



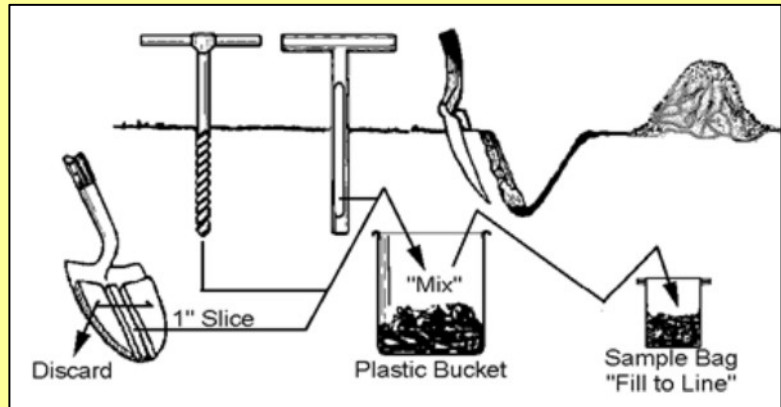
NQF Level: 1

US No: 116156

# Facilitator Guide

## Primary Agriculture

# Collect Agricultural Data



Facilitator: .....

Company: .....

Commodity: ..... 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 you get started...

Dear Facilitator,

This Facilitator Guide (together with the relevant Learner Guide) is aimed at facilitators who will be assisting learners wishing to complete the following unit standard:

<b>Title:</b> Collect agricultural data	<b>NQF Level:</b> 1	<b>Credits:</b> 2
<b>US No:</b> 116156		

This guide contains all necessary facilitation instructions to ensure that learners will attain the expected competencies required by the above-mentioned unit standard. This guide is designed to be used during the presentation of a learning session based on this unit standard. The full unit standard is attached at the end of this guide as well as at the end of the relevant Learner Guide. Learners are advised to read the unit standard at their time. Please discuss the unit standard with the learners to ensure that they understand what is expected from them to achieve the outcomes of the unit standard.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently facilitating, because that will be determined by the context of application:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	48970	1	120	
National Certificate in Mixed Farming Systems	48971	1	120	
National Certificate in Poultry Production	48972	1	120	

Please mark the learning program the learners are enrolled in:

Are you facilitating a:	Yes	No
Learnership?	<input type="checkbox"/>	<input type="checkbox"/>
Skills Program?	<input type="checkbox"/>	<input type="checkbox"/>
Short Course?	<input type="checkbox"/>	<input type="checkbox"/>

**Note to Facilitator:**

If you are presenting this module as part of a full qualification or learnership, please ensure that you have familiarised yourself with the content of the qualification.

Please explain the above concepts to the learner.

There are four guides, namely the Learner Guide, the Learner Workbook, the Assessor Guide and the Facilitator Guide.

These guides have been developed to address specific aspects of the learning experience. You therefore need to use these guides complementally to one another.

**Make this an enjoyable learning experience!**

## Context of Application ...

Primary Agriculture is a diverse sector and a wide range of commodities is being produced for both national and international market. Each commodity has its own production requirements and practices. You will be facilitating the learning process within a specific context where a specific agricultural commodity is being produced. The learning material has been written in a **generic** manner, as it is aimed to be available on national level and should be relevant to be applied within a variety of commodities. It is therefore inclusive of all agricultural commodities and crop in this field. Therefore, the examples that are being used in the materials may not always be applicable to your specific community, commodity, environment or region.

This presents you, the facilitator, with the challenge to **contextualise** the learning material. It is imperative that you, the Facilitator and Assessor interpret and present activities, case studies and projects related to the material in such a way that learners can easily identify and apply their knowledge within their own context. This will require from you to add examples of crop, which are applicable to the community or farm. Learners must be guided with examples from their own communities, commodities, environment or regions. This should be done by complementing the learning material with:

- Examples relevant to the commodity,
- Including commodity specific requirements,
- Including operating procedures of the farm,
- Including agricultural practice specific requirements,
- Agricultural markets,
- Guiding learners to write these specifics down in the learning guide, etc.

**The contextualisation of the learning material is a very important step in preparing for and facilitating the learning experience and enough time and effort should be put into this exercise.**

According to the qualifications mentioned on page 2, this module could be contextualised to fit the following groups of commodities:

Plant Production	Animal Production	
<ul style="list-style-type: none"> <li>• Organic production,</li> <li>• Hydroponic production,</li> <li>• Perma-culture production,</li> <li>• Agronomy,</li> <li>• Horticulture,</li> <li>• Natural resources harvesting.</li> </ul>	<ul style="list-style-type: none"> <li>• Small stock production,</li> <li>• Large stock production,</li> <li>• Dairy production,</li> <li>• Pig production,</li> <li>• Poultry production,</li> <li>• Game,</li> <li>• Aqua / mari culture,</li> <li>• Commercial insects</li> <li>• Animal fibres harvesting,</li> <li>• Bee keeping,</li> </ul>	<ul style="list-style-type: none"> <li>• Natural resources harvesting,</li> <li>• Organic production,</li> <li>• Perma-culture production,</li> <li>• Eco/Agri Tourism,</li> <li>• Agro Chemicals,</li> <li>• Horse Breeding,</li> <li>• Etc.</li> </ul>

# How to use this guide ...

Throughout the guide information is given specifically aimed at you, the facilitator, to **assist** in the actual presentation of the learning material and/or facilitation of the learning process. Although this guide contains all the information required for attaining competency in this unit standard, references to additional resources, both printed and electronic, are provided for additional reference by the facilitator and further study by the learner.

Please note that the purpose of this information is merely to **guide** you, the facilitator, and is provided as a suggestion of possibilities. It remains the responsibility of every facilitator to re-assess the learner/s in each learning situation throughout the learning process in order to stay in touch with their specific learning needs. This should be the determining factor in the choice of the learning approach to follow.

Use the different boxes listed below for identification purposes:



Instructions regarding **activities**, whether group or individual activities, will be described in this box.



Facilitators' Tip ...

## My Notes ...

You can use this box for your own notes/comments.

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# What & How will you be Facilitating?

<b>The Learning Experience ...</b>	<b>6</b>
<b>Agricultural Data Collection – An Introduction</b>	<b>6</b>
<b>Learning Program Time Frames</b>	<b>7</b>
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<b>Facilitator’s Checklist &amp; Training Aids</b>	<b>8</b>
<b>Contextualisation of Content!</b>	<b>9</b>

**Session 1: Elementary Methods of Data Collection** ..... **10**

**LG p7:** The different elementary methods of data collection in Agriculture (Interpreting a gauge; Measuring; Observing; Collecting samples; Counting; Scouting); The advantages and disadvantages of different methods of data collection.

**Session 2: Collect and Report on Collected Agricultural Data** ..... **12**

**LG p17:** Biological data; Physical and economical data; The correct methods to apply data collection; How & why we should collect data accurately; Required reporting formats; Identifying, noting and reporting on basic deviances in data.

**Session 3: Use and Maintain Data Collection Equipment** ..... **13**

**LG p22:** Using and maintaining data collection equipment correctly; Recording tools; How to use, store, repair and clean different types of recording tools.

**Session 4: Health & Safety Measures Applicable to Data Collection** ..... **14**

**LG p24:** Important health and safety measures for collection methods and equipment; Health and safety measures required for the safe collection of data; Appropriate protective garments and tools to be used during data collection; Applicable hygiene standards to maintain throughout the process of data collection.

**What will I do differently next time?** ..... **15**

**Excerpt: SAQA Unit Standard 116156**

## The Learning Experience...

### When learners have achieved this unit standard, they will:

- ◆ be able to collect routine agricultural data on instruction and will also be able to apply prescribed methods of data collection for agricultural purposes. In addition the learner will be well positioned to extend his/her learning and practice into more complex areas of data collection.
- ◆ be fully conversant with a narrow range of data collection procedures and contribute to the agricultural landscape in this regard.
- ◆ understand the importance of the application of business principles in agricultural production with specific reference to information systems and technology.
- ◆ 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. Farmers will gain the knowledge and skills to access mainstream agriculture through a business-oriented approach to agriculture.

### ■ Learning Assumed to be in Place:

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

- ◆ Functional literacy and numeracy.
- ◆ NQF 1: Select, use and care for hand tools and basic equipment and infrastructure.

## Agricultural Data Collection – An Introduction

### ■ What kinds of data do we collect?

- ◆ Occurrence of pest and disease infestations.
- ◆ Weather and climatic information – year on year.
- ◆ Rainfall.
- ◆ Costs of agricultural inputs.
- ◆ Prevailing economic conditions in the sector, country and internationally.
- ◆ Production costs per crop.
- ◆ Soil and fertilisation costs and applications.
- ◆ Pest and Weed Control application programs and statistics.
- ◆ Profit margins per cultivar / per crop / per block / per orchard / per Hectare.

### ■ The reasons why we would collect Agricultural Data

Patterns of the environment include rainfall, climate, dry cycles, original vegetation, seasons, movement patterns of animals, etc. Processes of the biophysical environment include the interaction and the relationship between food webs, human activities, soil, climate, water, plants, animals and solar energy.

It is always useful to have detailed records and data in order to ensure that we make optimum decisions in order to maximise profits, production and quality, whilst keeping risks and problems to a minimum.

## Learning Program Time Frames

	Total time allocated (hours)	Theoretical learning time allocated (hours)	Practical learning time allocated (hours)	Activities to be completed
<b>Complete Program (including summative assessment)</b>	20	6	14	5
<b>Learner Orientation and Ice Breaker</b>	55 minutes	20 minutes	30 minutes	N/a
<b>Purpose, Introduction and Learner Directions</b>	45 minutes	15 minutes	30 minutes	-
<b>Session 1</b>	3 hours	2 hours	1 hour	1.1 – 1.2
<b>Session 2</b>	2.5 hours	1 hour	1.5 hour	2.1 – 2.2
<b>Session 3</b>	3 hours	1 hour	2 hours	-
<b>Session 4</b>	9.5 hours	1.5 hours	8 hours practical work on a farm collecting and collating agricultural data information	3.4
<b>Preparation for Assessment &amp; revision</b>	30 minutes		30 minutes	-

## Tips for level of learning



Remember the following before you get started:

***This unit standard is aimed at level 1 learners.***

- ◆ A typical level 1 learner might be exposed to the world of work through this learning program for the first time.
- ◆ Explain concepts and define words in a simple, clear and concise method throughout the learning program to help the learner where possible.
- ◆ Take special care to facilitate for ALL learners. Allow them opportunities to share experiences, prior knowledge, translate into their mother tongue for each other and enjoy the learning process.
- ◆ The examples given in this resource guide might be for a different geographical area or commodity to what the learner is exposed to – please adapt your examples accordingly.

# Facilitator's Checklist & Training Aids

<b>Learner support strategies:</b>
Learners are supplied with all resources and aids as required by the programme – including: <ul style="list-style-type: none"> <li>▪ Objects &amp; devices such as equipment, protective clothing, safety gear, etc.</li> <li>▪ Learner Guides and Learner Workbooks.</li> <li>▪ Visual aids, etc.</li> </ul>

Use this checklist below during your preparation to ensure that you have all the equipment, documents and training aids for a successful session.

<b>Preparation:</b>	Yes	No
<b>Qualification Knowledge</b> – I have familiarised myself with the content of the applicable qualification.		
<b>Unit Standard Knowledge</b> – I have familiarised myself with the content of all aspects of the applicable unit standard.		
<b>Content Knowledge</b> – I have sufficient knowledge of the content to enable me to facilitate with ease.		
<b>Application knowledge</b> – I understand the programme matrix & have prepared for programme delivery accordingly.		
<b>Contextualisation</b> – I have included information which is specific to the commodity and practices related to the commodity.		
<b>Ability to respond to learners background &amp; experience</b> – I have studied the learner demographics, age group, experience & circumstances & prepared for programme delivery accordingly.		
<b>Enthusiasm &amp; Commitment</b> – I am passionate about my subject & have prepared my programme delivery to create a motivating environment with real commitment to success.		
<b>Enterprise knowledge</b> – I know & understand the values, ethics, vision & mission of the workplace & have prepared my programme delivery, reporting & administrative tasks accordingly.		
<b>Equipment check:</b>		
Learner guides x 1 per learner		
Assessment guides x 1 per learner		
Writing materials & stationary (facilitator & learner)		
White board & pens		
Flip chart paper		
Proxima projector & screen		
Laptop & programme disk		
Sample Hand-outs and examples of laws and other relevant documents		
Safety gear as prescribed by unit standard and applicable legislation		



Documentation checklist:		
Attendance Register		
Course Evaluation		
Learner Course Evaluation		
Portfolios of evidence		

## Contextualisation of Content!

Go through this module and indicate what specific **information / activities / examples** should be included in this module?

Contextualisation	
<ul style="list-style-type: none"> <li>▪ Commodity specific?</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Operating procedures of the farm?</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Agricultural practices?</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Agricultural markets?</li> </ul>	

# 1 Elementary Methods of Data Collection

Session

**Learner Guide:  
Page 7**

*After completing this session, the learner should be able to:*  
**SO 1: Demonstrate knowledge of different elementary methods of data collection.**

**Revise the concept of sustainable farming with learners and allow learners to think about what is required to make farming successful**

Concept (SO 1)	Time frame	Activities related to the concept
The different elementary methods of data collection in Agriculture. <ul style="list-style-type: none"> <li>Interpreting a gauge</li> <li>Measuring</li> <li>Observing</li> <li>Collecting samples</li> <li>Counting</li> <li>Scouting</li> </ul> The advantages and disadvantages of different methods of data collection.	<b>1 Hour</b>	<b>Activity 1.1 &amp; 1.2</b>



**Please allow learners to complete Activities 1.1 and 1.2**

Type of activity	Resources	Instructions to give to the learners	Conclusions
<b>1.1:</b> Class discussion + key notes	Assessment Workbook Stationary	Explain the concept of brainstorming.	The different elementary methods of data collection in Agriculture. <ul style="list-style-type: none"> <li>Interpreting a gauge</li> <li>Measuring</li> <li>Observing</li> <li>Collecting samples</li> <li>Counting</li> <li>Scouting</li> </ul>
<b>1.2</b> Role-play & Key-notes	Assessment Workbook Stationary	Let learners answer questions after analysing sampling procedures.	Correct sampling procedures

# Session 2 Collect and Report on Collected Agricultural Data

Learner Guide:  
Page 17

After completing this session, the learner should be able to:

**SO 2: Collect and report on collected agricultural data by using prescribed collection methods.**

Concept (SO 2)	Time frame	Activities related to the concept
<p>Collecting and reporting on collected agricultural data by using prescribed collection methods.</p> <ul style="list-style-type: none"> <li>Biological data.</li> <li>Physical and economical data, such as:                             <ul style="list-style-type: none"> <li>Pests</li> <li>Diseases</li> <li>Agro-chemicals (usage, applications and stockholding)</li> <li>Crops (yields)</li> <li>Stock controls</li> </ul> </li> <li>Economic indicators.</li> <li>Maintenance information.</li> <li>The correct methods to apply data collection.</li> <li>How &amp; why we should collect data accurately.</li> <li>Required reporting formats.</li> </ul> <p>Identifying, noting and reporting on basic deviances in data</p>	<b>1.5 hours</b>	<b>Activity 2.1 &amp; 2.2</b>

**Please allow learners to complete Activity 2.1 and 2.2 in their workbooks**



Type of activity	Resources	Instructions to give to the learners	Conclusions
<b>2.1:</b> Group brainstorm	Assessment Workbook Stationary	Read the activity instructions from the learner workbook out loud and allow learners an opportunity to make notes on their understanding and finding after each section.	How & why we should collect data accurately.
<b>2.2:</b> Worksheet	Assessment Workbook Stationary	Read the activity instructions from the learner workbook out loud and allow learners an opportunity to make notes on their understanding and finding after each section.	Identifying, noting and reporting on basic deviances in data.

## Session 3 Use and Maintain Data Collection Equipment

**Learner Guide:**  
**Page 22**

*After completing this session, the learner should be able to:*  
**SO 3: Using and maintaining data collection equipment correctly.**

Concept (SO 3)	Time frame	Activities related to the concept
Using and maintaining data collection equipment correctly. Recording tools: <ul style="list-style-type: none"> <li>• Pen and paper</li> <li>• Voice recorders</li> <li>• Electronic tools</li> <li>• Pin boards</li> <li>• Colour codes.</li> <li>• How to use them, store, repair and clean different types of recording tools</li> </ul>	2 Hours	

**My Notes ...**

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# 4 Health & Safety Measures Applicable to Data Collection

Session

**Learner Guide:  
Page 24**

*After completing this session, the learner should be able to:*  
**SO 4: Understand important health and safety measures for collection methods and equipment.**

Concept (SO 4)	Time frame	Activities related to the concept
<p>In this chapter we are going to explore the following concepts:</p> <ul style="list-style-type: none"> <li>Important health and safety measures for collection methods and equipment.</li> <li>Health and safety measures required for the safe collection of data</li> <li>Appropriate protective garments and tools to be used during data collection</li> <li>Applicable hygiene standards to maintain throughout the process of data collection.</li> </ul>	2 Hours	<b>Activity 4.1</b>



**Please allow learners to complete Activity 4.1 in their workbooks**

Type of activity	Resources	Instructions to give to the learners	Conclusions
<p><b>4.1:</b> Research and group presentation</p>	<p>Assessment Workbook Stationary</p>	<p>Explain to learner's instructions that are given in learner workbook. Allow an opportunity for learner to complete the questions in their workbook and swap books. Mark and give each other feedback.</p>	<ul style="list-style-type: none"> <li>Important health and safety measures for collection methods and equipment.</li> <li>Health and safety measures required for the safe collection of data.</li> <li>Appropriate protective garments and tools to be used during data collection.</li> <li>Applicable hygiene standards to maintain throughout the process of data collection.</li> </ul>

## What will I do differently next time?

Take some time to **reflect** on your own activities as facilitator of this Unit Standard. Then write down five of the most important lessons you have learnt and include a motivation:

What will I do differently next time?	Motivate how or why (Give examples, reasons, etc.)
1.	
2.	
3.	
4.	
5.	

As facilitator, you have hands on experience in the application of the unit standard. And you might experience difficulties with the unit standard that the developers did not anticipate. Also, the unit standard will be revised at the end of the registration period. Your comments below can be an important contribution in the revision process and should be brought to the attention of either the AgriSETA ETQA manager or the SGB chairperson.

Please take some time to reflect on your experience and list a few of the difficulties you had to address.

Difficulties I had with the Unit Standard	Recommended Changes to Address the Difficulty
6.	
7.	
8.	
9.	
10.	

## Excerpt: SAQA Unit Standard: 116156 - NQF Level 1

**Title:** Collect agricultural data

**Field:** Agriculture and Nature Conservation

**Sub-field:** Primary Agriculture

**US No:** 116156

**NQF Level:** 1

**Credits:** 2

### Purpose of the Unit Standard:

The learner achieving this unit standard will be able to collect routine agricultural data on instruction and will also be able to apply prescribed methods of data collection for agricultural purposes. In addition the learner will be well positioned to extend their learning and practice into more complex areas of data collection. Competent learners will be fully conversant with a narrow range of data collection procedures and contribute to the agricultural landscape in this regard.

Learners will understand the importance of the application of business principles in agricultural production with specific reference to information systems and technology.

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. Farmers will gain the knowledge and skills to access mainstream agriculture through a business-oriented approach to agriculture.

### 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 unit standard:

- Functional literacy and numeracy.
- NQF 1: Select, use and care for hand tools and basic equipment and infrastructure

### 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.

### Specific Outcome (SO) 1:

Demonstrate knowledge of different elementary methods of data collection.

**Outcome Range:** Different methods may include, but are not restricted to: interpreting a gauge, measuring, observing, collecting samples, counting, and scouting.

#### Assessment Criteria (AC):

1. Different methods of data collection are described correctly.
2. The advantages and disadvantages of different methods are described.

### Specific Outcome (SO) 2:

Collect and report on collected agricultural data by using prescribed collection methods.

**Outcome Range:** Agricultural data may include, but is not limited to: biological, physical and economical data, such as pests, diseases, agro-chemicals, crops, stock, economic, and maintenance information.

#### Assessment Criteria (AC):

1. The prescribed data collection methods are applied used correctly.
2. Data is collected accurately.
3. The required reporting format is applied.
4. Basic deviances in data are identified, noted and reported.

### Specific Outcome (SO) 3:

Use and maintain data collection equipment correctly.

**Outcome Range:** Recording tools may include, but are not restricted to pen and paper, voice recorders, electronic tools, pin boards, and colour codes.

#### Assessment Criteria (AC):

1. Correct use of data collection equipment is explained.
2. Correct method of storage of the data collection equipment is explained.
3. Minor repairs to the data collection equipment are performed correctly.
4. Collection equipment is cleaned correctly.

### Specific Outcome (SO) 4:

Apply health and safety measures applicable to the collection method and equipment.

1. Health and safety measures required for the safe collection of data are explained.
2. Appropriate protective garments and tools are used during data collection.
3. Applicable hygiene standards are maintained throughout the process of data collection.

### Essential Embedded Knowledge:

The qualifying learner is able to demonstrate a basic knowledge and understanding of:

- Different methods of data collection.
- Different methods of recording data.
- Different methods of presenting data.
- The names and functions of data collection tools and equipment.
- The descriptions and properties of the source of the data being collected.
- The description and properties of the data collection equipment.
- Sensory cues related to the measurement of the data, the data collection equipment and the source of the data.
- The purpose for learning about Information technology.
- The purpose of the data being collected.
- The correct procedures for collecting the data.
- All relevant rules, laws and regulations related to the source of the data and the data itself.
- The relationship between the data and information generated by it.

### Critical Cross-field Outcomes (CCFO):

The following relates to all specific outcomes:

**Identifying:** Problem solving relates to specific outcomes:

- Demonstrate knowledge of different elementary methods of data collection.
- Apply methods of recording collected data using various types of technology.
- Use and maintain data collection equipment correctly.
- Apply health and safety measures applicable to the collection method and equipment.

**Working:** Teamwork relates to specific outcome:

- Collect and report on collected agricultural data by using prescribed collection methods.

**Organizing:** Self-organisation and management relates to specific outcomes:

- Collect and report on collected agricultural data by using prescribed collection methods.
- Apply methods of recording collected data using various types of technology.
- Use and maintain data collection equipment correctly.
- Apply health and safety measures applicable to the collection method and equipment.

**Collecting:** Information evaluation relates to all specific outcomes.

**Communicating:** Communication relates to all specific outcomes.

**Science:** Use science and technology relates to all specific outcomes.

**Demonstrating:** Inter-relatedness of systems relates to specific outcomes:

- Use and maintain data collection equipment correctly.
- Apply health and safety measures applicable to the collection method and equipment.

**Contributing:** Self-development relates to specific outcomes

- Demonstrate knowledge of different elementary methods of data collection.
- Apply methods of recording collected data using various types of technology.
- Apply health and safety measures applicable to the collection method and equipment.