

# Market-oriented farm management for trainers of extension workers

TRAINING  
MATERIALS FOR  
AGRICULTURAL  
MANAGEMENT,  
MARKETING  
AND FINANCE

6

## AFRICA



### Module 6 PLANNING



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## AFRICA

### Module 6 PLANNING

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## PLANNING

*Market-oriented farming begins by determining what buyers want, in what form and when they want it. The market dictates what to produce. Production and marketing are closely interrelated, and both aspects affect the performance of the farm business. This module outlines what farmers and extension workers need to know about the planning process, farm performance and the market in order to prepare farm plans and increase profitability and income.*

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### Note

This module is designed to give the participants an opportunity to practise a selection of the tools and skills they have learned during the course of this programme. They will be expected to conduct an in-depth plan of a 5 hectare farm. The module is constructed to help the participants integrate a number of tools and skills in the planning of a single farm.

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## The planning process

*This session looks at the process of farm planning. Farmers are concerned about the future. They usually determine by themselves what farm enterprises to engage in, but there is a role for the extension worker to assist the farmer in making planning decisions. For this to occur the extension worker must understand the process of planning. Here the participants are shown how to approach planning systematically, and in the final session of this module they will follow this process to prepare a farm plan. Because of the importance of the material to be covered, the facilitator may choose to distribute Handout 6.1A (The planning process) a day or two in advance and urge participants to list things that they do not understand.*

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### *Opening statement*

*There is no exercise connected with this session. We will begin by making a complete review of Handout 6.1A (The planning process) to ensure that we all understand the need for planning and the various steps involved. Participants should feel free to ask questions.*

---

*The outline on the following pages is provided to help the facilitator conduct the review.*

### Outline of Handout 6.1A (The planning process)

#### The need for planning

- Planning is one of the stages in the farmer's decision-making process. Some forward-looking planning decisions are immediate. Others are of a longer-term nature.
- Helping farmers gain skills for better planning is a role the extension worker can play. Of course, to do this the extension worker should understand the process of planning.
- Farmers who keep track of their past farm performance are in a better position to make good plans. This might require keeping farm records, or at least some reliable way of recalling the main performance figures. For example, farmers should know what yields they received in the past. They should know the kinds and quantities of inputs they use in production. Farmers usually do know this type of information.
- Before making a change in the farming system, farmers should estimate what the results of that change are likely to be.
- It would not be good management to change the farm system without having any idea of possible or likely outcomes.

#### The main planning questions

- What to produce and what variety or breed?
- Why produce it?
- How much to produce?
- When should it be produced?
- How much land and labour are needed?
- How much capital (money) does the farmer need to start the business?

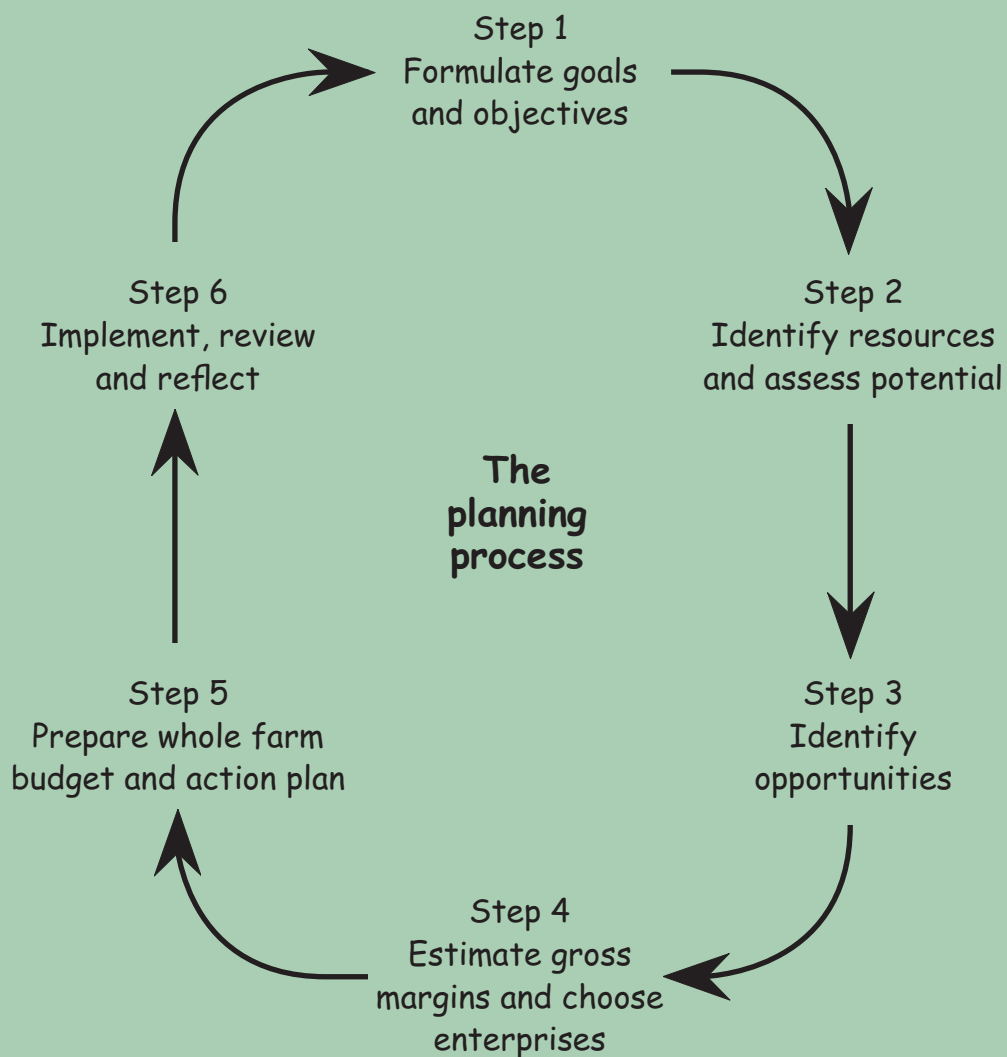
### **Budgets**

- Budgets are used to decide whether a proposed plan will effectively increase profits.
- A farmer can use budgets to decide between two or more alternative enterprises and even to make whole farm plans.
- Farmers should be encouraged to prepare more formal budgets.
- Budgets are used to decide whether a proposed plan will effectively increase profits.
- A farmer can use budgets to decide between two or more alternative enterprises and even to make whole farm plans.

### **The planning process**

The steps in the planning process are listed here and outlined in the following pages.

1. Formulate goals and objectives
2. Identify resources and assess potential
3. Identify opportunities
4. Estimate gross margins and choose enterprises
5. Prepare whole farm budget and action plan
6. Implement, review and reflect



**Step 1  
Formulate goals and objectives**

- What are my family's needs and what is the best way to provide for them?
- What are some of the things my family wants to achieve?

**Step 2****Identify resources and assess potential**

- List natural, human, physical and financial, and social capital; including problems related to natural capital such as land erosion.
- Proposed plan must fit the available resources and the farmer's ability to manage.
- Make a map of the farm with varying soil types, land use, and crop and livestock enterprises.
- Prepare a labour plan.
- Take stock of the farmers' skills and competences as a manager.

**Step 3****Identify opportunities**

Assessment of:

- demand for the product;
- marketing arrangements;
- probable prices that can be attained;
- availability, cost and quality of purchased inputs;
- transportation and storage of the final product.

**Step 4****Estimate gross margins and choose enterprises**

- Use budgets to calculate gross margins on a per unit basis (hectare, person-day) and on the basis of the most limiting resource.
- Make estimates of the income and variable costs for each of the possible alternative plans.
- Choose the most profitable enterprises.
- Prepare plans for one year.

Step 5  
Prepare whole farm budget  
and action plan

- Check the effect of changes in the cropping pattern and the introduction of new enterprises on the economic viability of the farm.
- Make sure there is a match between the amount of physical resources available to the farmer and the decisions taken as to the most viable enterprise for each land parcel on the farm.
- Check that there is agreement among the following aspects:
  - the physical characteristics of the resource base;
  - market opportunities;
  - use of other resources (labour and capital) available to the farmer;
  - individual preferences of the farm family.

The plan could include:

1. an assessment of land suitability and enterprise selection;
2. enterprise budgets;
3. planned crop rotations;
4. a calendar of operations;
5. schedules of supplies required;
6. an assessment of farm investments;
7. labour profiles;
8. cash flow projections.

Step 6  
**Implement, review and reflect**

Put the plan into action

- This is usually the most difficult part of the process and requires very careful management.

Reflection and evaluation

- Reflect on the outcomes of the plan and evaluate it in terms of the goals set at the beginning of the planning process.
- To what degree did the plan meet those objectives?
- What adjustments can be made to correct new-found weaknesses or to build on new-found strengths and opportunities?

Encourage the participants to discuss the steps in planning and to raise questions.





*Space for notes  
and questions  
for the facilitator*

## The planning process

### The need for planning

Farmers are always looking towards the future. What crop should I produce and what variety or breed? What area of land do I need? How much should I produce? When should it be produced? How much labour will I need? Do I have enough cash to buy inputs and materials or will I need to get more? These are some of the decisions that farmers make when planning the enterprise and the farm.

Planning is one of the stages in the farmer's decision-making process. Some forward-looking planning decisions are immediate. Others are of a longer-term nature. Farmers often plan just for their next season or in some cases they plan for a number of years. Planning means working things out before they happen. Farmers usually figure out by themselves what farm enterprises to produce. Often, however, they lack information and skills to help them make the best decisions. Helping farmers gain skills for better planning is a role the extension worker can play. Of course, to do this the extension worker should understand the process of planning.

Farmers who keep track of their past farm performance are in a better position to make good plans. This might require keeping farm records, or at least some reliable way of recalling the main performance figures. For example, farmers should know what yields they received in the past. They should know the kinds and quantities of inputs they use in production. Farmers usually know this type of information.

*The planning process (continued)*

It is important for planning that farmers are able to identify the strengths and weaknesses in their farming methods. Weaknesses may include, for example, a bad selection of farm enterprises, poor production practices or poor financial planning. Sometimes the weaknesses are also the result of poor day-to-day management.

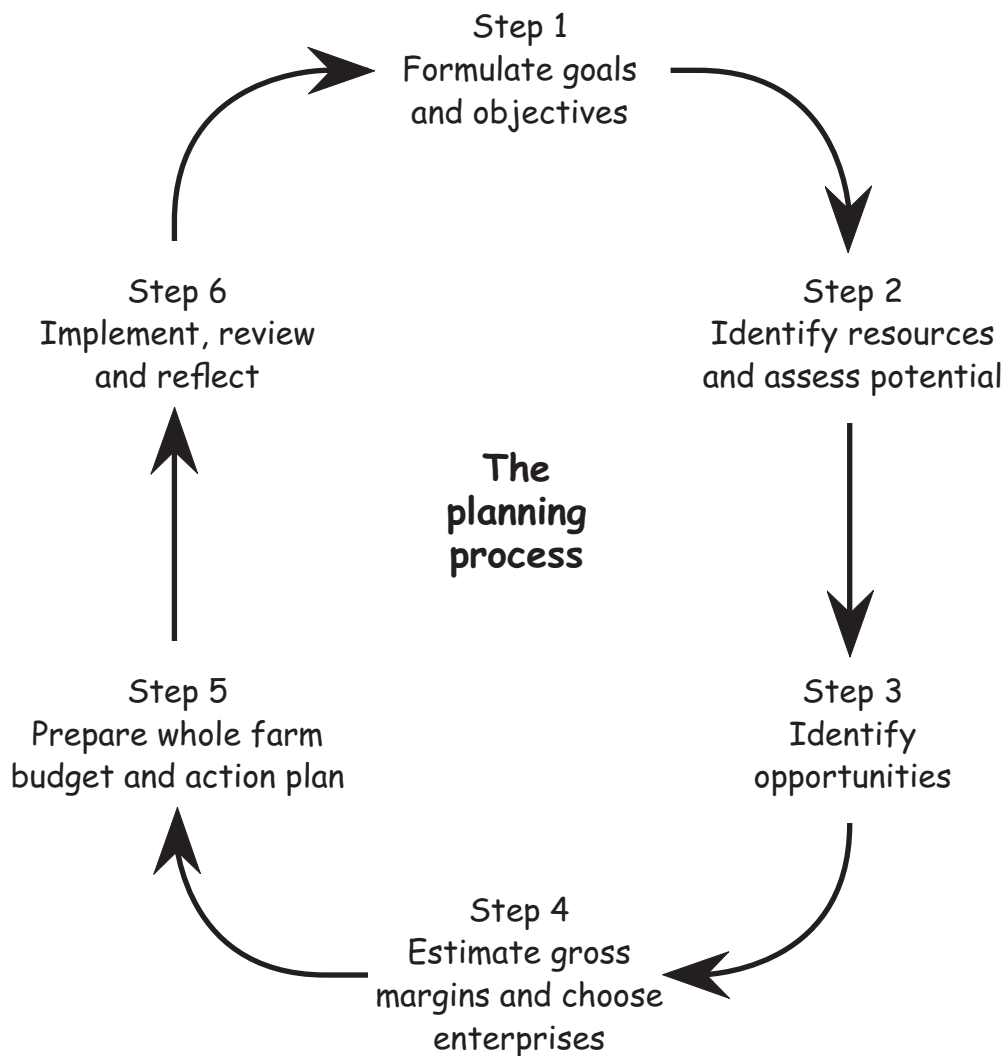
In the following session we discuss methods of farm diagnosis that could be used to analyse the farm situation. Farmers who discover weaknesses in the farming system should try to introduce changes to overcome them.

However, before making a change, farmers should estimate what the results of that change are likely to be. It can only be an estimate of the outcome, because we cannot see into the future. Nevertheless it is important that we try to imagine the expectation. It would not be good management to change the farm system without having any idea of the possible or likely outcome. The method of estimating the results of a farming plan is known as budgeting.

**Budgets**

Budgets are used to decide whether a proposed plan will effectively increase profits. Similarly, a farmer can use budgets to decide between two or more alternative enterprises and even to make whole farm plans.

Most farmers make some attempt at budgeting their farm plans, even though they may not work out their calculations on paper. But farmers should be encouraged to develop the practice of making more formal budgets. These can be written down, if the farmers are literate, or alternatively symbols and pictures can be used. By keeping some form of record it is less likely that some important information will be forgotten.

*The planning process (continued)*

The farm planning process follows a series of steps.

Step 1  
**Formulate goals and objectives**

This step typically begins with identification of the farm household goals and a listing of the priorities to the farmer and the farm family. This may simply consist of a single goal,

*The planning process (continued)*

such as maximization of profit or competing goals, for example, increased profit and leisure. The goals reflect the farm-family preferences. Some basic questions to ask might include:

- What are my family's needs and what is the best way to provide for them?
- What are some of the things my family wants to achieve?

**Step 2****Identify resources and assess potential**

In the second step in planning, the farmer draws upon the resources available to the farm family.

The extension worker could provide guidance using the information studied in Module 2 of this programme; and it should cover natural, human, physical, financial and social capital. Specific attention should be paid to drawing up a labour plan.

In addition to a list of resources, the farmer should be encouraged to make a farm map. The map should mark out the current crops and record the soil types and conditions for each plot on the farm. The same should be done for common land for grazing and forestry. This record of the available land will serve as a guide as to what crops are suitable and what area may be grown. It will also suggest what yields to expect.

At this stage the farmer needs to identify problems, such as soil erosion, that relate to important resources such as land.

*The planning process (continued)*

Farmers should also take stock of themselves as managers and objectively evaluate their capacity and interest to manage certain crops or livestock. They should identify weaknesses in management of the business (e.g. because of excessive debt, high variable costs, depreciation and the use of labour).

The resources available set a limit on the plans that are possible. It is important that any proposed plan must fit in with the available land, labour and financial capital, and with the farmer's ability as a manager. It is no good trying to make a change that requires more of these resources than the farmer can acquire.

Step 3  
**Identify opportunities**

This step starts with a careful assessment of market and consumer demand. Even if the resource inventory shows that certain crop and livestock enterprises are technically possible, choosing an enterprise must also take into account market opportunities. The market appraisal should include an assessment of the demand for the product, the marketing arrangements and probable prices that can be attained, availability, cost and quality of purchased inputs, and transportation and storage of the final product. (Market planning will be covered in greater detail in Session 6.3.

For many farmers the decision on what enterprises to include in a farm plan is based on personal experience and preference, together with considerations of comparative advantages of the different activities. Some ideas and suggestions for activities can come from discussions held with family members, other farmers or extension workers — all of which could provide important sources of new information.

*The planning process (continued)*

The range of potential opportunities identified and evaluated could be broad and would need to be reduced through a process of "short listing" or shortening the list to include the most likely opportunities. Many of the opportunities might be rejected immediately because farmers might not be interested in them or because they feel that they could not manage them properly. Other opportunities may be rejected because there is insufficient land or labour or capital available to carry them out.

**Step 4****Estimate gross margins and choose enterprises**

At this stage estimates are made of the income and variable costs for each of the possible alternative plans. These estimates are used to calculate gross margins. Based on the gross margins and other factors considered in the previous step, the farmer selects the most profitable and viable enterprises.

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**Note**

The gross income calculation is made by multiplying the farmgate price with yield. It is important to mention again that the price used is the farmgate price. By looking at the market as the final destination of produce, it is important to take into account what we have called the marketing margin. By taking the market price and deducting the costs, such as transport or handling, the farmer can arrive at the farmgate price. In some cases produce is sold to traders, thus the cost of transportation might be minimal or non-existent.

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*The planning process (continued)*

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**Note**

The gross margin for each potential enterprise should be calculated on a per unit basis (hectare, person-day). The gross margins should be prepared on the basis of the most limiting resource. If land is limited, the enterprises giving the highest gross margin per hectare would be best. If labour is limited the enterprises giving the highest gross margin per person-day would be the best. If capital is identified as the limiting resource, the plan giving the highest gross margin per \$100 of capital would be the best.

---

Usually a farm plan is for one year, and costs related to land, family labour and machinery are considered fixed. Therefore, in the short run, maximizing gross margin is similar to maximizing profit (or minimizing losses) because the fixed costs are constant.

Step 5  
**Prepare whole farm budget  
and action plan**

After the enterprise gross margins are calculated, the farmer can draw up budgets for the farm. Some farmers may even prepare different farm plans to analyse the best options and combinations of enterprises. The whole farm budget checks the effect of changes in the cropping pattern and the introduction of new enterprises on the economic viability of the entire farm. The gross margin for each enterprise will help the farmer make sure there is a match between amount of physical resources available to the farmer and the decisions taken as to the most viable enterprise for each land parcel on the farm.

*The planning process (continued)*

The decision would require that there is agreement among the following aspects:

- the physical characteristics of the resource base;
- market opportunities;
- use of other resources (labour and capital) available to the farmer;
- individual preferences of the farm family.

This often involves a process of trial and error. Once the enterprise combination has been selected, the farmer then assesses the overall gross margin and whole farm net income. The latter would require the preparation of an inventory of the fixed asset costs. The difference between the overall gross margin and the fixed costs provides an estimate of whole farm net income.

An action plan is then prepared taking into account physical and financial aspects of the plan. The plan could include an assessment of land suitability and enterprise selection, planned crop rotations, a calendar of operations, schedules of supplies required, an assessment of farm investments, labour profiles and cash flow projections, and enterprise budgets. One of the simplest ways to do this is with a seasonal calendar. This will give the farmer a visual picture of the plan, showing when inputs, labour and finance are needed, and when various activities need to take place.

For a new farm, or a large-scale change in an existing farm system, a complete budget is necessary. For smaller changes in the farm system only variable costs are affected, and a partial budget may be a sufficient guide.



*The planning process (continued)*

Step 6  
**Implement, review and reflect**

***Putting the plan into action.*** Once the best plan for the farm has been selected, then it has to be put into operation. If tree crops and livestock are included in the plan, this may take a long time, because these enterprises do not reach full production for several years. If new enterprises are introduced, the farmer may have to learn new skills and working methods to manage the enterprise effectively. Once the new plan is fully established it should run smoothly without too many management problems. The period during which the plan is put into operation is usually the most difficult and requires very careful management.

***Review and reflection.*** While the plan is being implemented and after it has been fully implemented, the farmer will need to reflect on the outcomes of the plan and evaluate it in terms of the goals set at the beginning of the planning process. To what degree did the plan meet those objectives? What adjustments need to be made to correct newly found weaknesses or to build on newly found strengths and opportunities?

This then is a good position from which to plan the farm year after year.



## Farm performance analysis

*In this session, the participants will focus on the concept of benchmarking. First they will identify a benchmark farm in their area, and then they will practise analysing performance variations to highlight problems and possible solutions.*

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### *Opening statement*

*Farmers learn best from the experience of other farmers. Benchmarking is a methodology that enables farmers to analyse their business in comparison with those of other farmers considered to be successful. The exercises in this session require the participants to compare their gross margins with a benchmark.*

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*The outline on the following pages is provided to help the facilitator conduct the review.*

### **Outline of Handout 6.2A (Farm performance analysis)**

Farm and enterprise performance can be assessed either (i) year to year or (ii) in comparison with other farms in the vicinity. Farm performance analysis helps to understand where the weaknesses occur and to identify ways of addressing them through better planning for profits. Farm performance can be carried out through three methods: (i) by comparing enterprise performance on a single farm over time; (ii) by comparing the performance of groups of farms; (iii) by comparing the performance of a single farm with the more successful farm.

Farm performance analysis based on benchmarking involves the following:

- identifying those farmers who are the best at doing something;
- understanding how they do it in order to learn from them;
- studying the actual performance of the selected farm and comparing other farms of similar size and farming system;
- identifying strengths and weaknesses and steps to improve the performance of the individual enterprise or the farm as a whole;
- high-profit benchmarks derived by selecting farms that are the most profitable and comparing the performance measures.

### **Steps for carrying out a performance analysis**

1. Group farmers according to farm systems.
2. Select the farm enterprise that you want to study and identify key performance measures.
3. Identify successful farmers as benchmarks for comparative analysis.
4. Compare farm performance against the benchmark.
5. Identify the causes and effects of the performance difference.
6. Develop and implement changes.

### *For the facilitator*

*The exercises in this module require the participants to compare the gross margins they prepared in Session 4.2 to a benchmark and then to analyse the cause of variations. To do this, the facilitator will need to establish a benchmark for a crop selected by each farm team. Please follow the guidance below in preparing the benchmarks.*

- 1. Make a copy of one gross margin prepared by each team in Session 4.2. Be sure there is a different crop from each farm team.*
- 2. Based on your knowledge of the crop, create a benchmark gross margin that reflects nearly ideal conditions in terms of factors such as:*
  - rainfall*
  - above average yields*
  - efficiency of use of inputs*
  - efficiency of labour*
  - access to markets and good prices*
- 3. Follow the same gross margin format as used in the handouts for Session 4.2 (There will be as many different benchmarks as there are farm teams.)*
- 4. The benchmark gross margin must be more profitable than the gross margin copied from the individual teams.*
- 5. If it is possible, vary some but not necessarily all of the elements. This will require that the participants look carefully at the differences and discover ways to improve their own gross margins.*

*The benchmark should not indicate anything about the factors above, that is, it should not mention that rainfall is higher, or the cost of fertilizer is lower. This must be left for the participants to discover. However, it is essential that you keep a record of the specific differences so that you can facilitate learning and discovery when the participants present their findings at the end of the exercise.*

***Exercise introduction***

*This is a double-exercise session and we shall use both the standard format of Exercise 6.2A (Farm performance analysis) together with the supporting exercises in Handout 6.2B (Farm performance analysis using benchmarks).*

## Exercise 6.2A

### Farm performance analysis

**Purpose:** To practise using benchmarks by conducting a simple performance analysis of our farms. (Participants should have read Handout 6.2A and B prior to this exercise.)

**Method:** Calculations, group discussion, constraints analysis.

**Materials\*:** (i) Pen and paper, (ii) calculator, (iii) flip chart paper or newsprint, (iv) thick marking pens.

*\*Benchmark farm information (prepared by the facilitator)*

*Allow 90 minutes for this exercise*

### Procedure

1. Get the participants into their farm teams.
2. Ask each team to take out the gross margin they prepared (Module 4, Session 2) for the crop for which you have created the benchmark.
3. Ask each team to take out Handout 6.2B and follow the instructions for Part 1 of the exercise.
4. Ask each team to present its findings.

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#### Note

As a facilitator, you will know where the significant variances are between your benchmark and their gross margin. Make a checklist to make sure they find all variances.

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*Exercise 6.2A (continued)*

5. Ask the teams to work on Part 2 of the exercise.
6. Ask the teams to present their findings.

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**Note**

Again, you will know what caused the significant variances between your benchmark and their gross margin. Make a checklist to make sure they find all root causes.

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Encourage discussion around the use of the benchmarking method and how it might be applied in the field.



## Farm performance analysis

### What is farm performance analysis?

Farm performance analysis is a way to assess how farms and their enterprises are performing in comparison with other farms in the vicinity. It is an analysis of past results, but it gives useful guidelines for the future. The analysis will help farmers understand where weaknesses occur in their farms and identify ways of addressing them through better planning for profits.

Many factors affect the performance of the farm and the individual enterprises. These include the level of production, productivity, input costs and product prices, as well as the management skills and ability of the farmer. In order to assess these factors it is often useful to divide the farm into its separate enterprises and to compare each one — both separately and in combination. Farm performance can be carried out through three methods:

1. comparing the performance of enterprises on a single farm over time;
2. comparing the performance of groups of farms;
3. comparing the performance of a farm with a more successful farm.

The tools of constraints analysis and gross margin analysis can be used for both forms of analysis. The tools were discussed in the previous module.

*Farm performance analysis (continued)***Benchmarking**

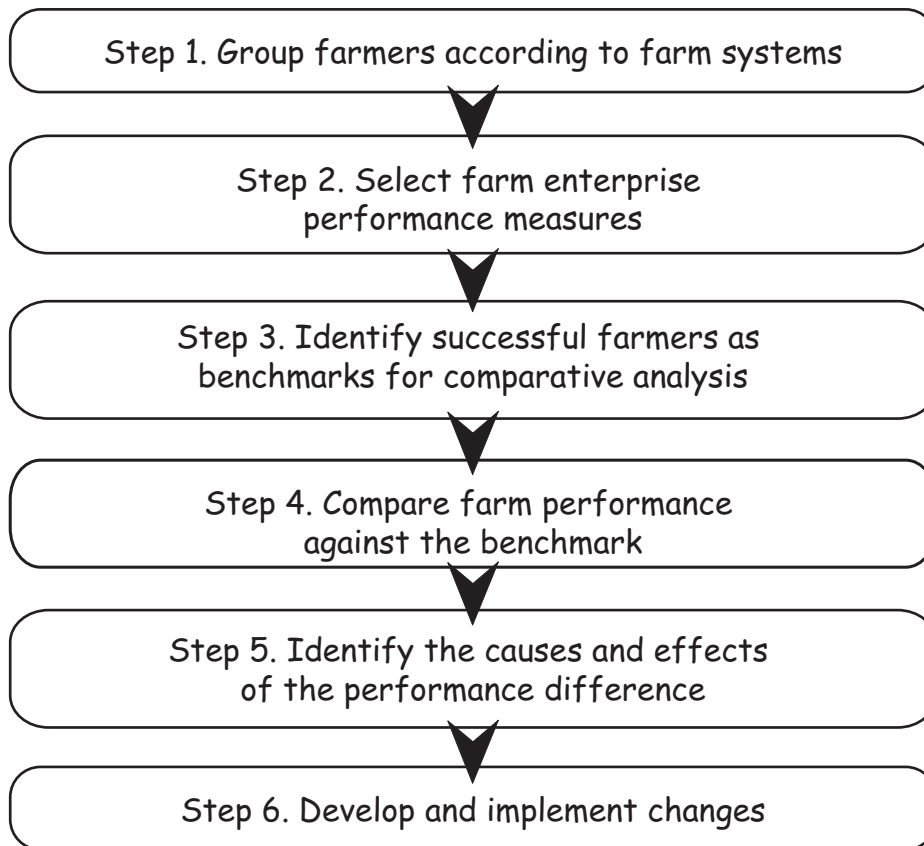
Farm performance analysis through making farm comparisons is based on the idea of benchmarking. Benchmarking is a practice of identifying those farmers who are the best at doing something and understanding how they do it in order to learn from them and improve farm performance. Their performance is set as a standard or benchmark for other farmers.

