



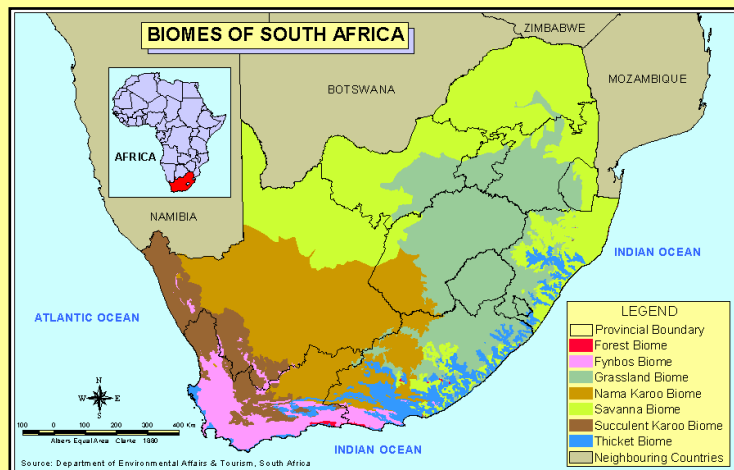
NQF Level: 1

US No: 116157

# Learner Workbook

## Primary Agriculture

### Demonstrate an Understanding of the Basic Concepts of Sustainable Farming Systems



My Name: .....

My Workplace: .....

My ID Number: ..... Date: .....

The availability of this product is due to the financial support of the National Department of Agriculture and the AgriSETA.



agriculture

Department:  
Agriculture  
REPUBLIC OF SOUTH AFRICA



## Before we start...

Dear Learner - on completion of the Learner Guide, you will have acquired all the knowledge and skills to be assessed against the following unit standard:

<b>Title:</b> Demonstrate an understanding of the basic concepts of sustainable farming systems		
<b>US No:</b> 116157	<b>NQF Level:</b> 1	<b>Credits:</b> 4

Please read the unit standard at your own time (see **Learner Guide**).

## What is assessment all about?

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 this workbook ...

Your activity workbook will 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.



## 1.1

SO 1 AC 1 - 4

**Brainstorming; Group working;  
Researching; Making notes;  
Explaining**

My Name: .....

My Workplace: .....

My ID Number: .....

**Let's brainstorm together as a group to find out about the following:**

- 1.** What do you think the word "Environmental pattern" means?

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- 2.** In your writing, explain how the animals behave before, during and after feeding.

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**Facilitator comments:**

**Assessment:**



**1.2**  
**SO 1 AC 1 - 4**

**Understanding; Visualising**

My Name: .....  
My Workplace: .....  
My ID Number: .....

**Let's do an exercise that will help us to complete our understanding of what different types of environmental patterns look like.**

- 1. Close your eyes and think of the area in which you live...
  - ◆ Think and see the types of soils that you might get in this area
  - ◆ Think and see the way the climate is in this area
  - ◆ Think about water and see in your minds' eye where those water sources might come from
  - ◆ Think about the types of animals that you might encounter in this area
  - ◆ Think about how the land is formed in this area (i.e. mountains, rivers and dams)
  - ◆ Think about the types of people, buildings and activities that happen in this area

**Do you see a picture?! Now make a note in your head of that type of picture.**

- 2. Now close your eyes again and think about a desert like the Karoo, the Kalahari, the Namib or the Sahara.
  - ◆ Think and see the types of soils that you might get in this area
  - ◆ Think and see the way the climate is in this area
  - ◆ Think about water and see in your minds' eye where those water sources might come from
  - ◆ Think about the types of animals that you might encounter in this area
  - ◆ Think about how the land is formed in this area (i.e. mountains, rivers and dams)
  - ◆ Think about the types of people, buildings and activities that happen in this area

**Do you see a picture?! Now make a note in your head of that type of picture.**

- 5. Are the two types of pictures different or the same?

**What you have just visualised are what we call – "Environmental Patterns"**

**Facilitator comments:**

**Assessment:**



**1.3**  
**SO 1 AC 1 - 4**

**Group discussion;  
Summarising; Describing;  
Discovering; Writing**

My Name: .....  
My Workplace: .....  
My ID Number: .....

