

- Food must be very hot inside to kill dangerous germs and make it safe to eat. At this temperature, even high concentrations of micro-organisms will be killed.
- Follow these guidelines for foods most likely to be contaminated:
  - Cook poultry until the juices are clear and the inside is no longer pink.
  - Cook eggs and seafood until piping hot.
  - The centre of an intact piece of meat has no germs, it is sterile. Most bacteria will be on the surfaces, from the exposure to knives, boards, hands etc.
  - Reheat precooked food until it is piping hot again, so as to kill any micro-organisms that may have grown after it was stored.

**KEEP FOOD AT SAFE TEMPERATURES**

- Do not leave cooked food at room temperature for more than two hours.
- Keep cooked food hot before serving.
- Do not store food too long, even if in the refrigerator.

WHY? Micro-organisms can multiply very quickly if stored at room temperature. By keeping temperatures below 5 °C or above 60 °C, the growth of micro-organisms is slowed down or stopped. Some dangerous micro-organisms still grow below 5 °C.

How to keep food at safe temperatures

- Prepare the correct amount of food, so as to reduce the amount of leftovers.
- Keep hot food hot. Do not keep food warm for a long time after cooking, before serving it.

**USE SAFE WATER AND RAW MATERIALS**

- Use safe water or treat it to make it safe.
- Select fresh and wholesome foods.
- Wash vegetables and fruit.
- Do not use food that is damaged or rotting.
- SAFE means water and food is free from dangerous germs and chemicals.

WHY? Raw materials, including water, may be contaminated with dangerous micro-organisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods.

Tell participants that you read a story in a newspaper, and you are going to tell the story to them.

After that you will all discuss it and identify things that the family could have done differently to prevent the tragedy that happened.

**Family tragedy ruins celebration (The story can be modified to best suit the local situation)**

Jaiama Nimekoro: Yesterday members of the Yomba family were celebrating the traditional initiation '*Poro Society*' of their oldest son. This celebration turned into a tragedy when traditional dancers and family members started to feel the effects of the meal that they had shared. Food poisoning is to blame for the death of 2 family members,

the hospital admission of a further 14 and severe diarrhea, being managed at home, of another 20 family members.

Finda Yomba is one of the lucky ones who escaped illness. “I am a vegetarian now, so I do not eat meat. I had some “run belleh”, and was planning to look for something else to eat later. I think it must have been the meat that made them sick”.

Doctors at the Jaiama hospital confirm Finda’s suspicion. “The symptoms in the patients who presented for admission do indicate that this is due to something that they had eaten. Samples have been sent for testing,” said the doctor in charge (Dr. Bernard), “it is tragic that two family members lost their lives due to this poisoning. The youngest traditional dancer and the “Soko-Bana” both passed away hours after admission.”

Health inspectors are investigating and samples of leftover food have been sent for testing. Results will be available later this week. One inspector, who asked not to be named as this is his opinion, gave “The Times” several possible factors that could have contributed. The actual cause or causes will be revealed as soon as possible.

Ask participants to identify possible causes of this food poisoning. Use the five key points to guide the discussion. The possible answers include:

#### **Keep clean**

- Those who prepared the food had not washed their hands with soap /ash and water.
- The containers used for the meat were not clean.
- Flies or other insects settled on the cooked meat and contaminated the meat with germs from their bodies. These germs then multiplied to dangerous levels.

#### **Separate raw and cooked food**

- The cooked meat was placed into the dish that had been used for raw meat and was contaminated by uncooked meat juices. The germs in the meat juices are killed when the meat is cooked, but the uncooked juice is still contaminated.

#### **Cook thoroughly**

- The meat was not well cooked and thus bacteria were not killed.

#### **Keep food at safe temperatures**

- Not all the meat was eaten straight after it was cooked, so it stayed warm (not hot) for a long time, then it was eaten later. Bacteria then had a chance to multiply because the food was in the danger zone for a long time.

#### **Use safe water and raw materials**

- The meat was not sourced from a reliable supply and was heavily contaminated with pathogens (disease causing micro-organisms).

Ask participants if they can think of a reason why the youngest and oldest died?

- Some people are more at risk for food poisoning than others. Young children do not have fully developed immune systems, and thus their bodies cannot fight

infection fully. The elderly are at risk as their immune systems are no longer functioning fully.

- The severity of the illness would be influenced by the health of the person.
- Someone with a compromised immune system would be more likely to get severely sick than someone who is healthy.
- Someone who had a large portion would take in more germs than others, and will thus be more likely to be sick.

## 10.6. TOPICS: CONCLUSION

### *Learning Objectives:*

By the end of this training module participants will be able to:

- ✓ help FFS members make changes to their daily activity, food production, and daily life to contribute to healthy eating and a healthy lifestyle
- ✓ recognize their role to contribute to improved health of communities by:
  - Production of variety of foods, including those that supply key nutrients
  - Encouraging consumption of foods needed by the family
  - Guiding people in good personal, environmental and food hygiene.
  - Storage and preservation of food to preserve quality and safety

### *Guidance:*

The objective of this session is not one of learning for participants, but rather for feedback to be given to facilitators.

#### 10.6.1 Session Outline

Content	Items needed	Methods
Post training knowledge evaluation.	Questionnaire.	True / false / I do not know circle quiz.
Summary.	Teaching aid from each section.	Feedback discussion.

#### 10.6.2 Activity

1. Ask participants to sit in a circle facing out (as was done previously).

Develop one or two questions and answers from each of the five sessions above and ask participants to give answers by indicating one finger, two fingers or a fist (as earlier described above).

Record the answers.

2. Use a teaching aid from each section to ask participants to recall main messages and actions from each learning area.

As each section is covered revise the question from above on that section, and give the correct answer.

Ask participants to give feedback on whether or not they found the content useful, and whether or not they will change something they do in the future based on this.

3. Thank the participants for their attendance and encourage them to continue to learn about actions for improved health and development for their families and communities.

**Reference:**

This training module has been adopted from the draft version of the Farmer Field School Manual on Nutrition, FAO Mozambique - February 2013



## END NOTE

Farmer Field Schools represent a significant step forward in agricultural education and extension. Traditional top-down technology transfer systems have a role in some aspects of agriculture development but human capacity building required for creation of independent commercialized farmers and their organizations.

Farmer field schools provide specific technical and organizational skills, analytical skills and practice together with basic group assets such as trust and confidence required for joint enterprises.

This Farmer Field School Manual provides guidance for Extension Workers to run FFS focusing on methods that are practical and readily replicable. The Manual is written in clear and simple easy-to-understand language.

Finding the “right way” of doing farm business means not only building on good science and technological methods, but also fitting into local ecological, social, economic and historical contexts. In other words, all stakeholders need to participate and gain ownership of the process.

This Manual was developed by FAO Sierra Leone in cooperation with the Rural Extension Division of the Ministry of Agriculture, Forestry and Food Security (MAFFS), the District Agricultural Offices and directly supported by the Programme Management Unit of the Smallholder Commercialization Programme (SCP) – Global Agriculture and Food Security Programme (GAFSP) team.



# MANUAL FARMER FIELD SCHOOL FOR EXTENSION WORKERS

