Learner Guide
Primary Agriculture

Production systems in an agri-business

My name: ________________________________
Company: ________________________________
Commodity: _______________ Date: ____________

The availability of this product is due to the financial support of the National Department of Agriculture and the AgriSETA. Terms and conditions apply.
Before we start...

Dear Learner - This Learner Guide contains all the information to acquire all the knowledge and skills leading to the unit standard:

<table>
<thead>
<tr>
<th>Title</th>
<th>US No</th>
<th>NQF Level</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define and understand production systems and production management.</td>
<td>116115</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

The full unit standard will be handed to you by your facilitator. Please read the unit standard at your own time. Whilst reading the unit standard, make a note of your questions and aspects that you do not understand, and discuss it with your facilitator.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently doing:

<table>
<thead>
<tr>
<th>Title</th>
<th>ID Number</th>
<th>NQF Level</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Certificate in Animal Production</td>
<td>48976</td>
<td>2</td>
<td>120</td>
</tr>
<tr>
<td>National Certificate in Mixed Farming Systems</td>
<td>48977</td>
<td>2</td>
<td>120</td>
</tr>
<tr>
<td>National Certificate in Plant Production</td>
<td>48975</td>
<td>2</td>
<td>120</td>
</tr>
</tbody>
</table>

Please mark the learning program you are enrolled in:

<table>
<thead>
<tr>
<th>Are you enrolled in a:</th>
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<tbody>
<tr>
<td>Learnership?</td>
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<tr>
<td>Skills Program?</td>
</tr>
<tr>
<td>Short Course?</td>
</tr>
</tbody>
</table>

Your facilitator should explain the above concepts to you.

This Learner Guide contains all the information, and more, as well as the activities that you will be expected to do during the course of your study. Please keep the activities that you have completed and include it in your Portfolio of Evidence. Your PoE will be required during your final assessment.
What is assessment all about?

You will be assessed during the course of your study. This is called *formative assessment*. You will also be assessed on completion of this unit standard. This is called *summative assessment*. Before your assessment, your assessor will discuss the unit standard with you.

Assessment takes place at different intervals of the learning process and includes various activities. Some activities will be done before the commencement of the program whilst others will be done during programme delivery and other after completion of the program.

The assessment experience should be user friendly, transparent and fair. Should you feel that you have been treated unfairly, you have the right to appeal. Please ask your facilitator about the appeals process and make your own notes.

How to use the activity sheets...

Your activities must be handed in from time to time on request of the facilitator for the following purposes:

- The activities that follow are designed to help you gain the skills, knowledge and attitudes that you need in order to become competent in this learning module.

- It is important that you complete all the activities and worksheets, as directed in the learner guide and at the time indicated by the facilitator.

- It is important that you ask questions and participate as much as possible in order to play an active roll in reaching competence.

- When you have completed all the activities and worksheets, hand this workbook in to the assessor who will mark it and guide you in areas where additional learning might be required.

- You should not move on to the next step in the assessment process until this step is completed, marked and you have received feedback from the assessor.

- Sources of information to complete these activities should be identified by your facilitator.

- **Please note** that all completed activities, tasks and other items on which you were assessed must be kept in good order as it becomes part of your *Portfolio of Evidence* for final assessment.

Enjoy this learning experience!
How to use this guide ...

Throughout this guide, you will come across certain re-occurring "boxes". These boxes each represent a certain aspect of the learning process, containing information, which would help you with the identification and understanding of these aspects. The following is a list of these boxes and what they represent:

What does it mean? Each learning field is characterized by unique terms and definitions – it is important to know and use these terms and definitions correctly. These terms and definitions are highlighted throughout the guide in this manner.

Activity
You will be requested to complete activities, which could be group activities, or individual activities. Please remember to complete the activities, as the facilitator will assess it and these will become part of your portfolio of evidence. Activities, whether group or individual activities, will be described in this box.

Example
Examples of certain concepts or principles to help you contextualise them easier, will be shown in this box.

How am I doing?
The following box indicates a summary of concepts that we have covered, and offers you an opportunity to ask questions to your facilitator if you are still feeling unsure of the concepts listed.

My Notes ...
You can use this box to jot down questions you might have, words that you do not understand, instructions given by the facilitator or explanations given by the facilitator or any other remarks that will help you to understand the work better.
What are we going to learn?

What will I be able to do? ................................................................. 6
Learning Outcomes ........................................................................ 6
What do I need to know? ................................................................. 6
Session 1: Production systems in an agri-business environment .......... 7
Session 2: Basic managerial tasks ..................................................... 17
Session 3: Additional production managerial tasks ......................... 26
Session 4: Goals and objectives in agri-business ............................ 36
  Am I ready for my test? ................................................................. 47
  Checklist for Practical assessment ................................................ 48
  Paperwork to be done ................................................................. 49
  Bibliography .............................................................................. 50
  Terms and Conditions ................................................................. 50
  Acknowledgements .................................................................... 51
SAQA Unit Standard
What will I be able to do?

When you have achieved this unit standard, you will be able to:

- Understand basic production systems, managerial tasks and management objectives in the agri-business environment.
- Understand the importance of the application of business principles in agricultural production with a specific reference to production and conversion.
- Understand production systems in an agri-business environment.
- Understand and define basic managerial tasks.
- Understand and define the additional production management tasks.
- Understand the process of setting goals and objectives related to systems within an agricultural business.

Learning Outcomes

At the end of this learning module, you must be able to demonstrate a basic knowledge and understanding of:

- Purpose of goals and objectives
- Aspects of the managerial tasks
- The structure of various agricultural production systems
- Basic presentation skills
- The basic components of managerial skills
- The setting of goals and objectives within an agricultural production set-up
- The purpose of learning about agricultural production and conversion systems
- The purpose of learning about management
- Understanding systems

What do I need to know?

It is expected of the learner attempting this unit standard to demonstrate competence against the unit standard:

- Define production and understand the basic activities of production conversion in the agri-business process (NQF Level 1).
Session 1 Production systems in an agri-business environment

After completing this session, you should be able to:

SO 1: Understand production systems in an agri-business environment

Key concepts that you will learn in this session:

- Market interaction;
- Natural resource limitations;
- The interaction between agricultural processes and environmental factors;
- Optimum use of resources for optimum outputs

1.1 Introduction

Production systems involve the use of a variety of production practices that are employed to produce a crop of the highest possible standard in terms of quantity, quality and size, in order to achieve production objectives. Coordinating the production systems requires effective production management.

Production practices are the actions and processes carried out to achieve production objectives, such as fertilization, irrigation, pest and disease control, pruning and harvest.

Production objectives are measured in term of yield (how much), export percentage, fruit size and external and internal quality.

Production management is the management of production systems and production practices.
Define and understand production systems and production management

Primary Agriculture  
NQF Level 2  
Unit Standard No: 116115

11.2 Market interaction

The interaction between input and output markets, as shown in Fig 1.1, is that inputs (resources) are obtained from input markets, while products are sold in output markets.

Knowing the output market is essential. The requirements of consumers, wholesalers and retailers (market demand) determine many of the decisions that are taken in respect of production practices. Getting the highest possible return for the product that is produced will ultimately determine the commercial success of the farming operation.

In South Africa, about 60% of commercially grown citrus is exported as fresh fruit. Of the balance, about 25% is sold on the local market and 15% is sent for processing at juice factories. Yet over 90% of total revenue is generated from exports. For this reason, production practices are geared toward maximising the export pack-out percentage by ensuring that the requirements of foreign consumers are met.

A production manager must stay on top of all the latest developments on the international market. This information drives the decisions made regarding all aspects of production, from cultivar selection, to the selection of chemicals, to the

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Figure 1.1: Production Conversion demonstrates the conversion process involved in, as an example, citrus production, where resources (inputs) are converted by a production system to a product, being citrus fruit (output).
Define and understand production systems and production management

Primary Agriculture  NQF Level 2  Unit Standard No: 116115

9

timing of the harvest. All these decisions are strongly influenced by market demand.

Increasingly, the higher paying markets are insisting that producers demonstrate their knowledge of and compliance with environmental regulations. These regulations are in some cases legally enforceable and in other cases set as entry requirements to output markets.

**Good agricultural practices** (GAP) regulations aim at meeting consumers’ needs for products that are of high quality, that are safe to eat, and that are produced in an environmentally and socially responsible way. Producers who apply GAP would minimise the use of chemicals to prevent harming the natural environment. This process is commonly known in the industry as Integrated Crop Management.

### 1.3 Natural resource limitations

Resources include those inputs that are fixed in relation to a particular site, such as land and water. These are known as natural resources, while mobile resources include labour, capital, planting material and knowledge. (See to figure 1.1.) We can always source more/additional mobile resources, but not fixed resources.

Natural resources are, by definition, limited. More land or more water cannot be produced, and available natural resources must therefore be treated with respect if the farming operation is to be successful. The availability of these resources to meet the long-term needs of the enterprise is of critical importance.

The potential of a certain site for production depends on its climatic suitability for the varieties to be grown and the status of the fixed or natural resources, specifically the availability of sufficient high quality water and suitable soil.

All resources come at a cost and the scarcer the resource, the higher the cost. Land and water are scarce, expensive, and have to be used efficiently.

Only about 13% of South Africa’s surface area can be used for crop production, which is referred to as arable land. Only 22% of this area is considered to be high-potential arable land. Suitable land is the primary fixed resource and without it, nothing can be produced.

Issues to consider when deciding whether or not land is suitable for the production of a specific crop include:

- Is the land of sufficient size to support the required plantings?
- Is the land located in the right climatic area to support the desired varieties?
- Is the land free from certain pests and diseases?
- Does the land have sufficient areas of the required soil type and quality?
Define and understand production systems and production management

Primary Agriculture NQF Level 2 Unit Standard No: 116115

Version: 01                 Version Date: July 2006

Does the land have a sufficient supply of high quality water (as required by the crop)?

Is the land located close to sources of skilled and unskilled labour?

Is the land situated at an appropriate and manageable distance from packing and transport facilities?

The interaction between agricultural processes and environmental factors

It is not possible to produce a crop to meet market specifications without applying certain practices or interventions. This is because the planting of large areas to a single crop upsets the natural balance in the first place. The farmer finds himself in competition with nature. A source of food which did not exist before is created for various pests and diseases. In addition to this, different crops have to be manipulated in various ways to bear high yields of uniformly sized harvest entities of the desired quality.

The challenge facing the production manager is therefore to:

- Achieve yield targets;
- Ensure the products meet market quality specifications;
- In such a way that the process is sustainable; and
- Within the framework of Good Agricultural Practices

Environmentally speaking therefore, production must be managed in such a way that the processes can be used repeatedly throughout the lifespan of the production area (field, orchard) and beyond. This is achieved by minimising the use of harmful production practices and applying those that have minimum negative impact on the environment.

Examples of such production practices include:

- Selecting varieties best suited to the environment and climate;
- Using certified nursery material (in the case of trees and seedlings);
- Using pesticides with minimum impact on non-target insects;
- Minimising the use of soil tillage equipment; and
- Accurate and targeted use of fertilisers
Production practices are costly and some, especially broad-spectrum pest and disease control treatments, inorganic fertilisers and herbicides, can contaminate soil and run-off water. This causes pollution and reduces beneficial insect populations.

Production practices should therefore be carefully managed to achieve the desired production objectives with minimal harmful effects to the environment.

### 1.5 Optimum use of resources for optimum outputs

Natural and mobile resources should be deployed in an effective manner. This means avoiding wastage, duplication and incorrect resource application and timing. For example, water, which is a scarce resource, should be applied at the right times and in the right amounts. To achieve this may require that other resources, such as soil, be properly selected and prepared and that the labour (another important resource) used to apply the water be adequately trained.

Resources can also be under-used. For example, the establishment of a new a production area (field/orchard/animal husbandry area) requires adequate capital to be available for the purchase of high quality inputs (nursery materials/trees/animal breeding stock/irrigation system/required equipment). Capital is a resource which, if not available in a sufficient amount, can lead to an under-capitalised venture and likely failure.

In addition to the effective use of resources, appropriate systems, processes and procedures that enable the achievement of the highest income at the lowest cost, must be put in place. The highest income is achieved when resources are cost-effectively applied to optimise production and, in so doing, also enable the greatest possible proportion of yield to meet the demands and requirements of the best paying markets (either local or export).

Please complete Activity 1 and 2 at the end of the session.
<table>
<thead>
<tr>
<th>Concept (SO 1, AC 1 - 6)</th>
<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
</tr>
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<tbody>
<tr>
<td>The interaction with the market</td>
<td></td>
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<tr>
<td>The difference between the input market and the output market</td>
<td></td>
<td></td>
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<tr>
<td>The relationship between production systems and the input/output markets</td>
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<tr>
<td>The impact that the limited nature of natural resources has on production</td>
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<tr>
<td>The reciprocal interaction between agricultural processes and environmental factors</td>
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<tr>
<td>The concept of optimal usage of resources and optimisation of outputs</td>
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**My Notes ...**

...
1. Fill in the missing words

_Production systems_ involve the use of a variety of ___________ that are employed to produce a crop of the highest possible standard in terms of quantity, quality and size, in order to achieve ______________. Coordinating the production systems requires effective ________________.

2. In the table below are three concepts. In the right hand column are definitions. Match the concept with the correct definition writing the correct letter in the column provided.

<table>
<thead>
<tr>
<th>A: Production practices</th>
<th>The management of production systems and production practices.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: Production objectives</td>
<td>The actions and processes carried out to achieve production objectives, such as fertilisation, irrigation, pest and disease control, pruning and harvest</td>
</tr>
<tr>
<td>C: Production management</td>
<td>Measured in term of yield (how much), export percentage, fruit size and external and internal quality</td>
</tr>
</tbody>
</table>

3. Read the following case study and answer the questions that follow:

Case Study:

_Dumisani Matjabe recently bought a farm. The previous owner used to farm with Soya beans and potatoes. Dumisani does not want to grow these crops and has decided to grow pumpkins, cabbage and green beans instead. He is sure that if he grows a good crop he will be able to sell his produce._
• What is the likely scenario that Dumisani can expect, based on the knowledge that she has of the market input relevant to her situation?

• What do you think his return on his investment is likely to be?