**1.** Hold a group discussion and summarise the knowledge that you have gained from the exercise.

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**2.** Will you be able to describe the current environmental pattern in your own area now?

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**3.** Write some notes for yourself on what you have just discovered:

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**4.** Take a moment to think about how the environmental pattern in your area might have been 300 years ago... Was it the same, as it is now? Write notes for yourself on how it was and what has changed...

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**Facilitator comments:**

**Assessment:**



**1.4**  
**SO 1 AC 1 - 4**

**Answering questions;  
Recognising; Picking; Pasting**

My Name:  
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My Workplace:  
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My ID Number:  
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**Look around the area in which you live. Answer the questions.**

1. Can you recognise some of the local indigenous veld types that exist in this area? Pick some grasses and leaves, which you think, might be from indigenous plants or local veld types and paste them below...

**Facilitator comments:**

**Assessment:**



## 1.5

**SO 1 AC 1 - 4**

**Writing; Describing;  
Researching**

My Name:  
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My Workplace:  
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My ID Number:  
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**1. Walk around on your farm and make notes regarding the following:**

General description of the topography of my area:	
General description of the climate of my area:	
Average Annual rainfall on my farm:	
Elevation and slope direction on my farm:	
Prevailing wind direction on my farm:	
The crop that we produce on my farm:	
Why the climate, geographical influences, topography, etc. is particularly suited for the type of crop we produce	
What other types of crops this area would be suitable for:	

**Facilitator comments:**

**Assessment:**



**1.6**  
**SO 1 AC 1 - 4**

**Reading; Answering;  
Recording**

My Name: .....  
My Workplace: .....  
My ID Number: .....

**Take this quiz and read the detailed explanation in your Learner Guide afterwards:**

**1.** Do you think we can just allow as many domestic animals as we like to graze on our piece of land?

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**2.** Think about cattle or sheep and how much grazing they might consume... Do you think it is a good idea to have over a hundred cattle or sheep on a hectare of land?

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**3.** What would happen if we did this?

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**4. Tick ( ✓ ) the correct answer:**

**a. Overgrazing is most likely to occur**

- ◆ during the growing season
- ◆ during the dormant season
- ◆ whenever large numbers of animals are present

**b. Overgrazing is something that**

- ◆ can happen to a pasture or range
- ◆ can happen to a plant
- ◆ only domestic livestock will do

**c. The most important factor in preventing overgrazing is**

- ◆ controlling the number of animals in a pasture
- ◆ controlling the time during which animals are grazing
- ◆ having a big enough pasture to support the animals in it
- ◆ not exceeding the carrying capacity of the land
- ◆ not letting animals into the pasture until the grass is 4 inches tall
- ◆ leaving half of the forage

**5. Are overgrazed plants and overrested plants likely to be found in the same pasture?**

<b>True</b>	<b>False</b>
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**6. Do you think that all types of veld has the same level of "carrying capacity"?**  
(Record your answer...)

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**Facilitator comments:**

**Assessment:**



**1.7**  
**SO 1 AC 1 - 4**

**Group discussing; Recording;  
Describing; Explaining**

My Name: .....  
My Workplace: .....  
My ID Number: .....

**Discuss as a group and record your findings:**

- 1.** Describe the "weather" and "climate" in the area where you live, in your own words.

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- 2.** What is the difference between "weather" and "climate"?

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- 3.** Do you think "weather and "climate", plays a role in the practices of farming in your area? Explain your answer.

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**Facilitator comments:**

**Assessment:**



**1.8**  
**SO 1 AC 1 - 4**

**Answering questions;  
Recording**

My Name: .....  
My Workplace: .....  
My ID Number: .....

**Let's look at our weather pattern by answering the following questions:**

**1.** Record how much rain fell every day for 5 days running.

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**2.** Record the direction of the wind and its strength for 5 days running.

