

Farm planning and management for trainers of extension workers

TRAINING
MATERIALS FOR
AGRICULTURAL
MANAGEMENT,
MARKETING
AND FINANCE

3

ASIA



Module 1 FARM MANAGEMENT



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Module 1
FARM MANAGEMENT

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FARM MANAGEMENT

Unit 1.1

The farm and its enterprises

Session 1.1.1 What is a farm? (75 minutes)

Session 1.1.2 Understanding farm enterprises
(15 minutes)

Unit 1.2

Farm management as a way to increase profit

Session 1.2.1 What is farm management? (120 minutes)

Session 1.2.2 Why is farm management important?
(15 minutes)

Session 1.2.3 What are farmers' objectives? (30 minutes)

Session 1.2.4 How do farmers decide? (15 minutes)

*This volume has been designed
as a complete working package which includes all components
of the training programme needed for Module 1.*

*The "trainers information box",
at the beginning of each session, lists the handouts,
training slides and exercises needed for that segment of the course.
The trainer's guide, in the section "steps for instruction",
suggests a sequence for the use of these training materials.
Mini-versions of all slides are provided at the end of each session.*

FARM MANAGEMENT

The farm is a physical and socio-economic unit composed of the farm family. It consists of enterprises that compete for limited resources. The farm resource base is described in terms of land, labour and capital. The farmer is a grower as well as a manager. There is a need for farmers to have better farm management skills especially during times of rapid economic change.

By recognizing farmers as managers, we can understand better how and why they make certain decisions. It is important that as extension workers interact with farmers they understand both the farm environment and the decisions that farmers make so that they can provide relevant and meaningful advice.

The farm and its enterprises

This unit describes the farm and its enterprises. The farm is both a production and social unit. It consists of a resource base described in terms of land, labour and capital. These are often called inputs. The resources produce different farm products. This is done by converting farm inputs into outputs. Most farmers have a range of different products that they can produce. The farm is also a social unit comprising the farmer and the farm family. The farm has a strong interrelationship with the farm household. It is important that extension workers understand this broad concept of a farm.

What is a farm?

The concept of the farm is of central importance in farm management. Its essential feature is its productive resource base. This provides the inputs necessary to produce farm outputs or products. The resources make up the physical boundary of the farm. The farmer and farm family also form a social boundary where decisions are taken. So the real boundaries of the farm consist of both physical and social aspects. Together they form the farm household system that includes the decision-making unit (the farm family), the resource base and crop and livestock enterprises.

An understanding of what constitutes a farm and its enterprises is essential if farming is to be treated as a business. All aspects of the farm, its resources and enterprises have to be well-managed in order to increase productivity and profitability. The concept of a farm in this broader sense is very important for extension workers to understand.

Objectives



The purpose of this session is to assist the participants to visualize the physical boundaries of the farm and its household and the basic spatial arrangements of a farm common to their experience. At the end of this session, the participants are expected to have a better understanding of what constitutes a farm in terms of its physical and social boundaries. The participants are also expected to be able to recognize the farm enterprises. In this way they will gain a broader understanding of the whole system in which the farm operates.

Key points

1. A farm is a basic unit consisting of the physical boundary of the land and the social household unit. The physical unit of a farm business is composed of land, labour and capital assets.
2. Farm enterprises utilize inputs to produce outputs. Sometimes the output of one farm enterprise is the input of another.

Steps for instruction



1. Distribute Handout 1.1.1 (What is a farm?) before the session.
2. Divide the participants into groups. Ask each team to use their experiences as extension workers to identify and describe a different type of farm. Each farm should have a different main enterprise. Allow 15 minutes for discussion.
3. Distribute a posterboard, including coloured pens or crayons, to each group. Ask the groups to draw their selected farm, including the resource boundary and the farm enterprises.
4. Reassemble and give each team an opportunity to report to the class. Discuss the following features of each selected farm:
 - (i) What is the area of each?
 - (ii) What are the enterprises held?
 - (iii) How are the different enterprises interrelated?
 - (iv) What resources do these farms use?
 - (v) Are these farms mainly food production oriented, cash oriented or both? Allow 15 minutes for discussion.
5. Following the discussion, proceed to formally define a farm. Explain that a farm is composed of several enterprises, each with its own inputs and outputs. Show Slide 1 (The farm defined) to illustrate.
6. Show Slide 2 (Resources or factors of production) and discuss. During the discussion ask the participants to provide examples.

Evaluation: (i) review objectives in relation to key points, (ii) present drawings of typical farms and the explanations by each group.

Notes

What is a farm?

A farm is a piece of land on which a farm household undertakes agricultural activities as part of its livelihood. In addition to the land itself, a farm may include structures erected on the land, such as wells, irrigation channels, fences to control livestock, buildings to house livestock or to store farm produce, and a house in which the farm family lives. The farm also includes the crops, livestock and other enterprises to support the livelihood of the farm family. Some of the operations conducted on the farm include the cultivation of fields, the tending of orchards and vegetable gardens, the raising of livestock, as well as combinations of these activities.

Farms in Asia vary in size from small holdings of less than a hectare involved in subsistence production to large plantations covering thousands of hectares. The common feature of the farm is its "unity of management". A good understanding of the farm is of central importance to farm management.

In order to grow a crop or raise livestock, farmers need land and water, labour and capital. These are called resources and sometimes "factors of production". Resources are limited and farmers face problems of choice as to how to combine the resources they have in the best way and at the lowest cost in order to improve their income. Factors of production are described below.

Natural resources. These can be likened to "gifts of nature". They include land, water, soil and rainfall. These are resources that do not come from "human effort".

Land. A typical farm family may own or rent some land for cultivation. The farmer may also have land around the homestead that could be used for growing food, fruit or forage crops. Many farmers have the right to use what is called "communal land". This is land left aside as forest or for cattle grazing.

A farm consists of resources and enterprises

Resources or factors of production are limited

Water. Farmers will have some access to water. These might be springs, dams, wells and rivers or water collected from rainfall. This water may be on the land used by the farmer or it may be from a communal source.

Labour resources. This is human effort. It is needed on all farms. Farmers may have three different sources of labour: (i) the farm family (family labour), (ii) hired labour, (iii) labour provided through cooperation between members of the community where the farmer lives. A farmer may use any or all sources of labour on the farm, depending on the situation. The total effort from labour is provided by people using their skills and the time available.

Capital resources. These are simply resources that are produced as a result of "human effort". Land and labour can often be made more productive if the land is improved. Sometimes land is cleared, cultivated and even irrigated and drained. Supplies of water are often increased by the construction of dams, storage tanks and canals. Improvements on the land and the skills and knowledge obtained by the people are a form of capital.

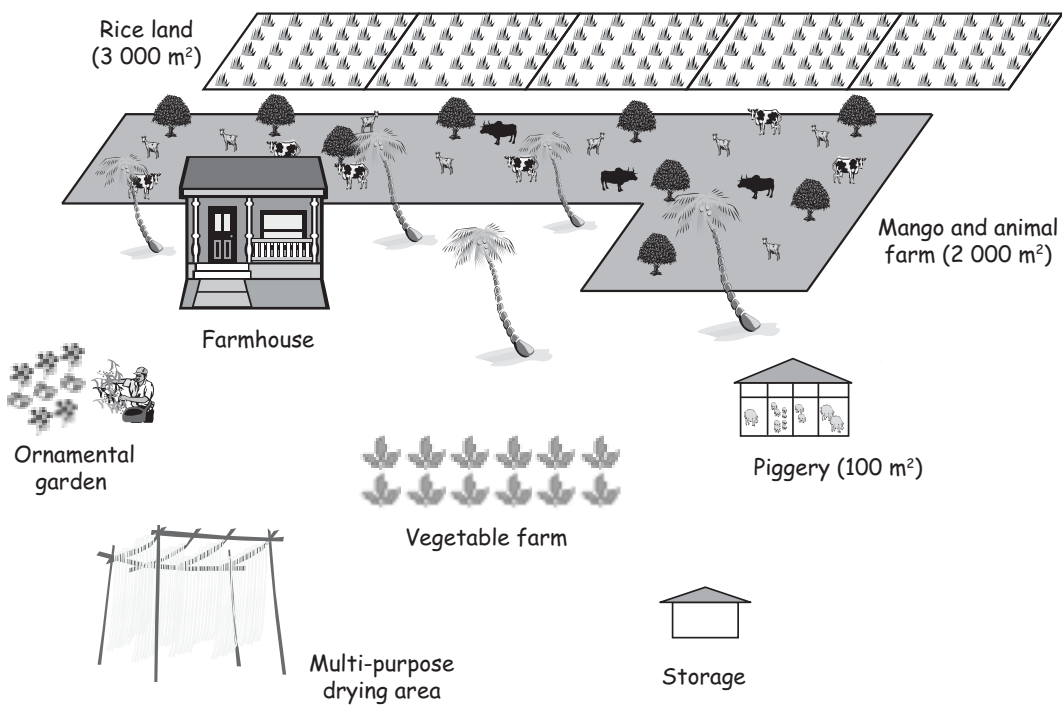
Capital can be divided into two types: durable and stock. Durable capital is made up of items that last for a long time, such as machinery, equipment and buildings. Stocks are inputs and materials, such as cash, seeds, animal feed and fertilizer that are usually used within a season.

Cash is used by farmers both small and large. However, small-scale farmers often use very little cash capital in farming. Most of the capital on their farms is found in kind. These include livestock, tools, equipment, buildings, land improvement measures, as well as stocks of seed, fertilizer and animal feed. Capital is an important resource for all farmers.

Farm resources have two characteristics: (i) they are scarce, (ii) they have alternative uses. The quality and quantity of the resource, the techniques employed and the skills used in obtaining the best possible combination all help to determine the quality and quantity of the final product. They all contribute to production by acting together.

Resources have alternative uses

Figure 1.1 – A typical farm layout



Notes

Training slides
for Session 1.1.1
What is a farm?

1 The farm defined

A farm is a piece of land on which a farm household undertakes agricultural activities as part of its livelihood

A farm may include structures erected on the land such as wells, irrigation channels, fences, buildings for livestock and storage, and a house for the farm family

The farm also includes the crops, livestock and other enterprises (e.g. vegetable gardens, orchards) which are conducted on the farm to support the livelihood of the farm family

Understanding farm enterprises

This session provides trainees with a definition of the farm enterprise and an understanding of the relationship between inputs and outputs. Different types of farm enterprises are also described.

Objectives

At the end of this session the participants will be able to:



- define a farm enterprise;
- understand the different types of farm enterprise.

Key points

The farm enterprise is defined. It is noted that a number of outputs can be produced from different farm enterprises, which fall into three broad categories:

- complementary enterprises;
- supplementary enterprises;
- competitive enterprises.

Steps for instruction



1. Distribute Handout 1.1.2 (Understanding farm enterprises) among the participants before the session.
2. Discuss with participants the different types of enterprises found on the farms that they are familiar with.

Understanding farm enterprises

Definition of enterprise

Farm enterprises are the crop and livestock production activities associated with the farm. These activities include the production of rice, potatoes, yams, beans and livestock.

Generally a farm is made up of several enterprises. Each farm enterprise has its own inputs and outputs. Inputs are the scarce resources used in the production process: the use of the land, the labour of farmers and their families and any workers that may be hired, the mental effort put into planning and managing, the seed for the crops and feed for animals, fertilizers, insecticides and other supplies, tools and implements, and draught livestock or tractors. All the things that go into agricultural production are inputs. The outputs are the crop and livestock products the farm produces.



*The farm
utilizes inputs
to produce
outputs*

Enterprise types

Sometimes the output of one farm enterprise can also be the input of another farm enterprise. For example, a farmer might produce rice, which is not only an output that can be sold to other farmers but also an input for livestock feed. Farm enterprises can be divided into three types: (i) competitive, (ii) supplementary, (iii) complementary enterprises. Each of these categories has different qualities.

Training slides
for Session 1.1.2
Understanding farm enterprises

3 Definition of enterprise

**Farm enterprises are the crop
and livestock production activities
associated with the farm**

Generally a farm is made up of several enterprises

Each enterprise has its own inputs and outputs

**Sometimes the output of one enterprise
is an input for another**

Farm management as a way to increase profit

Farming – as any business – requires management. Management involves making decisions on how to use the resources available to the farmer to produce crops or livestock, or other livelihood activities. Farmers are continually being exposed to changes that compel them to adjust their farm enterprises to increase profitability and become more competitive. These changes stem from the market as well as the development of new technologies and policy changes. They affect the type of enterprises held, the quantity of inputs and materials required and the method and destination of produce sold. Farmers need better farm management skills to respond to these changes.

This unit examines some of the common problems faced by farmers. It illustrates how farm management involves better decision-making in order to address questions such as: (i) Where and to whom to sell produce? (ii) What enterprises to manage? (iii) How best to allocate resources? The unit identifies the qualities of a good farmer, examines factors causing changes in the farmer's environment and underlines the common principles of farm management when undertaking the key farm management functions (diagnosis, planning, implementation, monitoring and evaluation).

What is farm management?

This session highlights the role of the farmer as cultivator or livestock producer and manager. Just like any business, farming requires management. The common problems faced by farmers are identified. This is the starting point for producing a definition of farm management.

It is useful to identify the type of problems that farmers as managers face. Farmers need to possess the skills to be able to respond to these issues and ensure that their farm business is competitive. A good farm manager must be able to recognize these problems and identify the appropriate solutions to increase farm profitability.

Objectives

At the end of this session the participants should:



- understand the concept of farm management and recognize its importance;
- identify and discuss some of the more important functions of farm management;
- recognize the importance of setting objectives;
- understand the steps involved in the decision-making process.

Key points

1. Some of the common problems facing farmers.
2. What is farm management?
3. The risks involved in farming.
4. The limited resources available to the farmer.

5. Some of the typical decisions farmers make on their farm.
6. The qualities of a good farm manager.
7. Factors causing changes in the farmer's environment.
8. Common stages of management (diagnosis, planning, implementation, monitoring and evaluation).

Steps for instruction



1. Distribute Handout 1.2.1 (What is farm management?) among the participants before the start of the session.
2. Facilitate group discussions on the common problems faced by farmers. Ask participants to think about farmers with whom they collaborate in their day-to-day work and recall some of the problems that these farmers face. These might include:
 - lack of capital;
 - high cost of inputs;
 - limited processing technologies;
 - high interest rates of lending institutions;
 - low product prices;
 - uncontrollable weather conditions;
 - occurrence of pests and diseases;
 - underdeveloped marketing system;
 - lack of infrastructure such as farm to market roads;
 - fluctuating prices of farm products.
3. Training exercise 1 (Common problems facing farmers) should be distributed. The problems identified should be ranked in order of importance. The participants working in groups should categorize those problems that are farm management related and within the capacity of the farmer to address. Finally the trainees should identify ways of dealing with these problems.

4. Training exercise 2 (What is farm management?) should be distributed. Participants in groups should be asked to list the main tasks in which farmers are involved. Brainstorm with participants through a question and answer session or alternatively have the trainees work in pairs or small groups.
5. Show Slide 5a (Day-to-day decisions of farm managers) and encourage the participants to develop their own definitions of farm management based on these kinds of decisions. Now discuss with the class some formal definitions of farm management with the assistance of Slide 5b (Some definitions of farm management).
6. Distribute Training exercise 3 (Qualities of a successful farmer) among the participants. Begin by introducing the notion of a "good" farm manager of a "successful" farm business. Initiate group discussions on the qualities that a "good" manager should possess. Some of the characteristics are likely to include:
 - ability to self-organize and motivate people;
 - good understanding of technical issues;
 - ability to communicate with other people;
 - ability to take decisions;
 - willingness to learn new technologies;
 - innovative enterprising and resourcefulness.

Prompt the discussion to cover some of these attributes. Ask each group to present their results to the class. This should be followed by discussion.

7. Note the difference between the farm manager and the farmer-manager. The former only manages the farm while the farmer-manager manages both the farm and the household. Discuss the idea that farm management is more complex than managing an industrial enterprise, note the risks involved in farming and the limited farm resources available to the small-scale commercial farmer. A good farmer-manager should know how to combine these resources in an effort to achieve the business goals.

What is farm management?

The role of the farmer is twofold. The farmer is at the same time producer and manager. The first role of the farmer is to take care of plants and livestock in order to produce useful products. For crops this includes the preparation of the seedbed, the sowing of the crop, the elimination of weeds, the management of soil moisture and measures for the control of pests and diseases. For livestock this includes herding and feeding, protecting from diseases and where necessary providing housing.

Another role of the farmer is that of manager and decision-maker. Where the skills of production are mostly physical, the skills of management are largely mental backed up by will. They involve making decisions or choices between alternatives. The decisions that farmers must make as managers include choosing between different crops that might be planted in each field, choosing the livestock to be kept on the farm, and deciding how to distribute available labour time among different tasks, especially at times of the year when several tasks need to be carried out concurrently. They also involve choices as to what and how many draught animals need to be kept for work in the field.

As agriculture becomes more market driven and commercial in nature, the farmer must develop skills in buying and selling. Farmers must decide whether or not to purchase improved seeds, fertilizers, pesticides and new implements. They must decide whether or not to employ additional labour in farming. They must decide how much of each crop to be kept for home consumption and how much to be sold. They must decide when to sell the produce and to whom to sell it.

*The farmer
is both
producer
and manager*

*As manager
the farmer
needs to
develop new
skills*

*Farm
management
decisions
are diverse*

Some of the day-to-day decisions taken by farmers as managers include:

- making choices of different types of crops and livestock activities;
- using available resources to the best advantage in production and post-harvesting operations;
- selecting the most appropriate technology to use;
- deciding where and to whom to sell produce and at what prices.

*Definitions
of farm
management*

Some common definitions of management include "making decisions to increase profit", "making efficient use of available resources", "using, managing and allocating resources". These decisions imply the following:

- *first*, the existence of a goal or goals;
- *second*, that there are resources that can be used or allocated;
- *third*, that the resources to be used or allocated have more than one possible use.

Farm management is about producing with limited available resources (e.g. land, labour and capital). Farmers need to know how to combine these resources in the best possible way in order to assure the best outcome. They require improved management skills to become more competitive as farming becomes more market driven. Farmers need to develop managerial skills so that they are better equipped to take advantage of opportunities and to make their farms as productive as possible while profits from farming increase.

The farmer, however, is also a member of a family and the local community. While most of the decisions related to farming are made by the individual farmer, decisions are made as part of a family. There is a division of labour within the family and different farming tasks are often carried out by different members. But the ways in which these tasks are divided between family members vary from one culture to another. The farmer desires what is best for all members of the farm household, and they have a direct influence on the decisions taken. Nevertheless, the desire of the farmer to secure a better living for the family is a compelling factor to improve the profitability of the farm business.

Successful management of the farm requires the farmer to have the following qualities:

- the ability to organize and achieve specific goals and targets set by the farm household;
- a good understanding of technical issues involved in the production and marketing of farm products;
- the ability to communicate with people to obtain good information;
- the capacity to make informed and relevant decisions.

Individual farmers may already possess some or all of these qualities. However, in order to achieve their desired objectives, the farmer must develop marketing and production plans and make estimates on future events and forecasts. They also need to adapt their decisions to the changes that regularly occur in the broad environment within which farming takes place. Farmers require the skills and knowledge to adapt effectively to external changes and ensure greater competitiveness.

The farmer and the farm family is the unit of decision-making

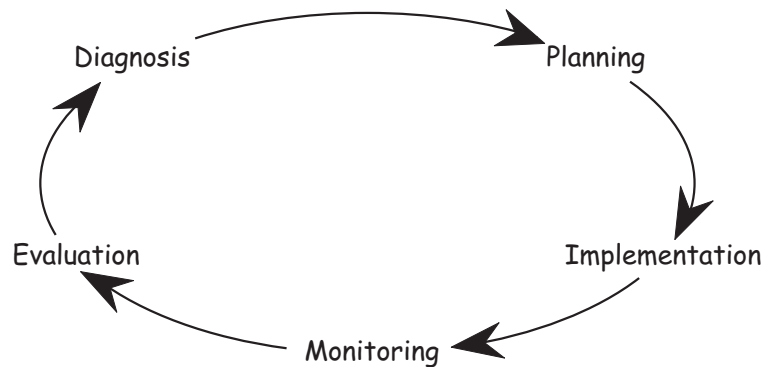
Qualities for successful management sometimes need to be acquired

Farm management takes time and work, and this is just as critical to success as the planting, growing, harvesting and marketing of a crop or a livestock product. Good farmers need to learn from their day-to-day experience and recognize their mistakes, become accountable for their actions and be willing to change their thinking based on new information.

The common functions of management that help farmers deal with changes are shown in the diagram and described below.

Figure 1.2 – The functions of farm management

*Farm
management
is a cycle
of decisions*



Diagnosis. This involves analysis of the current situation of the farm and its enterprises and identifying the constraints and opportunities to increase profitability. It entails analysing the causes of problems and identifying ways of overcoming them. Diagnosis is conducted for a single farm enterprise or alternatively for the whole farming operation.

Planning. This is considered the most fundamental and important principle. It entails deciding on a course of action, policy and procedure, and assessing the future physical and financial performance for each enterprise and for the farm as a whole. Plans are prepared based on resources available and on personal objectives.



Implementation. Plan implementation includes the purchase of the inputs and materials necessary to put the plan into effect and overseeing the process. This is a very important function within the farming context because in dealing with crops and livestock, the farmer is faced with a large number of daily decisions that need to be taken.

Monitoring and evaluation. This involves checking on the actions and progress achieved. Monitoring implies not just scrutiny of the progress of some change in the farming pattern but also checks on the whole system over time. Monitoring is a tool for evaluating the physical and financial performance of the farm business. The results of monitoring are used as inputs in making decisions on the day-to-day activities of the farm.



Evaluation is used to assess the outcomes and impact of the farm business. Evaluation involves making comparisons of the farm business performance over time and between farms. The results are used to identify strengths and weaknesses. The process is a cycle.

Table 1.1 — Overview of farm management decision support tools

Tools	Skills required	Data requirements	Enterprise level			Farm level		
			Diagnosis	Planning	Monitoring	Diagnosis	Planning	Monitoring
Constraints analysis	Basic	Basic				X		X
Enterprise budgeting	Basic	Moderate	X	X	X			
Partial budgeting	Advanced	Complex	X					
Labour profiles	Basic	Moderate				X	X	X
Cash flow	Basic	Complex				X	X	X
Whole farm planning	Advanced	Complex					X	X
<i>Investment appraisal</i>								
Rate of return	Basic	Basic		X			X	
Discounting	Advanced	Complex		X			X	
Sensitivity	Basic	—	X	X	X	X	X	X

Table 1.2 — Objectives, strengths and weaknesses of farm management decision tools

Tools	Objectives	Strengths	Weaknesses
Constraints analysis	Diagnose the constraints on the farming system and formulate strategies that build on opportunities	<p data-bbox="411 936 435 1265"><i>Diagnostic and budgetary tools</i></p> <ul style="list-style-type: none"> • The exercise is participatory and can be conducted without the collection of quantitative data • It is a comprehensive whole farm diagnostic tool that takes into account all factors that affect farm profitability • Relatively easy to apply 	<ul style="list-style-type: none"> • Requires external facilitation • A general weakness with some participatory methods is that they seek to gain consensus among participants • Effectiveness depends largely on the skills of the trainer
Enterprise budgeting	Diagnose enterprise profitability; select between enterprises for planning and monitor enterprise performance (gross margins, net margins)	<ul style="list-style-type: none"> • Gross margin is simple to use • Data requirements are generally minimal • It can be used during all stages in the management cycle from planning to monitoring 	<ul style="list-style-type: none"> • Often difficult to forecast yields and prices especially when farmers are considering introducing new enterprises • Trainers may face difficulties in assigning values for family labour • Sometimes different conventions are used for allocation of fixed costs • Need for clarity on definitions and methods of analysis • Accuracy is needed to relate gross margin to a full production period (e.g. with products that extend beyond a one year time frame: banana, pineapple, livestock) • Difficulty in demarking costs as fixed and variable. This requires some judgement (e.g. between casual and permanent labour) • Difficulty allocating variable costs between joint enterprises (e.g. for intercropped enterprises, and where forage or pasture is consumed by more than a single livestock species) • Requires knowledge by the decision-maker of the most limiting resource (i.e. whether to use return per area of land, per person day)

Table 1.2 – Objectives, strengths and weaknesses of farm management decision tools (continued)

Tools	Objectives	Strengths	Weaknesses
Partial budgeting	<p>Estimate the potential profitability as a result of small changes in technologies of farm enterprises. It gives an idea whether a change is likely to be better or worse in terms of profitability as compared with an existing situation</p>	<p><i>Diagnostic and budgetary tools</i></p> <ul style="list-style-type: none"> • Relevant and useful to assess simple changes • Data requirements are minimal • Accounting is usually straightforward and accurate 	<ul style="list-style-type: none"> • Difficulties in determining all factors that could affect the change • Not always possible to quantify and include in the budget all the factors bearing on the decision • Sometimes confusing to set out the partial budget and avoid double counting • Open to errors in computation
Labour profiles	<p>Help farmers assess whether the supply of labour available to the farm is at least equal to the demands imposed by a given plan</p>	<ul style="list-style-type: none"> • It provides a visual appraisal of labour for individual enterprises and the farm as a whole over different periods of time • It can be approached in a participatory way as a qualitative tool • Provisions can also be made for gender differences • It is a straightforward task to construct a labour schedule 	<ul style="list-style-type: none"> • Demanding of data and may have to rely on farm records • Often difficult to differentiate between the performance of different family members and the demands of the jobs performed on the farm • Difficult to account for seasonal types of work

Table 1.2 — Objectives, strengths and weaknesses of farm management decision tools (continued)

Tools	Objectives	Strengths	Weaknesses
Cash flow	Assess the flow of money into the farm from sales and the flow of money out of the farm through purchases and other payments	<ul style="list-style-type: none"> Useful in determining the financial situation of the farm household as a whole An important tool that complements farm and enterprise profitability Can be conducted as part of a participatory exercise Is straightforward and easy to conceptualize and apply 	<ul style="list-style-type: none"> More useful on a household level than enterprise level Sometimes it is difficult for a family to estimate the sources and uses of cash by recall The information may need to be collected through record keeping Often difficult to estimate household expenses and revenues Respondents often overestimate expenses and underestimate costs
Rate of return	Make decisions about whether or not to buy a capital asset	<ul style="list-style-type: none"> Concerned with a common and important farm management decision Minimal data requirements Easy to calculate 	<ul style="list-style-type: none"> Does not take into account unevenness of cash flows over time Arbitrary depreciation charges may distort time distribution of actual cash flows Discriminates against short-term investments if return on initial capital is estimated and against long-term investments if average capital is used

Diagnostic and budgetary tools

Table 1.2 – Objectives, strengths and weaknesses of farm management decision tools (continued)

Tools	Objectives	Strengths	Weaknesses
<i>Investment appraisal</i>			
Payback	Make decisions about whether or not to buy a capital asset	<ul style="list-style-type: none"> Concerned with a common and important farm management decision Simple to use and understand Requires minimal data Useful for investments where more distant future returns uncertain 	<ul style="list-style-type: none"> No account taken of distribution of net cash flows during payback period No account taken of subsequent profitability No account taken of other aspects of the investment decision (risk, salvage value, size of investment)
Internal rate of return	Make decisions about whether or not to buy a capital asset	<ul style="list-style-type: none"> Concerned with a common and important farm management decision that deals with the time value of money Rates of return are easy to understand and apply Useful to use to evaluate a single investment 	<ul style="list-style-type: none"> Complex to understand the arithmetic Need to understand when best to apply this method <i>vis-à-vis</i> others Need to set appropriate discount rate for comparison; this is sometimes difficult Requires a negative net cash flow at the outset Application could be laborious as it depends on trial and error Data requirements higher than with undiscounted methods and requires good estimates of future costs and benefits
Net present value	Make decisions about whether or not to buy a capital asset	<ul style="list-style-type: none"> Concerned with a common and important farm management decision, deals with the time value of money Useful to compare competing farm investments Easier to calculate than IRR Not upset by negative cash flow 	<ul style="list-style-type: none"> Complex to understand the arithmetic Need to understand when to best apply this method <i>vis-à-vis</i> others Difficulties in selecting appropriate interest rate for discounting Data requirements are higher than with the undiscounted methods and requires good estimates of future costs and benefits

Unit 1.2 – Training exercise 1 Common problems facing farmers

Tasks

Participants working in groups should categorize problems that are considered farm management related and are within the capacity of the farmer to address.

List main problems facing farmers

Rank main problems according to importance

Each group should then discuss
and agree on ways of dealing with these problems

Unit 1.2 - Training exercise 2

What is farm management?

Tasks

Trainees working in pairs or small groups list what they consider to be the main tasks in which farmers are involved. The answers should be arranged into three categories as listed below.

Planning

Implementation

Monitoring

Unit 1.2 – Training exercise 3 Qualities of a successful farmer

The aim is to think about the qualities that are required for farmers to be successful in managing their farms. Participants should draw on their field experiences, discuss these with other trainees and perform the tasks below.

Tasks

1. Brainstorm within the group and identify the qualities of a successful farmer using the table below as a guide. Some consensus should be reached on the most desirable characteristics. (Examples of some of the qualities are listed below with an indication of a format to record the rankings.)
2. Rank the qualities in order of importance in the blank column.

Qualities of a successful farmer	Ranking/priority
1. Education	
2. Age	
3. Ability to work with people	
4. Knowledge of farming practices	
5. Relevance of technical knowledge and qualification	
6. Knowledge of market and marketing	
7. Experienced in farming	
8. Has wide range of contacts	
9. Willingness to learn	
10. Innovativeness/resourcefulness	
11. Credibility	
12. Has foresight	
13. Enterprising	
14.	
15.	

Use this as background information for a class discussion

Training slides
for Session 1.2.1
What is farm management?

5a Day-to-day decisions of farm managers

**Making choices of different types of crops
and livestock activities**

**Using available resources to the best advantage
in production and post harvesting operations**

Selecting the most appropriate technology to use

**Deciding where and to whom to sell produce
and at what prices**

*Formal definitions of farm management can be based
on the decisions farmers must make*

5b Some definitions of farm management

Making decisions to increase profit

Making efficient use of available resources

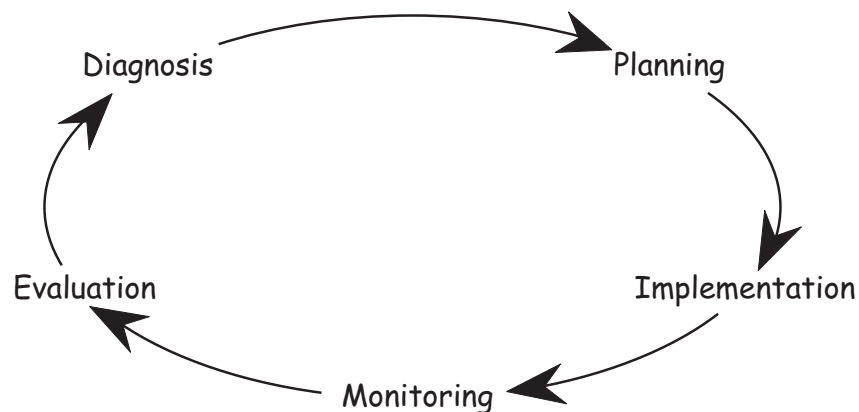
Using, managing and allocating resources

Doing something with limited available resources

Farmers need to develop their skills so that they are better equipped to take advantage of opportunities and to make their farms as productive as possible as profits from farming increase

Module 1, Unit 1.2, Session 1.2.1

6 The functions of farm management



Farm management is a cycle of decisions

Module 1, Unit 1.2, Session 1.2.1

Why is farm management important?

This session describes the changes that are occurring in agriculture and suggests the need for better farm management skills to adapt to these changes.

Farmers operate within a dynamic and constantly changing environment. It is necessary that they possess the skills to make sound farm management decisions for better farm performance.

Objectives



At the end of this session the participants should understand that farm management is valuable in providing farmers with the skills to cope with the rapid changes occurring in agriculture.

Key points

1. The market-related factors that cause changes in the farmer's environment are: (i) changing prices, (ii) changing resource availability, (iii) changing technologies.
2. While farmers as decision-makers are able to control the use of their own resources, they cannot control factors and conditions surrounding them.
3. Improving farm management skills is the best way to prepare farmers to cope with changes in agriculture.

Steps for instruction



1. Distribute Handout 1.2.2 (Why is farm management important?) before the session.
2. Explain that farmers operate within a dynamic and constantly changing environment, and although farmers as decision-makers are able to control the use of their own resources, they cannot control factors and conditions surrounding them.
3. Discuss the changing environment within which farmers work. Conduct a brainstorming session with participants on the type of changes that are occurring and the sources of change. Encourage the participants to provide examples.
4. Bring to the attention of the participants that the changes occurring are linked primarily to market-related factors: (i) changing prices, (ii) changing resource availability, (iii) changing technologies. During the discussion show Slide 7 (Changes in farming practices).
5. Refer again to the functions of farm management (diagnosis, planning, implementation, monitoring and evaluation) from the previous session. Discuss how these aspects of farm management can help farmers deal with a constantly changing environment.

Evaluation: (i) review farm management in relation to key points, (ii) refer to Handout 1.2.2, (iii) ask the participants to give their own examples of the factors discussed.

Notes

Why is farm management important?

Although farmers are able to control the use of their own resources, they cannot control the factors and conditions surrounding them. They have to constantly assess the potential benefits of technologies and reassess the relationship between inputs and outputs. When new technologies are introduced, increases in production take place, and a larger portion of produce reaches the market.

In this event, market prices may fall and affect the relationship between inputs and outputs. Farmers have to respond to these changes effectively. Improving the management skills of farmers is the best way to prepare them to adapt to and cope with the external changes that affect agriculture.

Some of the changes are linked primarily to the following factors:

- changing prices;
- changing resource availability;
- changing technologies.

Changing prices

Prices of inputs and outputs are constantly changing. It is likely that a change in the price of an output (product) will affect the overall profitability of the farm business. A high cost of inputs without a corresponding increase in the price of outputs will translate to lower profits for the farmer. Similarly, the same cost of input coupled with a lower output price will also result in a lower level of profit.

*Farming
is constantly
changing
and farmers
need to take
new decisions*

*Profit
depends on
changing prices
of inputs and
outputs*

The farmer has to adapt to changes that affect agriculture

Changing resource availability

The quantity of the resources available also has a direct affect on the farm business. For example, problems of obtaining capital could limit the use of fertilizers and pesticides. This in turn can affect yield. And yield affects the level of sales made. This often results in lower levels of farm profit. Farmers have to evaluate their decisions in relation to the resources available. A good farmer as manager should be able to determine the combination of inputs that give the highest returns and eventually profit.

Changing technologies

The relationship between input and output changes as technological advances are made. For example, a new variety of rice may become available that produces a yield similar to currently available varieties but with better disease resistance, lower fungicide requirements and, hence, lower production costs. Similarly, a new high-yielding technology may be developed so that with the same or an even lesser amount of input a higher yield can be attained. This change could also reduce the production cost per unit of output. Better farm management practices require that the farmer adopts those technologies where the production cost per unit is lowest so that profit is maximized.

The farmer as manager has to be prepared for these changes and ready to respond to them quickly.

Notes

Training slides
for Session 1.2.2
Why is farm management important?

7 Changes in farming practices

Changes in prices
(higher or lower prices for products
and costs for inputs)

Changes in resource availability
(problems concerning resources may affect yields
and yield affects the level of sales and farm profit)

Changes in technologies and practices
(better farm management practices can result
in increased profit for the well informed farmer)

What are farmers' objectives?

The objectives of farmers are presented in this session. The conflicting nature of these objectives is highlighted. Special emphasis is placed on the goal of increasing profit, which can often satisfy other goals that farmers set.

It is important for extension workers to realize that farmers have different goals and some may appear to compete. When conflicting goals emerge, profit is not always the number one priority. However, profit is important to ensure the survival of the farm business and the future of the farm family in agriculture. Finally, it should be realized that the money generated from the farm business can help the farm family realize some of their other goals.

Objectives



Participants should recognize the importance of profit as an objective of farmers, even though it may not be the foremost goal. Profit is important to ensure the sustainability and survival of the farming business in a changing world.

Key points

1. Farmers' objectives are both social and economic in nature as well as immediate and long term.
2. The "human element" in farming is important. An increase of profit may not be the main objective.
3. It is important to understand the significance of farm profit and how it is needed to ensure survival and sustainability of the farm business.
4. In the long term, farm profit must be sufficient to cover family expenses and production costs related to the farm.

Steps for instruction

1. Distribute Handout 1.2.3 (What are farmers' objectives?) among the participants before the start of the session.
2. Begin with a discussion on objectives of farmers and why is it important to know them. Discuss how the farm has dual roles: production and consumption. Show Slide 8 (Farmers' objectives).
3. List the objectives of farmers on a posterboard or flip chart. The trainees are likely to include some of the objectives listed below. Use the list to prompt the participants into discussion.
 - profit maximization;
 - increased production;
 - increased sales;
 - minimized costs;
 - avoidance of debt;
 - achieving a "satisfactory" standard of living;
 - reduction of the risks involved in farming;
 - transference of the farm to future generations;
 - ensuring stable food supplies for the family.
4. Present Slide 9 (Understanding farmers' objectives) that summarizes the discussion. Highlight some of the consumption goals of the farmer. Make reference to the "human element" of farming. Discuss why it is important for extension workers to understand the expectations of farmers and their families.
5. Through discussion with the participants show how farmers' objectives may compete or conflict. Draw out examples of conflicting goals from the participants.

What are farmers' objectives?

For a more complete understanding of farm management, it is important to recognize the human element of farming — the expectations of farmers and their families, their goals and preferences. Farming is both a way of life and a business. The farm family is involved in both production and consumption. Examples are:

- The farm is a production unit where crops are grown and livestock are reared.
- The farm as a business utilizes inputs and materials (fertilizer, labour, machinery).
- The produce from farming is both sold on the market and used for family consumption (staple food, milk, eggs).
- The farm family is also a unit of consumption. It consumes products produced by other farmers and purchased in the market.

On a farm the connection between production and consumption is closely linked. Farm households have more than a single purpose and with it different goals that guide their choices between alternative actions. Some of these are:

- maximizing profits;
- increasing production;
- increasing sales;
- minimizing costs;
- avoiding debt;
- achieving a "satisfactory" standard of living;
- reducing the risks involved in farming;
- transferring the farm to the next generation;
- ensuring stable food supplies for the family.

Both production and consumption are objectives of farmers

Profit is the difference between income and costs

Farmers' objectives often conflict

Often the pursuit of one objective could conflict with another. For example, the goal of increasing sales may conflict with the objective of ensuring stable food supply for the family. The volume of produce sold in the market is often the surplus of produce above family consumption requirements. Similarly, trying to avoid debt may conflict with the goal of maintaining a satisfactory standard of living.

In most cases, Asian farmers lack the necessary capital to finance their farm operations. Maintaining a high standard of living often entails additional expenses beyond the financial reserves of the farm family. In order to generate the income necessary to raise the standard of living, there is often a need to expand farm operations and this in turn could require additional financing. The two objectives are often in conflict.

Extension workers need to understand farmers' goals. The questions to ask are:

Extension workers need to understand farmers' goals

- To what extent do farmers aim at maximizing profits?
- To what extent are farmers willing to take risks?
- Do farmers desire more leisure time?

All decisions that farmers make relate to their goals and objectives. The goals and objectives affect their enterprise decisions: (i) What to grow? (ii) How to grow? (iii) How much to grow? (iv) For whom to grow? Farmers may have more than a single goal and these goals guide their choices between different courses of action.

The goal of profit maximizing may not be so important for the farmer. The farmer may prefer to select an enterprise that produces a lower but more stable profit. For example, a decision taken to select a farm enterprise that maximizes profit might result in the detrimental effect of wider variations in yields from year to year. The non-financial goals of farmers and their families also need to be realized. Therefore, a better understanding of the reasons behind many farmers' decisions is important. These considerations limit the extent to which profit is the main driving force.

Although farmers have multiple and often conflicting objectives, they need to generate a minimum level of profit. Profit is important to bring about a good living for the farm family. It generates the capital needed for reinvestment in the farm. It also provides the purchasing power for medical and health services, education, recreation and food. In the long term, farm profit must be sufficient to cover both production costs related to the farm and family expenses. Thus the commercial nature of farming is vital.

After minimum profit levels are attained, other objectives can be pursued. The bottom line is that market-oriented farming requires a business approach in order to survive. The challenge facing farmers in times of competition is how to increase profitability.

Profit is important for commercial farming

Notes

Training slides
for Session 1.2.3
What are farmers' objectives?

8 Farmers' objectives

Profit maximization

Farm expansion

Increased output/sales

Reduce costs

Avoid debt

Reduce risk

*The ultimate goal is to ensure
a stable food supply for the family
and to attain a satisfactory standard of living*

9 Understanding farmers' objectives

Extension workers need to ask ...

**To what extent do farmers
aim at maximizing profits?**

**To what extent are farmers
willing to take risks?**

*It is important
for extension workers to
understand the expectations
of farmers and their families*

**Do the farmers desire
more leisure time?**

Module 1, Unit 1.2, Session 1.2.3

10 Commercial farming

Farmers have multiple and often conflicting objectives

**Farm profit must be sufficient to cover
production related costs as well as farm expenses
before other objectives can be pursued**

**Profit generates the capital needed to invest in the farm
and provides money to pay for health, education,
recreation and food**

*Minimum profit is needed for the farm business to survive
... the challenge is how to increase profitability*

Module 1, Unit 1.2, Session 1.2.3

How do farmers decide?

Steps in the decision-making process are discussed in this session. In agriculture the decision-making process is seen to be different from most businesses because of the biological nature of farming as well as the time involved in producing an output.

Farmers make decisions every day of their lives. Extension workers have an important role in supporting them. An understanding of the farmers' decision-making process should provide extension workers with greater insight into the life of the farmers, their motives and the type of decisions they make.

Objectives

At the end of the session, the participants are expected to:



- know the steps in the decision-making process;
- recognize the difference between the decision-making process in agriculture and that of other business enterprises.

Key points

1. Steps in the decision-making process:
 - identify the problem and collect data/information;
 - identify and analyse alternative solutions;
 - make the decision and adopt the best alternative;
 - implement the decision;
 - follow up and monitor the decision.
2. Decisions based on the time horizons taken into account are short-, medium- and long-term decisions.

Steps for instruction

1. Distribute Handout 1.2.4 (How do farmers decide?) to the participants in advance of the session.
2. Explain how farmer decision-making is related to the objectives or goals set.
3. The trainees need to understand that their job as extension workers is to support farmers in making decisions that help them to achieve their objectives. They also need to understand that this process requires a number of steps to be taken by the farmer. Show Slide 11 (Steps in the decision-making process). This should provide extension workers with greater insight into the farm management decisions that farmers make.
4. Introduce the idea that the decision-making process in agriculture is different from most other businesses because of the biological and environmental nature of farming and the usually longer gestation time of the production process.
5. Explain the different time horizons concerned when making short-, medium- and long-term decisions, and show how they affect decision-making.
6. Initiate a discussion of the decision-making process. Ask participants to discuss their experiences with farmers and to think about how farmers in practice actually do decide.

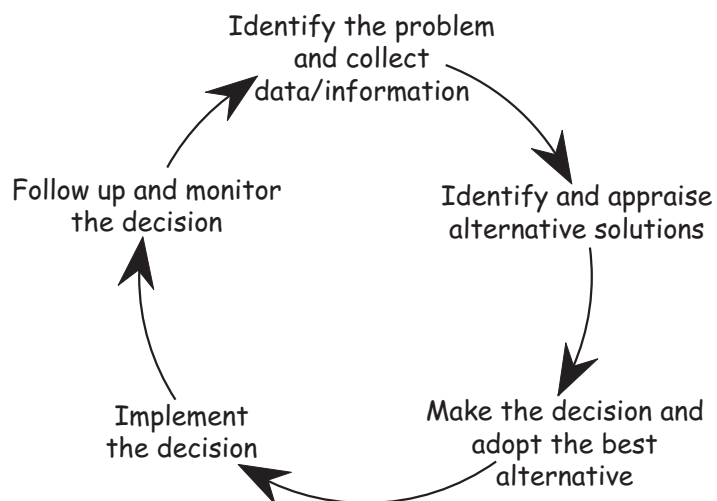
Evaluation: (i) review objectives in relation to key points, (ii) refer to Handout 1.2.4.

Notes

How do farmers decide?

Farmers continually make decisions relating to their farm business. The steps taken in the decision-making process are shown in the diagram and discussed below. It is the role of extension workers to support them in this process.

Figure 1.3 – Steps in the decision-making process



How farmers make decisions

Step 1

Identify the problem and collect data/information

Recognize the existence and nature of the problem. This calls for the collection of data on current farm performance as the basis for making improvements to the farming system. For example, data could be collected to analyse farm performance in comparison with other similar farms in the vicinity. The problems identified might be the result of the use of obsolete or inappropriate production techniques, constraints on marketing and limited alternative market channels.

Step 2**Identify and appraise alternative solutions**

Possible solutions to the identified problems may include increasing the use of purchased inputs and materials, and introducing improved bio-fertilizer and pest management methods. The consequences of the alternative actions would be evaluated to assess their likely effect on farm performance.

Step 3**Make the decision and adopt the best alternative**

Which of the alternatives is most likely to improve farm performance? Since it is rare that all the information required in making a decision would be available, selection often requires judgement by the farmer before a decision is made. The final decision, therefore, will frequently reflect the farmer's attitude towards risk and, more specifically, the perceived risks of each of the alternatives.

Step 4**Implement the decision**

Farmers have a role in implementing decisions and enforcing the action needed to ensure that they are followed. On a small farm, very often different members of the farm family undertake the planning and implementation of tasks.

Step 5**Follow up and monitor the decision**

Once the first four steps have been completed, it is useful to review the results of the decisions made. Having identified the changes, it is important to continue monitoring progress to ensure that the new plans are being followed and that revised targets are being achieved.

Time horizons

There are three different time horizons within which decisions are taken in agriculture. These are:

Short term. These are decisions concerned with the daily organization of farm operations, such as sowing, weeding, fertilizing, harvesting and storage. They also involve culling of stock, veterinary interventions and artificial insemination of livestock.

Medium term. These are concerned with the annual organization of the farm, for example preparing the cropping plan, deciding on the amount of labour to use, and whether to introduce new crop varieties and animal husbandry practices.

Long term. These decisions relate to the long-term nature of the farm, for example whether or not to expand farm size through purchasing or leasing land, and whether or not to construct buildings and/or purchase machinery and equipment.

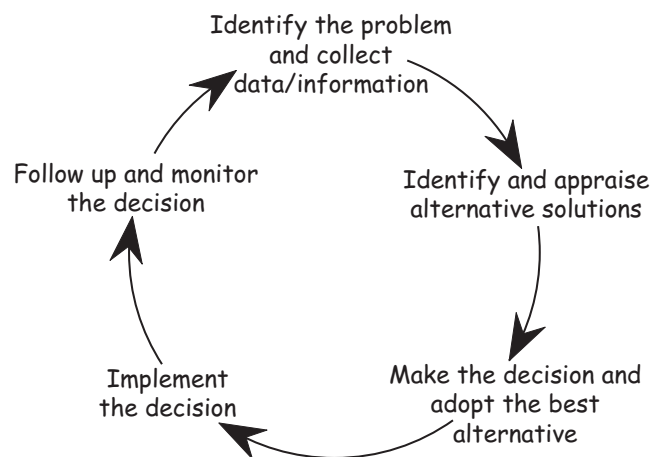
Short-term decisions are operational in nature, medium- and long-term decisions are concerned with capital investments. This concept will be further discussed in Module 6 (Farm investment and risk).

*Farm
decisions
change
over time*

Notes

Training slides
for Session 1.2.4
How do farmers decide?

11 Steps in the decision-making process



How farmers make decisions

The following is a list of the AGSF series TRAINING MATERIALS FOR AGRICULTURAL MANAGEMENT, MARKETING AND FINANCE

1. Farm planning and management for trainers of extension workers in the Caribbean, 2004 (CD-ROM, English).
2. Horticultural marketing extension techniques, 2004 (CD-ROM, English)
3. Farm planning and management for trainers of extension workers. Asia, 2006 (Hard copy and CD-ROM, English).
4. Integrating environmental and economic accounting at the farm level, 2005 (CD-ROM, English)
5. Curso de gestión de agronegocios en empresas asociativas rurales en América Latina y el Caribe, 2005 (CD-ROM, Español)

In preparation

6. Market-oriented farm management for trainers of extension workers. Africa (Hard copy and CD-ROM, English).
- Farm planning and management for trainers of extension workers. Latin America (Hard copy and CD-ROM, in Spanish)
 - Training manuals on farmer business schools. Asia and Africa.

Other work

- FAO Pacific Farm Management and Marketing Series 3, Helping small farmers think about better growing and marketing (Hard copy)*.

* Copies soon to be available from AGSF

Module 1 describes the farm and its enterprises and defines the role and importance of farm management. It discusses the functions of management, the type of decisions that farmers take, farmer's objectives and goals and the decision-making process that farmers follow in making better farm management decisions for today's competitive business environment.