4. Consider the words below and sort them into the two categories in the table.

*Capital, Cattle, indigenous forest, management staff, mountain spring, seasonal labour for harvesting, seedlings, soil, soil, grassland, water*,

<table>
<thead>
<tr>
<th>Fixed resources</th>
<th>Mobile resources</th>
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</tbody>
</table>

Facilitator comments:

Assessment:
Group Activity: Investigating a farm situation for planning

You have been divided up into small groups. Your task is to look at the piece of land identified, together with the production plan and assess the situation against the following questions:

Once you have discussed this in your group and decided, prepare a presentation to the rest of the group that answers all of these questions and, where appropriate, makes recommendations.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the land of sufficient size to support the required plantings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is the land located in the right climatic area to support the desired varieties?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is the land free from this crop's pests and diseases?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does the land have sufficient areas of the required soil type and quality?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does the land have a sufficient supply of high quality water (as required by the crop)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Is the land located close to sources of skilled and unskilled labour?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Is the land situated at an appropriate and manageable distance from packing and transport facilities?</td>
<td></td>
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</tr>
</tbody>
</table>
Use this space to draw a mind map of the key observations you would like to present.
Session 2

Basic managerial tasks

After completing this session, you should be able to:

SO 2: Understand and define basic managerial tasks

Key concepts that you will learn in this session:

♦ Setting objectives;
♦ Planning;
♦ Scheduling;
♦ Organizing
♦ Implementation
♦ Coordination
♦ Monitoring

2.1 Introduction

Successful agricultural production management depends on the effective application of standard management principles and practices. It is similar to managing any other complex project – similar steps are followed. These steps are as follows:

♦ Define, understand and clearly state the overall goal or objective of the operation or project, for example define the standards to which the end product has to comply;
♦ List the actions needed to achieve the end result (what has to be done)
♦ Naming the individuals who are responsible for the work (by whom)
♦ The deadline dates by when the various tasks have to be completed (by when);
♦ Define ways of evaluating and measuring progress and use results of this constant review process to influence future planning and operations (how will we know it is done/what will we do differently next time).
2.2 Setting Objectives

Setting objectives is concerned with the **what** of the farming operation, meaning finding answers to the question “What do we want to achieve?”

Some goals and objectives encompass a variety of challenges the most important of which are to:

- **Achieve per hectare yield targets** – This means that the production per hectare must achieve the targets that have been set in the annual budget. Annual targets would vary from enterprise to enterprise.

- **Ensure the end products meet market specifications** – The production manager must for example set production objectives to achieve the requirements of the markets. This could be in terms of size, colour or internal quality.

- **Ensure that the process is sustainable** - This means ensuring that the environment is not adversely or unnecessarily disturbed by the production processes, for example by pest control chemicals, fertilisers etc., so that high levels of production can be sustained over the lifetime of the production area or enterprise.

- **Remain within the framework of Good Agricultural Practices (GAP)** – GAP calls for care in the use of chemicals to ensure safety for all operators, the use of pesticides, fungicides and fertilisers in a systematic, careful and planned way, and the judicious application of water to prevent wastage, contamination and erosion.

Secondary objectives may apply to individual farming operations, but meeting the objectives stated above will ensure the overall success of the operation.

2.3 Planning

If goals are long-term, meaning that it will take more than a few years to achieve, or strategic, meaning that they apply to the farming operation as a whole, the planning involved in achieving these objectives will likewise be long-term and strategic in nature.

If, on the other hand, goals are short-
term, such as applying fertilisation before a certain date, a short-term operational plan or action plan is required.

Planning is concerned with thinking through, and when necessary, listing, the steps and actions required to progress from the present situation to a desired situation. These steps are planned in chronological order, together with whatever resources are required to complete each step.

We plan our every-day activities automatically, such as getting up and dressed in the morning. However, when it comes to more complex actions or tasks we have to put more effort and care into planning. For example, fixing a roof leak requires as a first step, a plan. This plan will include:

<table>
<thead>
<tr>
<th>What?</th>
<th>The wind blew some of the tiles off the roof and the south-eastern corner now leaks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>Tiles have to be replaced, plus insulation sheeting replaced.</td>
</tr>
<tr>
<td>How?</td>
<td>The problem should be addressed</td>
</tr>
<tr>
<td>By whom?</td>
<td>Contractor: Mr Fixit (cheapest of 3 quotes/preferred supplier)</td>
</tr>
<tr>
<td>What?</td>
<td>Tools and materials needed</td>
</tr>
<tr>
<td>Where?</td>
<td>The tools and materials will be acquired</td>
</tr>
<tr>
<td>How much?</td>
<td>Builders’ Warehouse (cheapest of three quotes)</td>
</tr>
<tr>
<td>By when?</td>
<td>R1200</td>
</tr>
<tr>
<td>When it should be completed?</td>
<td>31 August 2005</td>
</tr>
</tbody>
</table>

Without planning there would be no step-by-step sequence of actions taking us from where we are to where we want to go. Our actions would be random and we would waste time, energy and money in repeating certain steps and leaving out others, while compromising our chances of reaching our goal. In the process, we could do things that threaten the future of the business and harm the environment.

2.4 Scheduling

Scheduling the management term that involves entering or drawing up a timetable for the completion of various stages of a complex project, or the coordination of multiple related actions or tasks into a single time sequence. Scheduling is most commonly used with regard to repetitive tasks, such as the application of irrigation.
A schedule indicates the intervals between, or frequency of, actions. For example, a class timetable shows when different subject lessons will be taught and the intervals between similar lessons. In the same way, a bus roster shows the regular arrival and departure times of buses. These are different kinds of schedules.

In agricultural production the schedule could include:

Scheduling is important because it provides the manager and her/his staff with a fixed programme for carrying out required actions or tasks. Once a schedule to an action has been set and communicated, the expectation is that it will be strictly kept to.

### 2.5 Organising

Proper organisation means that different resources for a specific task are available when and how they are required.

For example, consider the planting of a new citrus orchard. The production manager has to ensure that all the necessary resources for this operation are available in the situation and at the time they are needed. Part of the labour force would be allocated to preparing the orchard lay-out, while another would install the irrigation system, and a third group would be unloading the nursery trees from the truck. In all cases, the manager has to ensure that the labour force has the right equipment to carry out their tasks effectively. At the same time, the manager has to ensure that he has allocated his capital effectively between the different parts of the planting program.

Clearly, effective organisation has to be preceded by good planning.

### 2.6 Implementation

A plan cannot be effectively implemented unless the necessary resources are available. It is equally important that the required infrastructure be in place. Infrastructure is a term that refers to permanent non-consumable items required

Implementation is the act of carrying out the agreed plan according to an agreed schedule to achieve what has been agreed should be done.
to support the implementation process. This includes roads, rail and air links, equipment, tools, vehicles, fuel supply depots, vehicle maintenance facilities, chemical supply points, offices, storage rooms, pump houses, packhouses, etc. The production manager ensures that the necessary infrastructure is in place, and makes the appropriate contingency arrangements when such facilities are not yet available.

As circumstances and conditions change, the implementation process has to be constantly measured, evaluated, reviewed and adapted.

### 2.7 Coordination

Most tasks and almost all projects involve the activities of more than one person. Production management is, by definition, a process; the various aspects of which are carried out by different individuals with different skills.

We have already dealt with the concept of **organising**, which is about the allocation of resources. Coordination is about bringing in the various players at the appropriate times and in the most effective way in pursuit of the agreed objective. Most projects and tasks require some form of coordination. Without it, aspects of the work could be unnecessarily repeated and others lost.

Coordination is an important aspect of the agricultural production manager’s job. In fact, virtually all that gets done by the staff in the production process is the result of the coordination of different tasks or inputs. For example, the application of a pest control spray requires that the production manager coordinates with the administration personnel to ensure that the chemicals are ordered and delivered in time, the maintenance department to ensure that the tractors and spray equipment are in good working order, and the labour force to ensure that enough workers are available to complete the task.

### 2.8 Monitoring

It is not enough to plan, organise, and implement a program. The process can only operate successfully when the feedback cycle is also operating. The feedback cycle involves:

- Control
- Feedback
- Adaptation
- Correction
The feedback cycle is a continuous process of measuring progress and evaluating it against the original objective(s). It is about asking:

- “Are we still on track?”
- “Are my original assumptions still valid?”
- “Do I need to adjust my goals, timeframes or implementation process in some other way?”

The feedback cycle must be formalised and be part of the procedure for executing tasks. It may involve the use of short interval control measures. A short interval control measure is a progress check on a regular short interval basis, such as weekly or fortnightly.

One way of doing this is to break down the program into smaller short-term milestones and measure progress against these milestones on a scheduled basis. If any of the milestones are not met, a decision has to be taken on whether the implementation of the plan needs to be changed or whether the original plan needs to be adapted or corrected. The effectiveness of a pest control program can for example be monitored by carrying out frequent and systematic inspections of pest populations. Based on these results the programme can be adjusted to ensure that the original objective is met.

*Figure 2.1 illustrates the management process chain, incorporating all the stages through to feedback and correction.*
<table>
<thead>
<tr>
<th>Concept (SO 2, AC 1 - 7)</th>
<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
</tr>
</thead>
<tbody>
<tr>
<td>The importance of planning</td>
<td></td>
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<tr>
<td>The various components in the planning process</td>
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<td>The importance of scheduling</td>
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<tr>
<td>The impact that the limited nature of natural resources has on production</td>
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<tr>
<td>The importance organising</td>
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<tr>
<td>The importance of implementation</td>
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<tr>
<td>The essence of leadership is defined and explained.</td>
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<tr>
<td>The concept of control, feedback, adaptation and correction</td>
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**My Notes ...**

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Your **objective** is to build a paper structure that is strong enough to hold up an egg. The egg may not be attached to the tower in anyway – in other words, no glue, Presstick or similar materials may be used to ‘stick’ it onto the tower. You have 45 minutes to plan your project, after which you have twenty minutes to complete it. Before your planning time is up you must submit your resources list to your facilitator to ‘buy’ your resources. Your purchasing budget is R10. You must make sure that you ‘buy the materials you need within your budget and that you have all your resources ready before starting to build.

Discuss this objective in your group and use the notes below to record your application of management principles.

1. **Planning** - We will achieve our goal by taking the following steps:

   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

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2. **Scheduling** – We have ___________mins to complete our task. Our time will be allocated to specific components of the task as follows:

   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

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3. **Organising** – The following team members will complete the following tasks:

   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

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   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
4. **Implementation** – We require the following resources to complete our task:

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5. **Coordination** – We know we are ready for the next person to fulfil the next task at the following points:

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6. **Monitoring: Half way through the plan:**

   Are we still on track?”
   Are our original assumptions still valid?”
   Do we need to adjust my goals, timeframes or implementation process in some or other way?”

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   Facilitator comments:  

   Assessment:
3 Additional production managerial tasks

After completing this session, you should be able to:
SO 3: Understand and define the additional production management tasks

3.1 Introduction

Production management is firstly about understanding the basic management tasks described in the previous session, but that alone is not enough. Being able to employ the basic management tasks depends on the production manager’s ability to perform these additional tasks well, and the effectiveness of the production manager depends on the following:

- Decision-making
- Leadership
- Communication
- Motivation
- Delegation
- Discipline
- Human resource management

3.2 Decision-making

We all make decisions every day, both at home and at work. We make many decisions without much effort, and without concerning ourselves unnecessarily with what their impact will be. For example, we make decisions about what to
wear, when to perform a task, what to eat, when to eat, and many other small, seemingly insignificant issues. But even for the smallest decision there are consequences and risk. As the risk associated with a decision increases, so the decision becomes more important.

In agricultural production, as in any other business, the level of decision-making is tied to the nature and level of the job. For example, the office cleaner has his tasks clearly and precisely described, and performs his tasks according to this description without making very many decisions on her/his own. At the other end of the scale, the production manager is faced with many different situations, some requiring decision-making that carries long-term and serious consequences for production, and thus for the company. The production manager has to use her/his discretion more often and with greater consequence than the cleaner.

**Decision-making** is the cognitive process of selecting a course of action from among multiple alternatives. Common examples include shopping, deciding what to eat, and deciding who or

Decision-making is part of every facet of every business. Decisions are required when goals are set and when actions have to be taken to enable those goals to be met.

### 3.3 Leadership

In order to manage, and therefore to deal with management issues such as planning and budgeting, organising, implementing, controlling and problem solving, it is important for manager so demonstrate good leadership qualities.

Leadership requires a range of abilities and characteristics and there are many good leaders with very different personality types. However four key ingredients tend to be common in most successful leaders. These are their ability to:

- Give direction;
- Align people;
- Motivate and inspire people; and
- Introduce change
Good managers need to have leadership qualities in order to:

- Develop a vision of the future;
- Influence the creation of teams that understand the vision and goals;
- Energise people by understanding and satisfying their human needs; and
- Introduce new, more effective ways of doing things

Good leaders are usually emotionally mature, resilient, flexible and adaptable, persistent, results driven, energetic and decisive. They demonstrate the ability to take initiative, have a full grasp of the situations for which they are responsible, express their convictions and stimulate others to do the same, and encourage evaluation and feedback.

### 3.4 Communication

This is frequently identified as the most important factor underlying the ability of a group of people to work together productively. People gain perceptions of a task, an individual and an organisation through the things they hear, see and read. For the agricultural production manager to improve performance, s/he must be ensure that the team knows:

- What to do;
- Why they are doing it;
- How to do it;
- How well to do it; and
- How well they are doing it.

Good communication is vital if the objectives and goals are to be clearly understood and effectively met.

Many companies have formal communication policies that look at how information is shared on various levels of importance between individuals and between and within departments. These policies essentially cover what should be communicated, how, when, by whom and to whom. They also indicate what kind information is confidential.

At the heart of good verbal communication are three key issues:

- Good listening
- Appropriate body language
- Properly structured verbal or written content
Body language is important because it is said that 55% of our communication is through body language, 38% by tone of voice, and only 7% by words.

Good writing skills are also important for the production manager, as he or she is required to motivate and inform those above and below him or her with appropriate written memorandums, letters, instructions and reports. Many courses and references are on offer on improving writing skills.

### 3.5 Motivation

Motivation is about helping people to be passionate about their work. The basis for good motivation is participative goal setting, where every person is given the opportunity to participate in setting goals. As Tony Manning, a strategy consultant says:

- People get turned on when they’re counted in
- When you treat them like eagles, they soar
- What you get hinges largely on what you expect
- Most people can and will take on far more than we think, if only they’re given a chance

According to Farmers’ Weekly contributor Peter Hughes, motivation killers include professional managers who do things by the book but don’t care about their people.

Incentives can enhance motivation, though it must be remembered that internal motivation lasts longer than external motivation which must be repeatedly reinforced by praise and concrete rewards. A feeling of belonging (affiliation) and approval are strong motivators.

### 3.6 Delegation

Delegation is the practice whereby the manager entrusts his authority to others. The aim of delegation is to get the job done by someone else, not just the simple tasks, but also decision-making based on incoming information. With delegation, personnel have the authority to react to situations without referring back to their
Define and understand production systems and production management

Version: 01   Version Date: July 2006

manager. However, the manager still remains accountable for the satisfactory completion of the task.

Delegation is a style of management that allows staff to use and develop their skills and knowledge to their full potential.

To enable someone else to do the job, the manager must be sure that his personnel:

- Know what he wants
- Have the authority to do or achieve it
- Know how to do it

These all depend on a clear communication of the nature of the task, the extent of the discretion they can use, and the sources of information available to them.

Delegation does not mean that the manager should pass on his less pleasant tasks to his subordinates and keep the more pleasant tasks to himself. A good manager will distribute the mundane tasks as evenly as possible and the more exciting ones widely. Delegation also does not mean that the manager can hide behind her/his staff by giving full accountability to them for issues that s/he should be dealing with her/himself, which is referred to as abdication.

### 3.7 Discipline

Discipline is about doing what you are supposed to when you are supposed to and how you are supposed to do it. A production manager required to exercise discipline at all times. Discipline is what is required when a number of tasks have to be completed in a short period of time.

Discipline in the manner in which one approaches a task is essential, and this is based on disciplined thinking. If the objective have been set, the plan been agreed upon and all the other tasks been completed, it is the discipline of executing the task in the prescribed manner that will get the job done.

Disciplinary action is taken to deal with individuals who disobey company rules or whose performance is unsatisfactory in relation to agreed standards. Disciplinary action is an important part of the manager’s duties and positively reinforces the significance that the company and manager attach to the maintenance of standards and behaviour.

Some managers tend to avoid disciplining their subordinates for fear of becoming unpopular and losing their support. Other managers tend to use their disciplinary powers to enforce participation and performance. Neither of these extremes is good. Preferably the manager should strive to maintain consistency in dealing with disciplinary matters and be seen to be firm but fair.
Define and understand production systems and production management

Primary Agriculture  
NQF Level 2  
Unit Standard No: 116115

Version: 01                 Version Date: July 2006

Disciplinary action in companies has to be consistent within the parameters of labour legislation. In the event of a wrongdoing, set procedures have to be followed. These procedures are normally summarised by the company and communicated to all staff as a company directive. It is the duty of the manager to ensure that all of his personnel are aware of the rules and the process that will be followed in the event of wrongdoing.

3.8 Human Resource Management

The success or failure of a company or production department largely depends on the performance of its people. While it is the manager’s direct responsibility to plan, organise, implement, coordinate and control, he requires support from his company to ensure that his most important resource, his people, are well cared for. This function, and various others, is the domain of the Human Resources Department.

The key functions of human resource management are:

♦ Staff selection and recruitment;
♦ Succession planning and career path development;
♦ Staff training;
♦ Setting remuneration policy;
♦ Setting and monitoring performance management policy;
♦ Ethics and disciplinary procedures; and
♦ Industrial relations

In addition it is customary for Human Resource Departments to manage the company’s payroll and provide support for culture development activities, strategic planning, communications policy, pension policy and other company activities involving staff and their benefits.

Please complete Activity 4 at the end of the session

My Notes ...

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<table>
<thead>
<tr>
<th>Concept (SO 3, AC 1-4)</th>
<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose and various steps involved in the decision-making process</td>
<td></td>
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<tr>
<td>The importance of good communication</td>
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<td>Motivation</td>
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<tr>
<td>Coordination</td>
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<tr>
<td>Delegation</td>
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<tr>
<td>Leadership</td>
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<tr>
<td>Discipline is defined and explained</td>
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<tr>
<td>Elementary Human Resource Management</td>
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</tbody>
</table>

**My Notes ...**

...
Define and understand production systems and production management

Primary Agriculture
NQF Level 2
Unit Standard No: 116115

Version: 01                 Version Date: July 2006

Individual Questionnaire: Management qualities

Answer the following questions in the spaces provided.

1. What do you think will happen if the person who is making decisions does so without gathering as many facts as possible?

2. What do you think will happen if the person who is a team leader is constantly criticising and never seems to be pleased with anyone’s efforts?

3. What are the 4 key ingredients for effective leadership?

My Name: 

My Workplace: 

My ID Number: 

My Name: 

My Workplace: 

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4. What do you think will happen if there is bad communication between staff and management?

5. One of the departments on the farm has been experiencing major problems with the staff. They are often late for work, and the standards of working have dropped. The staff is behind in their scheduled tasks and although the manager has threatened them, the staff has not been willing to improve. The problem seems to have started after the supervisor and a manager had an argument about overtime. What do you think could be done to rectify the situation?

6. What impact do you think it would have on the staff working on a farm if there was no human resources policy on a farm?
7. Looking back on the activity you did in small groups earlier in the course – the one where you made a tower – what have you learned during this session that would have made it easier to complete the activity?

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8. Consider your job on the farm from the point of view of both a leader and also reporting to someone else. What have you learned in this session that will help you become more effective in both these roles?

Leader:
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Reporting to someone else:
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Facilitator comments:

Assessment:
After completing this session, you should be able to:

SO 4: Understand the process of setting goals and objectives related to systems within an agricultural business

In this session we explore the following concepts:

- Business goal-setting
- Goal-setting mechanisms
- Setting goals for production

4.1 Business Goal Setting

"Begin with the end in mind". This is a well-known phrase, which expresses the importance of starting off any project with a picture of how things should look once the work has been successfully completed. For large scale and long-term undertakings, this picture is referred to as the vision. For smaller and shorter scale operations, this picture takes the form of specific outcomes and is commonly referred to as objectives or goals.

The vision or goal is therefore the “what” of any project. It can simply be defined as “the end one strives to attain”. As mentioned in a previous section, planning focuses on the steps that have to be taken to achieve the goal, i.e. the “how”.

There are many types of goals, for example:

- Long-term goals are for the company as a whole.
- Shorter-term goals are for divisions, departments or other groupings within the company.
- Business goals include marketing, technical, production, management and financial goals.
- Outcome goals specify and quantify the required results.
- Performance goals set requirements relating to the performance, skills or knowledge to be acquired by groups or individuals.
Activity goals list the activities that are to be measured, for example number of meetings to be attended, etc.

Personal goals cover the aspirations of individuals.

The most critical issue relating to goals and goal setting within an organisation is that the goals set at various levels for various purposes and functions must all be aligned towards meeting the overall goal, or vision, of the organisation.

For agricultural production, this means that the goals of the production department must align with those of the company as a whole, and the goals of individual projects or activities within the department must align with the production department’s goals.

This concept is illustrated in figure 4.1 below.
4.2 Goal Setting Mechanisms

Goal setting is a process to answer the question: “Where do I want to be in relation to where I am now?” Answering this question requires a participative process to get the buy-in of all stakeholders. There are various ways in which this can be achieved.

In most cases, the company’s overall goal, or vision, is set by senior management and the board of directors. Thereafter, the vision and objectives are cascaded down to the various levels in the company through a participative process led by divisional and department heads, and remain aligned with the vision and objectives of the company as a whole.

Individuals within an organisation contribute to the setting of their department’s goals through a facilitator applying various tools and techniques to ensure good order and full participation.

All such methods require some form of environmental analysis or scan. This can be done in various ways but will ultimately entail answering the question: “What are the likely scenarios that our production unit is likely to face in the next 24 months?” The answer to this question requires consideration to be given to the various political, economic, social, technical, legal, and environmental issues which could impact on the production unit.

Goals cannot be set unless:

♦ The present situation is known;
♦ The effect that various internal and external factors which could impact on the business are known and evaluated; and
♦ The purpose and objectives of the business are clear

Gathering this information can use a variety of techniques and one of the commonly used methods is by recording verbal responses to questions such as: “What are the strengths, weaknesses, opportunities and threats relating to the business?” This mechanism is referred to as a SWOT analysis.
Define and understand production systems and production management

Primary Agriculture  NQF Level 2  Unit Standard No: 116115

**STRENGTHS – WEAKNESSES – OPPORTUNITIES – THREATS**

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengths are within an organisation. It will look at products, processes, human resources, infrastructure, structures, administration, marketing, public relations and financial issues. These are all issues over which the company has control and that are working well and therefore contribute to the company’s success.</td>
<td>Weaknesses are within an organisation. It will look at products, processes, human resources, infrastructure, structures, administration, marketing, public relations and financial issues. These are all issues over which the company has control but are not working well and undermine the company’s potential success. The items listed in this section provide Management with key areas for improvement and development.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
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<tbody>
<tr>
<td>These could be in any area, both internal and external. It could be improvements to internal systems to take advantage of a marketing opportunity. It could be an opportunity to upgrade equipment. Often the opportunities are identified through asking ‘How do we take advantage of our strengths?’ , ‘How do we overcome our weaknesses?’ and ‘What can we do to mitigate this treat?’</td>
<td>Threats are external forces over which the company has no control, but, by being aware of these issues, Management can plan for a range of eventualities. The issues raised in this section also, therefore, can become key areas for development / improvement.</td>
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</tbody>
</table>

It is important that the staff members who undertake a SWOT analysis do not see it as a management opportunity to rap people over the knuckles. That is not the intention. The intention is for everyone involved to help build as clear and concise a picture of the reality of a situation in order to create the most effective plan of action that will contribute to the company’s success. It’s an opportunity to say, ‘Where are we now, and if we want to do things better, what can we do? What are the possibilities?’.
An example of a **SWOT** analysis is as follows:

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Weaknesses</strong></th>
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<tbody>
<tr>
<td>- Product quality</td>
<td>- Labour skills poor</td>
</tr>
<tr>
<td>- Early maturity</td>
<td>- Imports of inputs difficult and costly</td>
</tr>
<tr>
<td>- Secure and plentiful water</td>
<td>- No EurepGap (environmental) compliance</td>
</tr>
<tr>
<td>- Excellent soils</td>
<td>- No local factory outlet</td>
</tr>
<tr>
<td>- Good range of high quality plant material</td>
<td>- Poor quality and unreliable machinery</td>
</tr>
<tr>
<td>- Committed ownership</td>
<td>- Packhouse in bad condition</td>
</tr>
<tr>
<td>- Good technical production skills</td>
<td>- No regular management accounts</td>
</tr>
<tr>
<td>- Good PR skills – well connected</td>
<td>- No market access to key markets</td>
</tr>
<tr>
<td>- Labour plentiful</td>
<td>- o Japan</td>
</tr>
<tr>
<td>- Close to port / airport</td>
<td>- o USA</td>
</tr>
<tr>
<td>- Innovative management</td>
<td>- High pest pressure</td>
</tr>
<tr>
<td>- Low per unit labour costs</td>
<td>- o Pests (identified and specific)</td>
</tr>
<tr>
<td>- Labour literacy high (100%)</td>
<td>- Low export percentage</td>
</tr>
<tr>
<td>- Good market potential</td>
<td>- Lack of available logistics to exploit early maturity of produce</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Opportunities</strong></th>
<th><strong>Threats</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Expand production an identified and specific commodity into market gaps left by other farmers who no longer produce</td>
<td>- Water availability</td>
</tr>
<tr>
<td>- Reduce electricity costs</td>
<td>- o Floods – medium risk</td>
</tr>
<tr>
<td>- Obtain EurepGap (environmental) accreditation</td>
<td>- o Drought – low risk</td>
</tr>
<tr>
<td>- Improve labour skills through training</td>
<td>- Phytophathogenic pests and diseases</td>
</tr>
<tr>
<td>- Upgrade equipment reliability</td>
<td>- o Identified and specific list</td>
</tr>
<tr>
<td>- Improve systems</td>
<td>- Management succession</td>
</tr>
<tr>
<td>- o Production and packing records</td>
<td>- Labour unrest</td>
</tr>
<tr>
<td>- o Human resource</td>
<td>- Political unrest</td>
</tr>
<tr>
<td>- o Finance and reporting</td>
<td>- Security</td>
</tr>
<tr>
<td>- o Marketing</td>
<td>- Low market prices</td>
</tr>
<tr>
<td>- Explore market niche opportunities</td>
<td>- Environmental requirements</td>
</tr>
<tr>
<td>- Investigate lime production</td>
<td>- Lack of management depth</td>
</tr>
<tr>
<td>- Investigate local processing</td>
<td>-</td>
</tr>
</tbody>
</table>
Goals are set by people, not by processes or techniques. It is therefore important that when goals are being set, whether it is at divisional, departmental and individual level, there is an alignment between the aspirations and goals of the individuals involved in the goal setting and implementation process, and that of the company. For example, it is senseless for a manager to set goals which may require taking technical shortcuts when his personnel are committed to carrying out diligent and thorough work.

In order for it to be successful, goal setting requires open communication, motivation and the complete buy-in and understanding of the bigger company objectives by those tasked with the job of setting lower order goals.

### 4.3 Production Systems

The goal setting process involving different functions or departments should not happen for each of these functions in isolation. It is important for the individual heading up each function to be aware what the goals are of the other functions.

For each goal there needs to be an action plan. The action plan lists what has to be done, by whom and by when. Since common resources are required to meet these goals, it is important that there is an integrated approach to goal setting involving those leaders of the different functions.

### 4.4 Production Plan

The production plan consists of a list of actions required to achieve the identified objectives, each with a target date and interim milestones so that progress can be reviewed on a regular basis.
<table>
<thead>
<tr>
<th>Concept (SO4, AC1-5)</th>
<th>I understand this concept</th>
<th>Questions that I still would like to ask</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business goal setting</td>
<td></td>
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</tr>
<tr>
<td>Various mechanisms and processes that enable goals to be set such as a SWOT analysis.</td>
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<td></td>
</tr>
<tr>
<td>The parameters and structure of various agricultural production systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set and discuss basic theoretical goals using a variety of techniques for a variety of basic agricultural production systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrating basic goals for agricultural systems within an agricultural enterprise</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
You are going to participate in a group activity during which you will set goals and develop an action plan to achieve these goals. Your facilitator will give you a scenario such as the one below and in your group you will discuss this and record your application in the spaces provided below.

Management’s decision is:

Increase the yield per hectare of __________ grown on the farm. Your current yield is ____________.

1. In your group, identify the key departments that have a role to play in achieving this goal.

2. Using the paper provided by the facilitator, use one page for every month and one page for every department. Identify the key tasks or responsibilities of each of these departments in order to achieve the identified goal.

For example, if this was in a citrus environment, the production process will have three or four primary or overall goals. The sub-systems will have their own goals, which are aligned with the overall goals. Some of these could be:

♦ Apply all nitrogen fertiliser applications by 30th July
♦ Departmental planning includes: stores must have the fertiliser in stock; staff have to be available to perform the task; transport available to move fertiliser from stores to orchards.
♦ Girdle all trees older than 6 years by 25th August;
Departmental planning includes: materials and equipment in good order, ready to use; staff available (how many trees per day in relation to staff available); trees must be identified.

Apply first pest control sprays by 15th September and follow-up sprays six weeks later;

Departmental planning includes: stores must have the pest spray and spray equipment on hand; staff have to be available to perform the task; transport available to move teams from orchard to orchard.

Increase the frequency of irrigation applications from 1st October.

Departmental planning includes: irrigation system in good repair; water must be available.

3. Once you have identified the key tasks and resources needed for and by each department you can place these on a time-line so that you know exactly what is needed, when and by whom in order to do what. This gives you a production plan.

4. Once you have completed your plan, do a SWOT analysis of your plan, and then revise your plan accordingly.

5. You must present your production plan to the rest of the group. You must tell the group what you changes based on the SWOT analysis.

Summary of my group’s Production Plan

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Record your Swot Analysis outcome

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</table>
Define and understand production systems and production management

Primary Agriculture  NQF Level 2  Unit Standard No: 116115

What did your group decide to change, based on your SWOT analysis?

Facilitator comments:

Assessment:
Am I ready for my test?

- Check your plan carefully to make sure that you prepare in good time.
- You have to be found competent by a qualified assessor to be declared competent.
- Inform the assessor if you have any special needs or requirements before the agreed date for the test to be completed. You might, for example, require an interpreter to translate the questions to your mother tongue, or you might need to take this test orally.
- Use this worksheet to help you prepare for the test. These are examples of possible questions that might appear in the test. All the information you need was taught in the classroom and can be found in the learner guide that you received.

1. I am sure of this and understand it well
2. I am unsure of this and need to ask the Facilitator or Assessor to explain what it means

<table>
<thead>
<tr>
<th>Questions</th>
<th>1. I am sure</th>
<th>2. I am unsure</th>
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</thead>
<tbody>
<tr>
<td>1. What is the purpose of setting goals and objectives for an agri-business enterprise?</td>
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<tr>
<td>2. Below is a list of managerial tasks. Provide a brief explanation for each of these tasks.</td>
<td></td>
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<tr>
<td>I. Setting objectives</td>
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<td>II. Planning</td>
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<td>III. Scheduling</td>
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<td>IV. Organising</td>
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<td>V. Implementation</td>
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<td>VI. Coordination</td>
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<td>VII. Monitoring</td>
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<tr>
<td>3. In our own words, explain your understanding of production systems.</td>
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<td>4. List the key managerial skills for effective management and give a brief explanation of each.</td>
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<td>5. In your own words, explain the term ‘natural resource limitations’.</td>
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<td>6. Identify five production practices that would ensure that there is a minimum negative impact on the environment.</td>
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<td>7. In your own words, explain your understanding of ‘optimum use of resources’.</td>
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</table>
Checklist for practical assessment ...

Use the checklist below to help you prepare for the part of the practical assessment when you are observed on the attitudes and attributes that you need to have to be found competent for this learning module.

<table>
<thead>
<tr>
<th>Observations</th>
<th>Answer Yes or No</th>
<th>Motivate your Answer (Give examples, reasons, etc.)</th>
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</thead>
<tbody>
<tr>
<td>Can you identify problems and deficiencies correctly?</td>
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<tr>
<td>Are you able to work well in a team?</td>
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<td>Do you work in an organised and systematic way while performing all tasks and tests?</td>
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<tr>
<td>Are you able to collect the correct and appropriate information and / or samples as per the instructions and procedures that you were taught?</td>
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<td>Are you able to communicate your knowledge orally and in writing, in such a way that you show what knowledge you have gained?</td>
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<tr>
<td>Can you base your tasks and answers on scientific knowledge that you have learnt?</td>
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<tr>
<td>Are you able to show and perform the tasks required correctly?</td>
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<tr>
<td>Are you able to link the knowledge, skills and attitudes that you have learnt in this module of learning to specific duties in your job or in the community where you live?</td>
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</table>

♦ The assessor will complete a checklist that gives details of the points that are checked and assessed by the assessor.
♦ The assessor will write commentary and feedback on that checklist. They will discuss all commentary and feedback with you.
♦ You will be asked to give your own feedback and to sign this document.
♦ **It will be placed together with this completed guide in a file as part of you portfolio of evidence.**
♦ The assessor will give you feedback on the test and guide you if there are areas in which you still need further development.
Paperwork to be done ...

Please assist the assessor by filling in this form and then sign as instructed.

<table>
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Bibliography

Books:


World Wide Web:

Mind Tools: www.mindtools.com

Business Management Goal Setting: www.mikeholt.com

The Art of Delegation by Gerard M. Blair, www.see.ed.ac.uk

Terms & Conditions

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  Ms Sue Spies

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  Ms B Enslin

- **Design:**
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- **Layout:**
  Mr R du Toit
  Ms N Matloa
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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED UNIT STANDARD:

Define and understand production systems and production management

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<th>UNIT STANDARD TITLE</th>
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<td>Define and understand production systems and production management</td>
<td>SGB Primary Agriculture</td>
<td>NSB 01-Agriculture and Nature Conservation</td>
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<td>2007-10-13</td>
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PURPOSE OF THE UNIT STANDARD

The learner achieving this unit standard will be able to understand basic production systems, the basic managerial tasks, additional management tasks and the management objective in the agri-business environment. In addition they will be well positioned to extend their learning and practice into other areas of business and agriculture, benefiting agriculture by placing managers that are trained to understand that agricultural production is a business.

Learners will understand the importance of the application of business principles in agricultural production with specific reference to production/conversion.

They will be able to operate farming practices as businesses and will gain the knowledge and skills to move from a subsistence orientation to an economic orientation in agriculture. Knowledge and skills to access mainstream agriculture through a business-orientated approach to agriculture will be gained by farmers.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

It is assumed that a learner attempting this unit standard will demonstrate competence against the unit standard or equivalent:

- NQF 1: Define production and understand the basic activities of production conversion in the agri-business process.

UNIT STANDARD RANGE

Whilst range statements have been defined generically to include as wide a set of alternatives as possible, all range statements should be interpreted within the specific context of application.

Range statements are neither comprehensive nor necessarily appropriate to all contexts. Alternatives must
however be comparable in scope and complexity. These are only as a general guide to scope and complexity of what is required.

**UNIT STANDARD OUTCOME HEADER**

N/A

**Specific Outcomes and Assessment Criteria:**

**SPECIFIC OUTCOME 1**
Understand production system in an agri-business environment.

**OUTCOME RANGE**
Production systems refer to but are not limited to inputs applied, transformation processes and desired outputs.

**ASSESSMENT CRITERIA**

**ASSESSMENT CRITERION 1**
The interaction with the market is described.

**ASSESSMENT CRITERION RANGE**
- Market refers to but is not limited to input market, output market.
- Interaction refers to the activities that take place between input markets, production systems and output markets.

**ASSESSMENT CRITERION 2**
An understanding of the limited nature of natural resources is demonstrated.

**ASSESSMENT CRITERION RANGE**
- Natural resources refer to but are not limited to soil, land, and water.

**ASSESSMENT CRITERION 3**
The reciprocal interaction between agricultural processes and environmental factors is described.

**ASSESSMENT CRITERION RANGE**
- What effect does the environment have on agricultural practices - positive / negative (e.g. Production limitations, environmental legislations).
- What effect agricultural practices have on the environment - positive / negative (pollution, erosion).

**ASSESSMENT CRITERION 4**
The concept of optimal usage of resources and optimisation of outputs is understood.

**ASSESSMENT CRITERION RANGE**
- Resources refer to but are not restricted to capital, land, water, facilities, human resources, information, and raw materials, etc.
- Optimisation refers to the best usage of inputs and resources to deliver the best possible level of output.
- Best includes optimisation in terms of quality and / or quantity.

**SPECIFIC OUTCOME 2**
Understand and define the basic managerial tasks.
OUTCOME RANGE
Basic management tasks refer to but are not limited to planning, leading, organising, implementation and control.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1
The importance of planning is defined and explained.

ASSESSMENT CRITERION 2
The various components in the planning process are described.

ASSESSMENT CRITERION 3
The essence of scheduling is defined and understood.

ASSESSMENT CRITERION RANGE
The essence of scheduling includes but is not limited to the purpose of scheduling and the various steps that have to be followed.

ASSESSMENT CRITERION 4
The essence of organising is defined and explained.

ASSESSMENT CRITERION RANGE
The essence of organising includes but is not limited to the appropriate allocation of human resources.

ASSESSMENT CRITERION 5
The essence of implementation is defined and explained.

ASSESSMENT CRITERION RANGE
The essence of implementation includes but is not limited to the creation of infrastructure to perform the steps that have to be followed with certain activities.

ASSESSMENT CRITERION 6
The essence of leadership is defined and explained.

ASSESSMENT CRITERION RANGE
The essence of leadership includes but is not limited to characteristics of good leaders, development of leadership abilities, etc.

ASSESSMENT CRITERION 7
The concept of control, feedback, adaptation and correction is defined and explained.

SPECIFIC OUTCOME 3
Understand and define the additional production management tasks.

OUTCOME RANGE
Additional basic managerial tasks refer to but are not limited to decision making, communication, motivation, coordination, delegation, discipline, and human resource management.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The purpose and various steps involved in the decision-making process are defined and explained.

ASSESSMENT CRITERION 2
An understanding of the importance of good communication by exhibiting good communication skills is demonstrated.

ASSESSMENT CRITERION RANGE
Communication skills include but are not limited to listening, comprehensive reading, writing, verbal skills and the processing of the message.

ASSESSMENT CRITERION 3
The essence of motivation is defined and explained.

ASSESSMENT CRITERION 4
The essence of coordination is defined and explained.

ASSESSMENT CRITERION 5
The essence of delegation is defined and explained.

ASSESSMENT CRITERION 6
The essence of discipline is defined and explained.

ASSESSMENT CRITERION 7
A basic understanding of human resource management is demonstrated.

ASSESSMENT CRITERION RANGE
Human resource management include but is not limited to identification of skills required, number of labourers required, salary payments, personnel development, etc.

SPECIFIC OUTCOME 4
Understand the process of setting goals and objectives related to systems within an agricultural business

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1
An understanding of the concept of business goal setting is demonstrated.

ASSESSMENT CRITERION 2
Various mechanisms and processes that enable goals to be set are discussed.

ASSESSMENT CRITERION RANGE
Mechanisms include but are not limited to the components of business plans such as SWOT analyses, (micro-, meso- and macro-) environmental analyses, budgets, etc.

ASSESSMENT CRITERION 3
A basic knowledge about the parameters and structure of various agricultural production systems is demonstrated.
ASSESSMENT CRITERION 4
The ability to set and discuss basic theoretical goals using a variety of techniques for a variety of basic agricultural production systems is demonstrated.

ASSESSMENT CRITERION 5
The ability to integrate basic goals for agricultural systems within an agricultural enterprise is demonstrated.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS
The assessment of qualifying learners against this standard should meet the requirements of established assessment principles.

It will be necessary to develop assessment activities and tools, which are appropriate to the contexts in which the qualifying learners are working. These activities and tools may include an appropriate combination of self-assessment and peer assessment, formative and summative assessment, portfolios and observations etc.

The assessment should ensure that all the specific outcomes, critical cross-field outcomes and essential embedded knowledge are assessed.

The specific outcomes must be assessed through observation of performance. Supporting evidence should be used to prove competence of specific outcomes only when they are not clearly seen in the actual performance.

Essential embedded knowledge must be assessed in its own right, through oral or written evidence and cannot be assessed only by being observed.

The specific outcomes and essential embedded knowledge must be assessed in relation to each other. If a qualifying learner is able to explain the essential embedded knowledge but is unable to perform the specific outcomes, they should not be assessed as competent. Similarly, if a qualifying learner is able to perform the specific outcomes but is unable to explain or justify their performance in terms of the essential embedded knowledge, then they should not be assessed as competent.

Evidence of the specified critical cross-field outcomes should be found both in performance and in the essential embedded knowledge.

Performance of specific outcomes must actively affirm target groups of qualifying learners, not unfairly discriminate against them. Qualifying learners should be able to justify their performance in terms of these values.

• Anyone assessing a learner against this unit standard must be registered as an assessor with the relevant ETQA.

• Any institution offering learning that will enable achievement of this unit standard or assessing this unit standard must be accredited as a provider with the relevant ETQA.

• Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE
The person is able to demonstrate a basic knowledge of:

• Purpose of goals and objectives.
• Aspects of the managerial tasks.
• The structure of various agricultural production systems.
• Basic presentation skills.
• The basic components of managerial skills.
• The setting of goals and objectives within an agricultural production set-up.
• The purpose of learning about agricultural production and conversion systems.
• The purpose of learning about management.
• Understanding systems.

UNIT STANDARD DEVELOPMENTAL OUTCOME
N/A

UNIT STANDARD LINKAGES
N/A

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING
Problem solving relates to all specific outcomes.

UNIT STANDARD CCFO WORKING
Teamwork relates to all specific outcomes.

UNIT STANDARD CCFO ORGANIZING
Self-organisation and management relates to all specific outcomes.

UNIT STANDARD CCFO COMMUNICATING
Communication relates to all specific outcomes.

UNIT STANDARD CCFO DEMONSTRATING
The World as a set relates to all specific outcomes.

UNIT STANDARD CCFO CONTRIBUTING
Self-development relates to all specific outcomes.

UNIT STANDARD ASSESSOR CRITERIA
N/A

UNIT STANDARD NOTES
N/A

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