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**What you have recorded above would be considered the "weather" of your area!**

**Let's look at our climatic pattern...**

1. Record the average temperature for a year.

<b>Average Temperature for the year</b>	
Ave Temperature January	
Ave Temperature February	
Ave Temperature March	
Ave Temperature April	
Ave Temperature May	
Ave Temperature June	
Ave Temperature July	
Ave Temperature August	
Ave Temperature September	
Ave Temperature October	
Ave Temperature November	
Ave Temperature December	
Add up & divide by 12 to get average	

2. Record how much rain fell on average every month for the last 12 months.

<b>Average Rainfall for the year</b>	
Ave Rainfall January	
Ave Rainfall February	
Ave Rainfall March	
Ave Rainfall April	
Ave Rainfall May	
Ave Rainfall June	
Ave Rainfall July	
Ave Rainfall August	
Ave Rainfall September	
Ave Rainfall October	
Ave Rainfall November	
Ave Rainfall December	
Add up & divide by 12 to get average	

3. Record the direction of the wind and its strength for 12 months running.

Month	Direction	Strength
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Average		

**What you have recorded above would be considered the "climate" of your area!**

**Facilitator comments:**

**Assessment:**





**1.10**  
**SO 1 AC 1 - 4**

**Researching; Discussing**

My Name: .....  
My Workplace: .....  
My ID Number: .....

**Let's look at Biodiversity and farming.**

- 1.** Why do you think that "Biodiversity" might be important when you are farming?  
Ask people in your group what they think about biodiversity and farming...

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- 2.** Discuss in your group what has happened to the environmental patterns in your area over the past 300 years. Do you think it might have been different if the farmers knew about and considered biodiversity in the past 300 years?

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**Facilitator comments:**

**Assessment:**



## 2.1

**SO 2 AC 1 - 5**

### Answering questions

My Name: .....

My Workplace: .....

My ID Number: .....

**Let's decide what kinds of "outputs" we produce.**

<p>The crop that we produce on my farm:</p>	
<p>Why the climate, geographical influences, topography, etc. is particularly suited for the type of crop we produce</p>	
<p>What other types of crops this area would be suitable for:</p>	

**Facilitator comments:**

**Assessment:**





## 2.2

**SO 2 AC 1 - 5**

### Answering questions

My Name: .....

My Workplace: .....

My ID Number: .....

**Let's talk about the "market" that we will be selling our produce to.**

- As a group – think about who will buy the kind of crop you are producing on your farm.

We are growing...	
The type of people who buy it in South Africa...	

- Do you think that you could also sell this product to people in other countries?

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- What are their requirements in terms of this type of product?

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**Facilitator comments:**

**Assessment:**



**2.3**  
**SO 2 AC 1 - 5**

**Group working; Writing;  
Discussing**

My Name:  
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My Workplace:  
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My ID Number:  
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**As a group – go round and round and each state a type of crop or service that you could get money for if you sold it to other people.**

These products or services are called your "Sources of income".

- 1.** Make keynotes for yourself to remember what was discussed...

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**Facilitator comments:**

**Assessment:**





**3.1**  
**SO 3 AC 1 - 3**

**Researching; Writing;  
Explaining**

My Name: .....  
My Workplace: .....  
My ID Number: .....

- 1. Do the following individual research task.
  - a. Do you know what the word "sustainable" means? Look up the meaning in a dictionary and write it here...

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- b. Now explain in your own words what you think this means:

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**Facilitator comments:**

**Assessment:**



## 3.2

SO 3 AC 1 - 3

**Group discussion; Writing**

My Name:  
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 My Workplace:  
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 My ID Number:  
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**Let's have a group discussion under leadership of your facilitator to understand this concept.**

1. Make keynotes for yourself to remember what was discussed...

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**Facilitator comments:**

**Assessment:**



**3.3**  
**SO 3 AC 1 - 3**

**Group discussion**

My Name: .....

My Workplace: .....

My ID Number: .....

**Let's have a group discussion under leadership of your facilitator to understand this concept...**

**1.** Write some keynotes as to how you view you local community.

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**2.** What would you say the main problem in your community is?

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**3.** Social or Economic (If you are unsure what social and economic problems in communities might be, please ask you facilitator to explain it to you!)

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**Facilitator comments:**

**Assessment:**



## 3.4

**SO 3 AC 1 - 3**

### Making a checklist

My Name: .....