Benchmarking involves studying the actual performance of the selected farm and comparing other farms of similar size and farming system for detailed financial and technical analysis. The intention is to identify strengths and weaknesses and steps to improve the performance of the individual enterprise or the farm as a whole.

The extension worker should be able to *calculate benchmarks* for both typical and better-managed farms. There are several alternatives available for setting performance standards or benchmarks. Benchmarks for farms can be made up by averaging the actual performance data from a large group of farms. The high-profit benchmarks are sometimes derived by selecting the one-third of the farms in that large group that are the most profitable and averaging the performance measures from those farms. But benchmarking can also be conducted by comparing individual farms.

**How is a performance analysis carried out?**

The approach described below shows the basic steps of comparative farm performance analysis. This analysis is conducted by the extension worker in collaboration with farmers. The results of the analysis can be used as a useful extension tool for dissemination of feedback information to the farmers.

*Farm performance analysis (continued)***Step 1****Group farmers according to farm systems**

Look for a common factor upon which farmers can be grouped. This should be a factor that is relevant to the group of farmers with whom the extension worker works. This might be land size, agro-ecological zone or technological package.

**Step 2****Select farm enterprise performance measures**

Select the farm enterprise that you want to study and identify key performance indicators that reflect farm performance. Some examples are listed on the next page.

*Farm performance analysis (continued)*

Market related measures	Output-input related measures
Final market price achieved	Yield per hectare
Quality of harvested produce	Cost per tonne of packaging
Marketing costs	Milk produced per kilogram of feed
Prices attained after taking into account marketing costs	Cost of hired labour

A decision should be taken whether to use the overall indicator of gross margin per hectare, per person-day or per \$100 of capital. The indicator should be the most limiting factor. This is to make sure the farms are compared on the same basis.

## Step 3

**Identify successful farmers as benchmarks for comparative analysis**

Identify which of the farmers are performing well, who can be used to set the benchmark for performance.

## Step 4

**Compare farm performance against the benchmark**

Once the performance measures are established, data about the farm(s) to be compared needs to be collected. Such data could come from farm records. If these are not available, then the farmer's memory will have to suffice.

*Farm performance analysis (continued)*

When the data is available, use appropriate analysis tools to analyse the farm in terms of the key performance measures. This stage requires making comparisons of the performance of the farm with the benchmark, including such factors as:

- overall profitability of the farm;
- gross margin performance of the enterprises;
- yields and selling prices;
- quantities of variable inputs used;
- total fixed costs;
- various physical and financial performance measures identified as relevant to the farm or group of farms.

**Step 5****Identify the causes and effects  
of the performance difference**

Using tools such as a constraints analysis, the extension officer can assist the farmers to identify what is causing the difference between their farms' performance and the benchmark.

**Step 6****Develop and implement changes**

Work should now be done to develop changes in the farm that can be implemented. This would include looking at all aspects of the farm in terms of the decision-making boundary. Farmers should look at changes in input, production and marketing that are relevant to the root cause of the performance difference.

*Farm performance analysis (continued)*

Example  
Performance analysis

The following example shows how gross margin analysis can be applied to diagnose the farm. The example shows three farm situations reflecting low productivity, low intensity and high fixed costs.

Three farmers have 5 ha each on which they produce rice, coffee, beans and maize. They have recently learned that the benchmark whole farm gross income for a similar farm is \$613. When they discussed this situation with their extension officer, the extension officer used the gross margin tool to analyse the performance of their farms and also created a benchmark based on knowledge of the best performing farmers in similar situations. Then the three farms were compared to the benchmark.

From this analysis, the farmers learned that they each had different causes for falling below the benchmark. The results were as follows:

	Benchmark	Farmer 1	Farmer 2	Farmer 3
Profit	613	224	526	513
Cause		Low productivity	Low intensity	High fixed costs

*Farm performance analysis (continued)*

*The details of the gross margin analysis are shown below*

Item	Normal	Low productivity (1)	Low intensity (2)	High fixed costs (3)
Rice	2.5 ha x \$220 per ha = \$550	2.5 ha x \$110 per ha = \$275	3.0 ha x \$180 per ha = \$540	2.5 ha x \$220 per ha = \$550
Coffee	0.8 ha x \$350 per ha = \$280	0.8 ha x \$300 per ha = \$240	0.8 ha x \$300 per ha = \$240	0.8 ha x \$350 per ha = \$280
Bean	0.5 ha x \$170 per ha = \$85	0.5 ha x \$70 per ha = \$35	0.5 ha x \$150 per ha = \$75	0.5 ha x \$170 per ha = \$85
Maize	1.2 ha x \$40 per ha = \$48	1.2 ha x \$20 per ha = \$24	0.7 ha x \$30 per ha = \$21	1.2 ha x \$40 per ha = \$48
<b>Gross margin</b>	<b>5.0 ha = \$963</b>	<b>5.0 ha = \$574</b>	<b>5.0 ha = \$876</b>	<b>5.0 ha = \$963</b>
Fixed costs	5.0 ha x \$70 per ha = \$350	5.0 ha x \$70 per ha = \$350	5.0 ha x \$70 per ha = \$350	5.0 ha x \$90 per ha = \$450
<b>Profit</b>	<b>\$613</b>	<b>\$224</b>	<b>\$526</b>	<b>\$513</b>

The extension officer then did a constraints analysis, which examined the root cause of low profits compared to the benchmark. The results were as follows:

**Farmer 1** *Here it was found that the yields of rice, beans and maize (and to a lesser extent coffee) were lower than the benchmark. The cause of low yields was the result of things such as poor soil fertility, pests. This resulted in a low gross margin, which resulted in low profits.*

*Farm performance analysis (continued)*

**Farmer 2** *Here it was also found that the yields of rice, beans and maize (and to a lesser extent coffee) were lower than the benchmark. The cause was more the farming system, including technology choices and production systems. This resulted in a low gross margin, which resulted in low profits.*

**Farmer 3** *Here it was found that yields were comparable to the benchmark, but that fixed costs were much higher than the benchmark. This resulted in the eroding of a sound gross margin, which resulted in low profits.*

When analysing the three farms above, a number of strategies could be formulated for improvement. Some suggestions are given below:

Problem	Possible action
Low productivity (1)	<ul style="list-style-type: none"> <li>• Increase crop yields by improving soil fertility, addressing problems of drainage, reducing the incidence of crop diseases;</li> <li>• Try to get better market prices by using better harvest and post-harvest handling</li> </ul>
Low intensity (2)	<ul style="list-style-type: none"> <li>• Introduce new technologies and improved farm practices aimed at intensifying the farming system;</li> <li>• Introduce new farm enterprises as part of a diversification process aimed at increasing on-farm income</li> </ul>
High fixed costs (3)	<ul style="list-style-type: none"> <li>• Reduce fixed costs through better management</li> </ul>



*Farm performance analysis (continued)*

Very often the problems of a farm may have more than a single cause in which case a combination of solutions may be needed. There should be a realistic relationship between the gross margin and fixed costs. High fixed costs associated with labour, machinery or rent of land should be matched by intensive farming (a high gross margin). Farming with low intensity systems (i.e. a low gross margin) can only increase their profits if they lower their fixed costs. The results of the gross margin calculations of enterprises from different farms need to be compared very carefully because the gross margin only covers the variable costs from total costs.

It should be noted that valid comparisons can only be made in terms of a production unit common to all of the farms or activities being compared. This unit can be land area, as given in the example above, if the land used by each enterprise is equally suitable. It could also be per unit of labour per \$100 of capital invested or per head of livestock.

*Space for notes  
and questions  
for the facilitator*

## Farm performance analysis using benchmarks

In this exercise, you will be comparing the gross margin of one of your crops to a benchmark gross margin prepared specially for this exercise. At some point before this exercise, the course facilitator will have copied one of the gross margins that you prepared in Session 4.2. Based on this gross margin, a benchmark gross margin for the same crop has been created. The benchmark performance analysis exercise will be done in two parts.

### Part 1

1. Get into your farm teams.
2. The facilitator will give you a benchmark gross margin for a crop. Take out a copy of the gross margin for the same crop (this will be among the gross margins you prepared in Session 4.2).
3. Your task is to compare the two gross margins and discover all the differences between them. Check crop prices, input use, labour, or yield. Record all your findings.
4. Stick your gross margin (not the benchmark) in the centre of the flip chart paper. With this as your centre, create a mind map that highlights the variances you discovered in your comparison. See example shown on the opposite page.
5. Present your findings to the rest of the participants. If the discussion identifies additional variances, add these to the mind map.

*Farm performance analysis using benchmarks (continued)*

**Part 2**

1. Return to your farm teams.
2. Using your mind map as your checklist, conduct a constraints analysis to try to determine the root cause of the variances you discovered in your analysis and in the group discussion.

When you have completed your analysis, reproduce it neatly on another flip chart paper and present your findings to the rest of the participants.

**Example of the mind map of variances**

Gross margin for: MY CROP Enterprise      Actual ha: 5 (A)

Income			
Quantity sold (B)	Price (C)	Value (D) [B × C]	
1 000	50	50 000	
Total income from sales (E)			50 000

Variable costs			
Item	Quantity (F)	Unit cost (G)	Total cost of item (H) [F × G]
Seed	10	100	1 000
Fertilizer	10	100	1 000
Labour	50	55	2 750
Pesticide	20	150	3 000
Harvesting	40	100	4 000
Ploughing	5	1 000	5 000
Weeding	5	1 000	5 000
Total variable costs (I) [sum of H]			21 750
Enterprise gross margin (J) [E - I]			28 250
Gross margin per hectare [J/A]			5 650

Price lower than benchmark

Used more labour

Higher cost of labour



## Planning for the market

*In this session the participants will work on developing a realistic market plan. This will entail a visit to a market where participants will be given an assignment to identify market conditions for a specific commodity. From there they will develop a market plan.*

---

### *Opening statement*

*You have previously been exposed to various aspects of marketing. In Module 2 you have learned how markets function and in Module 4 how to calculate marketing margins. This session takes the learning further and tries to reinforce it through a practical exercise and visit to a market.*

---

*The outline on the following pages is provided to help the facilitator conduct the review.*

### Outline of Handout 6.3A (Planning for the market)

Marketing is the key to successful farm profit-making.

- Marketing can be quite complex for the individual farmer.
- It is often more useful if farmers market their produce as a group.
- The extension worker can assist in:
  - helping farmers to formulate a market strategy;
  - prepare a marketing plan and facilitate group and individual marketing actions.

The essential principles of marketing

People      Plan      Product  
Place      Price  
Promotion

#### What do most customers really want?

Quality	No pest damage
Low price	Good packaging
Uniformity of produce	A wide selection
Sufficient quantity	Clean produce
Consistency	Accessible produce
Freshness	Good labelling
Nutritious food	Knowledge of who produced it
Health promoting food	Receiving the produce on time
Attractive products	A list of ingredients
Good taste	Instructions on how to prepare it

## The marketing plan

Main questions:

- Who is the customer?
- What does the customer want?
- Is this product in demand?
- How many competitors are providing the same product?
- How can demand for the product be created?
- Can the farmer effectively compete in price, quality and delivery?

A marketing plan should cover the following topics:

- The current market situation
- Constraints and opportunities analysis
- The marketing strategy

## Constraints and opportunities

- Solutions to marketing problems should be simple.
- The farmer should look for the right combination of factors that will satisfy the needs of the consumers and increase farm profits.

## Usefulness of the marketing plan

The market plan should help the farmer:

- know how much produce can be sold;
- plan production and have enough to sell;
- do what is needed to make a profit;
- identify competitors and what they are good at by comparison to other farmers;
- identify new crops to grow;
- identify new and/or potential customers;
- identify weaknesses in the farmer's management skills;
- identify weaknesses in the overall business plan.

### Marketing plan checklist

- Product information
- Input supply and financing
- Local marketing system
- Product requirement by market
- Under-utilized local resources
- The farming community

#### ***Exercise introduction***

*This is a short exercise to reinforce some of the learning in Module 4, applying the constraints and opportunities analysis to the market. The exercise also gets the participants to formulate practical strategies and actions to address the constraints.*



## Exercise 6.3A

### Constraints and opportunities

**Purpose:** To practise developing responses to market constraints and opportunities. (Participants should have read Handout 6.3A prior to this exercise.)

**Method:** Brainstorming.

**Materials:** (i) Pen and paper.

*Allow 45 minutes for this exercise*

### Procedure

1. Write out a range of possible marketing constraints and opportunities on individual slips of paper. Fold the papers and place them into separate piles – one for constraints and one for opportunities.

---

#### Note

There should be enough constraints and opportunities to make sure all of the teams have the same number of each.

---

2. Ask the participants to get into their farm teams.
3. Each team in turn takes one folded paper from the pile. This is repeated until all the papers are taken.
4. Using the basic constraints and opportunities matrix shown in Handout 6.3A, each team consults and works out possible solutions for the constraints and actions for opportunities.
5. Teams share their decisions with the rest of the participants.

***Exercise introduction***

*This exercise aims at providing the participants with the skills to prepare a marketing plan.*

*It is designed as a field exercise where the participants visit a local market to gain practical experience in preparing a marketing plan. The facilitators will need to spend time upfront to organize the field trip and prepare the background for the visit.*

## Exercise 6.3B

### Preparing a market plan – a market visit

**Purpose:** To prepare a market plan after a visit to a local market.  
(Have participants refer to Handout 6.3B.)

**Method:** Observation, checklist and planning.

**Materials:** (i) Handout 6.3B (Preparing a market plan), (ii) pen and paper.

*Allow 3 to 4 hours for this exercise*

---

#### Note

The facilitator will need to make advance arrangements for a field trip to a local or municipal market where a variety of products are offered for sale. Participants must be able to speak to sellers, buyers and officials in the market. It would be wise to interview these market personnel prior to the visit to ensure their willingness to contribute the time. Depending on what is available in the market, the facilitator may need to adjust the commodities in this exercise.

---

### Procedure

1. Divide the participants into their farm teams.
2. Ask each team to create a checklist of market related questions for each enterprise and to prepare a blank checklist for a crop they do not currently produce (facilitator to assign from the list in Handout 6.3B).

*Exercise 6.3B (continued)*

3. Explain that each team will go to the market to learn about the conditions of the market for the products on their team farms. They will also be looking for information about the market for the product that they have been assigned.
4. Take the team to the marketplace.
5. Each team conducts its market survey.
6. Return to the training venue.
7. Each team works on their market plan for their current products plus one product that they do not currently produce.
8. Each team shares their reports with the rest of the participants.

*Encourage discussion about the market plans.*

Space for notes  
and questions  
for the facilitator

## Planning for the market

Marketing is the key to successful farm profit-making. Farmers can improve their skills in marketing by understanding how the market functions, collecting market information, formulating a marketing strategy and preparing a market plan. Understanding the market was covered in Session 2.4. The importance of market information was referred to in Module 3. This section will cover the market plan and strategy.

Marketing can be quite complex for the individual farmer, and it is often more useful if farmers market their produce as a group. Likewise, it is often more useful for farmers to prepare a market plan as a group. The extension worker can be useful in assisting farmers in formulating strategies and preparing a marketing plan and in facilitating group and individual farmer marketing.

### The essential principles of marketing

Farmers producing for the market should be in the position to answer six questions that marketing specialists pose that all begin with the letter "P". These are:

People      Plan      Product  
Place      Price  
Promotion

These principles are all important for successful marketing.

**People.** Who are the people we market to? Who buys the product? What are their wants and needs? Who are the people marketing the product? People need the farmer to be friendly, efficient and knowledgeable about the product.

*Planning for the market (continued)*

**Plan.** What is the plan for marketing? What are the steps that need to be taken to market the product? In what way will the farmer market the product to the customers?

**Product.** What is the nature of the product that will be sold in the market? This includes the taste of the product and other characteristics that consumers prefer. Is the product what the customer wants? Are the quantity, packaging and size what the consumer wants? Is the appearance of the product appealing? Are the products labelled? Are the labels clear? Can they be seen? Are they attractive? Does the product have a brand name?

**Place.** Where is the marketplace? How far is it from the farm? How should the produce be sold? What form of transport is proposed? What are the benefits of working with different types of distributors? How can distributors be supplied? What are the requirements of the different distributors in terms of quantity, delivery and price? What are the costs involved in the different distribution options?

**Price.** What price or how much is the farmer going to charge for the products? Is the farmer a price taker or a price maker? Who are the main competitors? What are the prices that they sell for? How are competitors likely to respond with respect to price if a new product is placed on the market? What are the price variations that exist between consumers in different locations? How can I take advantage of these differences?

*Planning for the market (continued)*

**Promotion.** How can I promote my product? How can I inform people about my product? Do I need to advertise? Can I afford to do so by myself? What other ways can I promote the product? How much will it cost me if I promote it? How should I set my price?

**What do most customers really want?**

Quality	No pest damage
Low price	Good packaging
Uniformity of produce	A wide selection
Sufficient quantity	Clean produce
Consistency	Accessible produce
Freshness	Good labelling
Nutritious food	Knowledge of who produced it
Health promoting food	Receiving the produce on time
Attractive products	A list of ingredients
Good taste	Instructions on how to prepare it

**The marketing plan**

The purpose of the marketing plan is to identify customers and competitors and outline a strategy for attracting and keeping customers. This takes careful planning and a good understanding of the market in order to develop a strategy that ensures success.

*Planning for the market (continued)*

A marketing plan for a product or group of similar type products should answer the following questions:

- Who is the customer?
- What does the customer want?
- Is this product in demand?
- How many competitors are providing the same product?
- How can demand for the product be created?
- Can the farmer effectively compete in price, quality and delivery?

The marketing plan should address these questions. A good marketing plan begins with thorough knowledge of the products to be produced and of potential customers. Knowing who buys and why are the first steps in understanding how best to sell. A marketing plan should cover the following topics:

***The current market situation.*** The general background on the market in which the product will be sold. It begins with a general idea of who the buyers are and what they want, followed by anything else that describes the market in which the products would be sold (e.g. existing supplies, packaging preferences).

***Constraints and opportunities analysis.*** Based on an assessment of the market opportunities, the farmer identifies the opportunities and constraints that the farm faces and realistically evaluates the farm's internal strengths and weaknesses in dealing with its market situation.

***The marketing strategy.*** Based on the analysis carried out above, the farmer draws up a plan to address the marketing objectives of the farm. The strategy should include a clear definition of consumers, customer needs and the prices attained for produce sold.



*Planning for the market (continued)*

Below is a matrix showing constraints, solutions, opportunities and actions. It is one way of assisting the farmer in analysing what possible strategies to formulate. The matrix enables the farmer, with the help of an extension worker, to appraise rapidly whether it is worthwhile producing a farm enterprise, provide possible solutions to problems, and identify opportunities to enter a market and make profits.

**Matrix of constraints and opportunities**

<b>Constraints</b>	<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• No local market</li> <li>• Poor transport services</li> </ul>	<ul style="list-style-type: none"> <li>• Potential exists for early crop production when supplies are short</li> </ul>
<b>Solutions</b>	<b>Actions</b>
<ul style="list-style-type: none"> <li>• Organize a local farmers' market</li> <li>• Encourage buyers to use their own transport</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage growing early crops and develop appropriate production techniques</li> </ul>

**Analysis of constraints and opportunities**

Solutions to marketing problems are often relatively simple and should not require major changes to be made in production or new technologies to be introduced. When the marketing plans become complex they are more likely to fail. In the marketing plan, the farmer looks for the right combination of factors that will satisfy the needs of the consumers and increase farm profits. The plan, once prepared, should be assessed to see whether it is realistic and likely to improve the overall competitiveness of the farm.

*Planning for the market (continued)***Usefulness of the marketing plan**

The marketing plan directs the farmer towards trying to understand what the customer wants. Why are customers so important? The answer is simple. They are, ultimately the source of income for the farm to cover the cost of daily operations, to repay debts and to make a profit. A marketing plan is necessary for any successful farming activity. Marketing offers farmers the information that, if applied correctly, will allow them to better generate profit. A good marketing plan may boost sales and increase profit margins. Farmers must be able to convince customers that they have the best product for them at the lowest possible price. If farmers cannot convince potential customers of this, then they will be wasting time and money. This is where the marketing plan comes into play and why it is useful. The market plan should help the farmer:

- know how much produce can be sold;
- plan production and have enough to sell;
- do what is needed to make a profit;
- identify competitors and what they are good at by comparison to other farmers;
- identify new crops to grow;
- identify new and/or potential customers;
- identify weaknesses in the farmer's management skills;
- identify weaknesses in the overall business plan.

**What does a marketing plan contain?**

The marketing plan could be prepared with information gathered by asking the questions set out in the next pages.

*Planning for the market (continued)***Product information**

The product and its benefits should be described from the consumers' perspective. Farmers should know, or at least have an idea of, what the consumers want and what is available.

- \_\_\_ What are the main crops grown and livestock reared including varieties/breeds?
- \_\_\_ When are the crops harvested? What are the yields per unit, prices attained and volume produced?
- \_\_\_ What are the advantages of these crops and/or livestock over others in terms of yield, quality, price and seasonality?
- \_\_\_ Is the produce graded? If so, into what grades?
- \_\_\_ Has the produce been 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/livestock?
- \_\_\_ Are any new technologies or practices being tried on this crop/livestock? Have they been successful?
- \_\_\_ What are the main production problems?
- \_\_\_ What quantities can farmers in the area produce and do these allow for scale economies in transport and marketing?

**Input supply and financing**

- \_\_\_ Are the inputs required readily available for all farmers?
- \_\_\_ Are they of the right quality?
- \_\_\_ Do input suppliers provide advice to farmers? If so, how good is the advice?

*Planning for the market (continued)*

- \_\_\_ Do farmers have money to pay for these inputs?
- \_\_\_ Do farmers have access to credit for working capital and long-term loans?
- \_\_\_ What are the sources of credit available? What type of collateral is required and how available is the finance?
- \_\_\_ Can farmers readily obtain equipment either to buy or hire?

**Local marketing system**

- \_\_\_ How is the crop/livestock 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?
- \_\_\_ Is there competition between buyers?
- \_\_\_ Is there a wide variation between the prices received by farmers for similar produce in the same area? If so, why?
- \_\_\_ Do buyers provide credit to farmers and on what conditions?
- \_\_\_ Do buyers expect credit from farmers in the form of deferred payment?
- \_\_\_ How is produce transported to the market?
- \_\_\_ What are the main markets and where is produce sold?
- \_\_\_ Who provides transportation?
- \_\_\_ What is the unit price of transport to the different markets?
- \_\_\_ How long do the journeys take? How frequently does the transport leave the area?

*Planning for the market (continued)*

- \_\_\_ 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?

**Product requirement by market***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?

*Planning for the market (continued)**Storage*

- \_\_\_ Is the crop/livestock produce stored? If so, 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 product a price taker or a price maker?
- \_\_\_ What way can premium prices 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?

*Planning for the market (continued)**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?

**Under-utilized local resources**

- \_\_\_ What local resources/facilities (if any) (e.g. food processing, empty returning transport, cool rooms facilities, box manufacture, local radio, central telephone links to the market) are not being fully utilized?

**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?

The next step for the market-oriented farmer is to ensure that farm production matches what consumers want to buy. The first question the farmers must ask themselves is *not* what I can grow, but what do my potential customers want? This is a shift in emphasis, and extension workers need to guide farmers to understand the importance of this change.

*Space for notes  
and questions  
for the facilitator*

## Preparing a market plan

### Procedure

1. Participants get into their farm teams.
2. Your team is to create a marketing checklist for each enterprise and to prepare a blank checklist for a crop you do not currently produce (facilitator to assign from the list below). Use the market plan form below.
3. Each team will go to the market to learn about the conditions of the market for the products on your team farm. You will also be looking for information about the market for the product that they have been assigned.
4. Go to the marketplace as arranged by the facilitator.
5. Conduct your market survey.
6. Return to the training venue.
7. Work on your market plan for your current products plus for the product assigned to your team. Justify how you arrived at your marketing plan.
8. Share your reports with the rest of the participants.

### Crop assignments

- pork meat
- citrus
- vegetables
- bananas
- pineapple
- other\*

\* crop suitable to the area in which the course is being held



**Worksheet — Marketing plans format**

Marketing strategies						
Enterprise	When?	How much?	Where?	To whom?	Farmgate price	Likely problems



## The farm plan

*This session is the melting pot of the entire programme. It is a day-long exercise. It asks the participants to develop a farm plan through a step-by-step process that integrates key skills and tools learned in this programme. It will also contextualize the farm plan in a wider community to reinforce the idea that farmers do not farm in isolation, but operate within a larger economic system, which they impact and which impacts upon them.*

---

### *Opening statement*

*Now that we have an understanding of the concepts of farm management and have covered the farm management tools in some detail, we are in a position to bring the learning together and prepare a farm plan. The participants will refer back to the virtual farms they produced earlier with the intention of following a similar procedure to prepare a complete farm plan. Selection of farm enterprises should build on the market planning exercise but it also will be necessary to plan for their household food needs and make sure that sufficient cash and labour is available. We shall review the main parts of Handout 6.4A. Feel free to ask questions.*

---

## Exercise 6.4A The farm plan

**Purpose:** To develop a total farm plan for food and cash. (Participants should have read Handout 6.4A prior to this exercise.)

**Method:** \_\_\_\_\_

**Materials:** (i) Handout 6.4B (Gross margin data for farm plan), (ii) flip chart paper or newsprint, (iii) thick marking pens, (iv) heavy paper or light cardboard

*Allow a full day for this exercise*

---

### Note

Steps 1–10 are conducted in farm teams; Step 11 is to be carried out by each individual participant. Ask the participants to refer to their copies of Handout 6.4A for the specific instructions for this exercise. The 11 steps in the handout are summarized below as a brief guide for the facilitator when conducting this segment.

---

## Procedure

### Work by farm teams

1. *Analysing resource capital.* Analyse the natural, human, financial, physical and social resources of your farm.
2. *Planning food production.* Determine the food needs for your family, choose the food crops you will grow and determine the hectares required to produce sufficient food for your family.
3. *Choosing your cash crops.* Use gross margins to identify the most profitable cash crops.
4. *Choosing your livestock enterprise.* Select a livestock enterprise and calculate its gross margin.

*Exercise 6.4A (continued)*

5. *Testing labour availability.* Determine how much labour you require and how much can be supplied by your family and how much needs to be hired.
6. *Checking for sustainability.* Reassess the stresses and potential shocks that affect the sustainability of your family farm.
7. *Preparing a farm map.* Draw a map of your farm including all the enterprises and the flow of resources onto and off from the farm. You will need two versions: A4 to attach to your report; flip chart size to use for your presentation.
8. *Estimating whole farm gross margin.* Calculate the gross margin for your entire farm.
9. *Estimating whole farm net income.* Calculate the net income or profit of your entire farm.
10. *Assessing household cash flow.* Test the effect of your crop choices on your household cash flow.

**Work by individual participants**

11. *Preparing a written report of your farm.* Present a brief written account of your farm. The report is to include neat copies of all of the products (symbol and number-based) from each of the 10 steps in the exercise. The report should also include a brief (one page) reflection on what insights you gained by participating in this exercise. (Do not write about the content such as gross margins.)

*It may take a number of hours to produce the final report*

**For the facilitator**

*If you need/want to include crops other than those listed in the handout for use in this exercise, you will need to prepare the relevant tables of input costs, yields and prices, etc.*

*In addition to the details in the two handouts, you will need to do the following:*

- 1. Allocate a family to each team. To do this, put the names of each team into a pile. One by one draw each name and write it into the table below. When all the names have been drawn you can copy the list or put it up where all the participants can see it.*

Team	Female child	Female adult	Male child	Male adult	Total
1	3	0	1	2	6
2	0	1	2	3	6
3	1	2	3	0	6
4	2	3	0	1	6
5	3	0	1	2	6
6	3	1	2	3	9
7	0	2	3	0	5
8	1	3	0	1	5
9	2	0	1	2	5

- 2. Allocate crop and livestock yields to each team. Each crop in Handout 6.4B has a yield range. See below. You need to allocate a yield to each team. Try not to give all high or low yields to a single team.*

<i>Vegetables: \$1 000/tonne</i>				<i>Yield range</i>			
				10	12	14	16
Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
400	350	250	1 500	150	150	300	50

*For the facilitator (continued)*

1 head of cattle (dairy, meat or both)

**Meat: \$10/kg; Milk: \$2/litre**

Feed	Labour	Equipment	Medicine
200	50	150	100

*Yield range: 4 6 8 10 litres per day*

*Yield range: 600 700 800 900 kg at time of sale*

3. *Advise the teams of the following household expenses.*

School fees	\$10 per year per child
Clothing	\$5 per year per person
Medical expenses	\$5 per year per person
Food and miscellaneous household purchases	\$20 per year per person
Other	\$2 per year per person

4. *Special instructions for financial capital assessment in Step 1. To calculate the total income from the community woodlot for the exercise use \$120 per household/farm. This amount is used to make sure there is enough to distribute with meaning, but not so easy to detect that it has been calculated on the number of farms. You do not want to influence the community negotiations with a convenient answer.*

***This exercise can be done on an individual basis with participants assigned a unique family size or yields and then carrying out all of the steps on their own.***

5. *When the assignments are done, ask each team to make a presentation in which they describe their farm (using the large version of the map) and explain their enterprise choices, gross margins and net incomes.*

*Encourage discussion about the various plans and decisions made. Encourage the teams to 'critique' the presentations and farm plans.*





*Space for notes  
and questions  
for the facilitator*

## The farm plan

### Objectives

To develop a farm plan that generates the greatest profits within the constraints of factors such as labour, land, access to credit, mechanization (and within the constraints of Exercise 6.4A).

### Exercise constraints

During this course you have been learning a number of tools that can be used for analysing and planning a farm. In this session you will now use these tools to plan your own farm as if you were a semi-literate smallholder farmer. You will be provided with enough information to calculate gross margins and food balances, etc.

Factors you will need to take into consideration when planning your farm:

**Farm size.** Your total farm size is 5 ha

**Food.** Households must produce food based on a food balance calculation. The family must meet all its calorie requirements from the farm. What is planted should reflect what is common in the area you work as an extension worker (e.g. grain crops or root crops).

**Market plan.** You have already made a market plan that was based on the crops that can be grown on your farm. When planning your farm, you must take into consideration at least two of these.

*The farm plan (continued)*

**Symbols for mapping.** As part of the exercise, you will create a farm map, which will be a combination of a map that represents the physical farm and a map that shows the flow of resources and products onto and off from the farm. You will need to have symbols for each resource, output, process, etc. You may use existing symbols (that you made earlier) and make new ones as needed.

The final farm plan must consist of:

- 1 livestock enterprise  
(very small-scale around the homestead)
- 2 food crops
- 1 cash crop

Please avoid the temptation to do more than this, as it will complicate your calculations.

**Steps in the development  
of a total farm plan**

Step 1

**Resource capital analysis**

The first step in planning your farm  
is to assess the resources available on the farm

**Human capital (family).** Establish the size of your family. This will be assigned to you by the facilitator. This information is needed to calculate your food balance and labour availability. Create symbols to represent family members.

*The farm plan (continued)*

**Natural capital.** Your farm is 5 ha in size and is rainfed (there is no irrigation set up on the land). (We realize this may be larger than average in the area you work in, but it is necessary for this exercise.)

The shape, slope, setting, soil type and other physical features of the farm are left for you to decide. When you have decided these details, create a map of your farm as you did in your earlier sessions. You could determine and express this in the form of a transect resource assessment.

Based on your physical description of your farm, establish what crops can be grown on your farm. This should be drawn from your experience in the field.

Note for your farm maps, the community of which you are a part has community woodlot that generates an income. See financial capital below.

**Physical capital.** In Session 3.2 you did an inventory of the physical capital on your farm. You should look at this information again and make any changes you think are necessary.

**Financial capital.** In Session 2.2 you did an assessment of the financial capital on your farm. You should look at this information again and make any changes you think are necessary.

*The farm plan (continued)*

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**Important note**

In addition to the financial capital you calculated above, you have income from the sale of wood from the community woodlot. Your income is not fixed and needs to be negotiated each year with the community. In this exercise, all the farm teams combined represent the community. When you calculate your household cash flow (see Step 10) you will need to know how much income you can expect from the community woodlot. Therefore, at some point in the planning of your farm, someone will need to call a community meeting of all the farm teams. The meeting will not be called or facilitated by the course facilitator. When a meeting is called, the course facilitator will inform the community of the total income from the woodlot for the year. It will be up to the community to determine: (i) In which months the income would be expected. (It is not a steady income), (ii) The basis on which the shared income will be distributed to the community members and when each family will be paid.

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**Step 2****Food production**

Based on your family size, calculate a food requirement to determine how many kilograms of coarse food you will need to produce on farm. Decide which food crop to grow and select the most suitable land. Plant only one food crop. You may plant more area to your food crop than your family requires. Surpluses may be sold.

*The farm plan (continued)*

For the purposes of this exercise, you will need to choose the food crop from one of the following, depending on your country's experience:

Maize	Wheat	Rice	Millet
Yams	Cassava	Sorghum	

Calculate the amount of land needed to grow your food crop. Subtract this from the 5 ha and this will give you the balance of land available to plant your other crops. Use existing symbols or make new ones as needed.

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**Note**

Most families would plant more than one food crop, but it is not practical for the purposes of this exercise. It makes the calculations too long.

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**Step 3****Choosing your cash crops**

Now you need to decide which crop to plant for cash. You will choose only two crops from among the various crops that can be grown on your farm. To make this decision each member of your farm team must calculate the gross margins for at least one different crop. At least two of these crops must come from your market plan where you discovered new opportunities for cash crops.

Gross margins are to be calculated on a per unit basis, such as per hectare or per acre. Use whichever unit is common in your area. (Note: You may not use the gross margin from Module 4 because that crop won't grow in your area.)

*The farm plan (continued)*

To make crop choices, you need only annual gross margins. Later in the exercise you will need to extend them to monthly gross margins. Remember, you must do the calculations using symbol-based tools.

The course facilitator should have gross margin information sheets for a variety of crops. Keep careful track of labour requirements for each of the crops.

When you have completed the gross margins, choose the two crops with the highest gross margin to plant on your farm.

Now you need to decide how much of these two crops to plant on the remaining land on your farm. You will want to consider things such as labour requirements, market access. Perhaps the crop with the higher gross margin is also more risky to grow. Do you want to specialize or spread your risk?

**Step 4****Choosing your livestock enterprise**

Your household supplements its income through a livestock enterprise around the homestead. The livestock do not utilize any of the arable land. Your choices are limited to:

- 1 head of cattle (milk or meat or both)
- 10 chickens (eggs or meat or both)
- 2 goats (milk or meat or both)
- 2 pigs (meat)

Each of these constitutes 1 unit.

For the purpose of this exercise, you can simply decide what you would like to raise. You do not have to use the gross margins to choose the livestock enterprise. Once you have decided, calculate the gross margin for your livestock enterprise. In this case it should be an annual gross margin.

*The farm plan (continued)*

After finishing the gross margin, make a note of how the livestock is being fed. If it is being fed from crops from your farm, you will have to account for that later in your cash flow.

Do you need to finance special feeds (e.g. for laying hens)? Do you need to finance the purchase of the livestock itself? Do you have the cash to pay for this? Will you have to borrow money? Use your handouts on financing options to help you think about this. Make a note of these decisions so you can map them later.

The course facilitator should have gross margin information sheets for a few livestock options.

Step 5  
**Testing labour availability**

Now that you have decided on the number of hectares for your one food crop and two cash crops and you have chosen your livestock enterprise, you need to do a labour analysis. To do this you will need to use:

- the labour analysis tool;
- the labour requirement information from the gross margin information sheets for your chosen crops and livestock enterprise (including the food crop).

Set up a table to analyse the labour for all your enterprises. Compare this to the labour available in your household. Do you have enough labour to do all the work? If not, how will you solve this? Will you plant different crops? Change livestock enterprises? Hire labour? Migrant? Local? Casual? Permanent? Contract? Organize a work party?

*The farm plan (continued)*

Do the calculations and make the analysis. Does this affect your choice of crops? Remember to calculate the labour required for the *actual* hectares planted.

Step 6  
**Sustainability check**

As you did in Session 3.4, discuss the sustainability of other factors influencing productivity and profitability. How reliable are your input suppliers and markets? Are there any actions you must take to strengthen linkages against vulnerabilities? Does anything indicate you should change your choice of crops?

Decide finally on your enterprises.

Step 7  
**Farm map**

Now that you have decided on your enterprises, it is time to make a physical plan for your farm. Create symbols for the crops and livestock.

First use just the symbols to build up your map. Be sure to include specific information about markets, sources of inputs, credit, labour, water to the livestock. Be sure to include the community woodlot. In this case your map should reflect 'reality' for your farm. Your markets, input sources, etc. should all be specific.

When you have placed the symbols in all the correct places, link inputs and resources to the farm with appropriate arrows. Remember to use different size/marked arrows to indicate sustainability issues identified in the previous step. Arrows indicate actual links. If you are not using credit from a bank, do not put an arrow from the bank to your farm.



*The farm plan (continued)*

### Step 8

#### **Estimate the whole farm gross margin**

You have now finished your physical plan. The next step is to calculate the estimated gross margin for the whole farm. You have gross margins for your two cash crops and for your livestock enterprise. Now you must calculate a gross margin for the food crop. Handout 6.4B has been prepared to help you figure out the gross margins.

You now have gross margins for each of the enterprises. Remember, however, the crop gross margins are all in a unit base such as 1 ha or 1 acre. You need to convert these to match the actual size of land you are going to plant to each crop. This will estimate the gross margin for the real area to be planted.

When you have completed the conversions from unit based gross margins to actual acreage, you should have four matrices that look something like the template in Handout 4.2C. The total estimated gross margin for the whole farm will be the sum of the gross margins for each enterprise. This can be calculated by putting all the gross margin rows together and adding them up as shown in the example format on the next page.

### Step 9

#### **Estimate the whole farm net income or profit**

The total estimated net income (profit) for the farm is the sum of the whole farm gross margin less the fixed costs for the farm. As a reminder, fixed costs do not apply to a specific enterprise and they do not vary with changes in production. You should draw up a list of the physical assets of the farm and assess their value. Refer to the Handout 4.2A and the section on additional reading to guide you in computing depreciation.

*The farm plan (continued)*

## Estimated whole farm net income

Enterprise	Ha or unit	Gross margin/unit (\$)	Gross margin (\$)
Sorghum			
Maize			
Groundnuts			
Eggs			
<b>Totals (A)</b>			

Fixed Costs (B)

Net farm income (A-B)

*The farm plan (continued)*

Step 10  
**Household cash flow**

Now that you have chosen all of your enterprises, you need to work a cash flow to make sure you can finance your chosen enterprises and to determine if there are any periods of negative cash flow. Based on the results of your cash flow, you may need to reconsider enterprise choices. The cash flow should be calculated using symbol-based tools.

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**Note**

In order to calculate the cash flow, you will have to convert the annual gross margins of your four enterprises to monthly gross margins. Use the examples given in Module 4 to guide you.

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Step 11  
**Written report of your farm**

Each team member will write and present a brief written account of their farm. The report is to include neat copies of all of the products (symbol and number-based) from each of the 10 steps in the exercise. The report should also include a brief (one page) reflection on what insights you gained by participating in this exercise. (Do not write about the content, such as gross margins.)

## Worksheet – Gross margin data for farm plan

Dollars per ha per season

Crop enterprises

*Cassava: \$250/tonne*                      *Yield range: 10                      12                      14                      16*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
200	150	150	350	150	150	300	50

*Cotton: \$500/tonne*                      *Yield range: 10                      12                      14                      16*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
300	350	300	600	150	150	200	50

*Maize: \$500/tonne*                      *Yield range: 4                      5                      6                      7*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
200	150	100	300	150	150	300	50

*Millet: \$350/tonne*                      *Yield range: 5                      7                      9                      11*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
200	150	100	300	150	150	150	50

*Sorghum: \$300/tonne*                      *Yield range: 5                      7                      9                      11*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
100	150	100	200	150	150	100	50

*Vegetables: \$1000/tonne*                      *Yield range: 10                      12                      14                      16*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
400	350	250	1 500	150	150	300	50

*Wheat: \$600/tonne*                      *Yield range: 7                      9                      11                      13*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
300	250	100	300	150	150	300	50

*Yams: \$200/tonne*                      *Yield range: 10                      12                      14                      16*

Seed	Fertilizer	Pesticide	Labour	Ploughing	Planting	Harvesting	Transport
150	150	150	250	100	150	100	150

*Worksheet – Gross margin data for farm plan (continued)*

## Livestock enterprises

1 head of cattle (dairy, meat or both)

**Meat: \$10/kg; Milk: \$2/litre**

Feed	Labour	Equipment	Medicine
200	50	150	100

Yield range: 4 6 8 10 litres per day

Yield range: 600 700 800 900 kg at time of sale

10 chickens (eggs, meat or both)

**Eggs: \$0.20/egg; Meat: \$2/kg**

Feed	Labour	Equipment	Medicine
400	50	150	0

Yield range: 5 6 7 8 eggs per week

Yield range: 2 3 4 5 kg at time of sale

2 goats (milk, meat or both)

**Meat: \$5/kg; Milk: \$1.5/litre**

Feed	Labour	Equipment	Medicine
200	50	100	50

Yield range: 5 7 9 11 litres per day

Yield range: 20 25 30 35 kg at time of sale

2 pigs (meat)

**Meat: \$10/kg**

Feed	Labour	Equipment	Medicine
400	50	50	100

Yield range: 150 170 190 200 kg at time of sale

**Note:** the rate of pay for labour is \$100 per person (per hectare) per season



## Review of Module 6

*At the end of this module participants should have a comprehensive understanding of market planning and the skills necessary to assist farmers as individuals and groups to prepare farm business plans. It should be understood that planning skills are critical as farming is becoming more market-oriented.*

*The following outline will guide the facilitator in a brief review of the activities of this module.*

### **Session 6.1**

#### **The planning process**

*Purpose of this session:*

*For the participants to understand the need to follow a systematic approach to farm planning and that planning is part of an iterative cycle.*

#### **Learning outcomes**

Understanding (i) the different steps in the planning process,  
(ii) how to apply farm management tools at different stages of the planning cycle.

### **Session 6.2**

#### **Farm performance analysis**

*Purpose of this session:*

*To provide the participants with a methodology that they can use as extension workers that allows comparisons to be made in farm performance and identifies weaknesses and ways of addressing them through better planning.*

#### **Learning outcomes**

(i) Understanding the purpose of performance analysis and its potential value in extension,  
(ii) developing the skills to carry out performance analyses.



### **Session 6.3**

#### **Planning for the market**

*Purpose of this session:*

*To get the participants to understand that farm planning starts with the market and assessing what the customer wants.*

#### **Learning outcomes**

Understand that farmers need (i) to plan for the market, (ii) to have the ability to develop a market strategy/plan, (iii) to identify opportunities for enterprise diversification.

### **Session 6.4**

#### **The farm plan**

*Purpose of this session:*

*To complete the learning cycle by getting the participants to prepare a farm plan that draws on the some of the concepts, tools and techniques taught through the training programme.*

#### **Learning outcomes**

Understanding (i) how to prepare a farm plan, (ii) the changes in the farm (before and after) and implications on resource allocation, (iii) the enterprise combination and implications that lead to higher farm income, (iv) the iterative process of planning and the need to satisfy more than a single objective.

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#### ***Closing questions***

*Ask participants if they feel that the overall purpose of the module has been achieved and if they have understood the planning process and improved their skills and competency in diagnosing the farm performance, planning for the market and, finally, preparing a farm plan.*

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

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**Market-oriented farming begins by determining what buyers want, in what form and when they want it. The market dictates what to produce. Production and marketing are closely interrelated and both aspects affect the performance of the farm business. Module 6 outlines what farmers and extension workers need to know about the planning process, farm performance and the market in order to increase profitability.**