My Workplace: .....

My ID Number: .....

**So let's make ourselves a checklist as a community.**

**The sustainable community indicator checklist consists of the following 14 questions:**

No.	Question	Yes	No
1.	Does the indicator address the carrying capacity of the natural resources -- renewable and non-renewable, local and non-local -- that the community relies on?		
2.	Does the indicator address the carrying capacity of the ecosystem services upon which the community relies, whether local, global, or from distant sources?		
3.	Does the indicator address the carrying capacity of aesthetic qualities -- the beauty and life-affirming qualities of nature -- that are important to the community?		
4.	Does the indicator address the carrying capacity of the community's human capital -- the skills, abilities, health and education of people in the community?		
5.	Does the indicator address the carrying capacity of a community's social capital -- the connections between people in a community: the relationships of friends, families, neighbourhoods, social groups, businesses, governments and their ability to cooperate, work together and interact in positive, meaningful ways?		
6.	Does the indicator address the carrying capacity of a community's built capital -- the human-made materials (buildings, parks, playgrounds, infrastructure, and information) that are needed for quality of life and the community's ability to maintain and enhance those materials with existing resources?		
7.	Does the indicator provide a long-term view of the community?		
8.	Does the indicator address the issue of economic, social or biological diversity in the community?		
9.	Does the question address the issue of equity or fairness -- either between current community residents (intra-generational equity) or between current and future residents (inter-generational equity)?		
10.	Is the indicator understandable to and useable by its intended audience?		
11.	Does the indicator measure a link between economy and environment?		
12.	Does the indicator measure a link between environment and society?		
13.	Does the indicator measure a link between society and economy?		
14.	Does the indicator measure sustainability that is at the expense of another community or at the expense of global sustainability?		

**Facilitator comments:**

**Assessment:**

# Assessment Feedback Form

Comments / Remarks	
<p><b>Feedback to learner on assessment:</b></p>	
<p><b>Feedback from learner to assessor:</b></p>	
<p><b>Learner's Signature:</b></p>	<p><b>Date:</b></p>
<p><b>Assessor's Signature:</b></p>	<p><b>Date:</b></p>



## 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

Example Questions	1. I am sure	2. I am unsure
1. In which area will I start the farm?		
2. What are the local veld types in this area?		
3. What plants or animals will work well with these veld types?		
4. What plants or animals will destroy these veld types?		
5. What are the weather patterns of this area?		
6. How will these weather patterns affect the crop that I want to grow?		
7. What is the climate like in this area?		
8. How will this climate affect the crop that I want to grow?		
9. What can I do to protect the biodiversity of the area where I want to farm?		
10. What inputs are available for my farm?		
11. What outputs can I expect from my farm?		
12. To which market will I sell my crop?		
13. How will I get my crop to this market?		
14. What is going to give income on my farm?		
15. What will the local community expect or gain from my farm?		
16. How can I ensure that my farm is sustainable economically?		

## 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.

When observed ...	Answer Yes or No	Motivate your answer (Give examples, reasons, etc.)
1. Can you identify problems and deficiencies correctly?		
2. Are you able to work well in a team?		
3. Do you work in an organised and systematic way while performing all tasks and tests?		
4. Are you able to collect the correct and appropriate information and / or samples as per the instructions and procedures that you were taught?		
5. Are you able to communicate your knowledge orally and in writing, in such a way that you show what knowledge you have gained?		
6. Can you base your tasks and answers on scientific knowledge that you have learnt?		
7. Are you able to show and perform the tasks required correctly?		
8. 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?		

- ◆ 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 your 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.

Learner Information Form				
Unit Standard	<b>116157</b>			
Program Date(s)				
Assessment Date(s)				
Surname				
First Name				
Learner ID / SETA Registration Number				
Job / Role Title				
Home Language				
Gender:	Male:		Female:	
Race:	African:	Coloured:	Indian/Asian:	White:
Employment:	Permanent:		Non-permanent:	
Disabled	Yes:		No:	
Date of Birth				
ID Number				
Contact Telephone Numbers				
Email Address				
Postal Address				Signature: