



NQF Level: 4

US No: 116322

Facilitator Guide

Primary Agriculture

Manage water Quality parameter



Facilitator:

Company:

Commodity: Date:

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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:

Title: Manage water quality parameters
US No: 116322 NQF Level: 4 Credits: 3

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 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	48979	4	120	<input type="checkbox"/>
National Certificate in Plant Production	49009	4	120	<input type="checkbox"/>

Please mark the learning program the learners are enrolled in:

Are you enrolled in a:	Y	N
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 three guides, namely the Learner Guide (with activities), 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"> • Organic production, • Hydroponic production, • Perma-culture production, • Agronomy, • Horticulture, • Natural resources harvesting. 	<ul style="list-style-type: none"> • Small stock production, • Large stock production, • Dairy production, • Pig production, • Poultry production, • Game, • Aqua / mari culture, • Commercial insects • Animal fibres harvesting, • Bee keeping, 	<ul style="list-style-type: none"> • Natural resources harvesting, • Organic production, • Perma-culture production, • Eco/Agri Tourism, • Agro Chemicals, • Horse Breeding, • Etc.

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?

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The Learning Experience...

On completion of this module, the learners will be able to:

- ◆ Implement corrective actions based on water quality parameters. In addition they will be well positioned to extend their learning and practice into other areas of agriculture and water management.
- ◆ Learners will gain specific knowledge and skills in maintaining water quality and will be able to operate in an animal production environment implementing sustainable and economically viable production principles.
- ◆ They will be capacitated to gain access to the mainstream agricultural sector, in animal production, impacting directly on the sustainability of the sub-sector. The improvement in production technology will also have a direct impact on the improvement of agricultural productivity of the sector.
- ◆ Correctly assess, analyze and evaluate water quality data and independently decide on the corrective actions within operational technical systems to well defined, but possibly unfamiliar problems.
- ◆ Demonstrate a thorough understanding of the reasons, impacts and implications of specific corrective actions related to water quality.
- ◆ Implement corrective actions related to the quality of water and water quality systems
- ◆ Evaluate the effects of corrective actions or adjustments on the water quality requirements.

Learners will also gain basic knowledge of:

- ◆ Names and functions of all the various components of water supply and quality systems.
- ◆ Attributes of water related to water quality
- ◆ The requirements of organisms related to their water need.
- ◆ The purposes of maintaining relevant water quality for living organisms.
- ◆ Measurement and recording technique.
- ◆ Water purification techniques and systems.
- ◆ Relevant legislation related to the feeding and care of living organisms.
- ◆ Relevant legislations related to water use and environmental issues.
- ◆ Interpersonal skills related to communication.
- ◆ Sensory and documented cues related to water quality.
- ◆ Sensory cues related to the water requirements and use of water by living organisms.

Learning Assumed to be in Place:

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

- ◆ NQF 3: Maintain water quality parameters (116212).
- ◆ NQF 3: Recognise and identify the basic functions of the ecological environment (116064).
- ◆ NQF 3: Apply routine maintenance and servicing plans and procedures (116275).

Learning Program Time Frames

	Total time allocated (hours)	Theoretical learning time allocated (hours)	Practical learning time allocated (hours)	Activities to be completed
Complete Program (including summative assessment)	30 hours	12 hours	18 hours	4
Learner Orientation and "Ice Breaker"	1 hour	-	1 hour	-
Purpose, Introduction and Learner Directions	1 hour	1 hour	-	-
Session 1	7 hours	3 hours	4 hours	1
Session 2	7 hours	2 hours	5 hours	2
Session 3	6 hours	2 hours	4 hours	3
Session 4	6 hours	3 hours	3 hours	4
Preparation for Assessment & revision	2 hours	1 hour	1 hour	-

Tips for level of learning



Remember the following before you get started:

Typically, a learning programme leading to the award of a qualification or unit standards at level 4 should develop learners who demonstrate an ability to:-

- Take responsibility for their own learning within a supervised environment.
- Take decisions about and responsibility for actions.
- Evaluate their own performance against given criteria.
- Take the initiative to address any shortcomings they find.
- Communicate and present information reliably and accurately in writing and verbally.
- Gather relevant information, analysis and evaluation skills.
- Use their knowledge to solve common problems within a familiar context; adjust an application of a common solution within relevant parameters to meet the needs of small changes in the problem or operating context; motivate the change using relevant evidence.
- Apply essential methods, procedures and techniques of the field or discipline; apply and carry out actions by interpreting information from text and operational symbols or representations.
- Understand the organisation or operating environment as a system within a wider context.
- Demonstrate a fundamental knowledge base of the most important areas of one or more fields or disciplines, in addition to the fundamental areas of study an informed understanding of the key terms, rules, concepts, established principles and theories in one or more fields or disciplines.

Facilitator's Checklist & Training Aids

Learner support strategies:

Learners are supplied with all resources and aids as required by the programme – including:

- Objects & devices such as equipment, protective clothing, safety gear, etc.
- Learner Guides and Learner Workbook
- Visual aids, etc.

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

Preparation:	Yes	No
Qualification Knowledge – I have familiarised myself with the content of the applicable qualification		
Unit Standard Knowledge – I have familiarised myself with the content of all aspects of the applicable unit standard		
Content Knowledge – I have sufficient knowledge of the content to enable me to facilitate with ease		
Application knowledge – I understand the programme matrix & have prepared for programme delivery accordingly		
Contextualisation – I have included information which is specific to the commodity and practices related to the commodity		
Ability to respond to learners background & experience – I have studied the learner demographics, age group, experience & circumstances & prepared for programme delivery accordingly		
Enthusiasm & Commitment – I am passionate about my subject & have prepared my programme delivery to create a motivating environment with real commitment to success		
Enterprise knowledge – I know & understand the values, ethics, vision & mission of the workplace & have prepared my programme delivery, reporting & administrative tasks accordingly.		
Equipment check:		
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"> ▪ Commodity specific? 	
<ul style="list-style-type: none"> ▪ Operating procedures of the farm? 	
<ul style="list-style-type: none"> ▪ Agricultural practices? 	
<ul style="list-style-type: none"> ▪ Agricultural markets? 	

Session

1

Water quality data

Learner Guide:
Page 8

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

SO 1: Correctly assess, analyse and evaluate water quality data and independently decide on the corrective actions within operational technical systems to well defined, but possibly unfamiliar problems.

Concept (SO 1)	Time frame	Activities related to the concept
A thorough understanding of the effects of certain physical factors is demonstrated and is related and applied as a standard procedure or a corrective action to relevant plant or animal species.	7 hours	Activity 1
A thorough understanding of the effects of certain chemical factors is related to and applied as a standard procedure or a corrective action to relevant plant or animal species.		
A thorough understanding of the effects of certain microbiological characteristics is related to and applied as a standard procedure or a corrective action to relevant plant or animal species.		
A thorough understanding of the effects of certain biological processes is related to and applied as a standard procedure or a corrective action to relevant plant or animal species.		
A thorough knowledge and understanding of the principles and use of operational technical systems is related, integrated and applied as a standard procedure or a corrective action to relevant plant or animal species.		

2

Understand the impact of corrective actions

Session

**Learner Guide:
Page 20**

After completing this session, the learner should be able to:
SO 2: Demonstrate a thorough understanding of the reasons, impacts and implications of specific corrective actions related to water quality.

Concept (SO 2)	Time frame	Activities related to the concept
A wide range of scholastic and technical concepts related to water and all its aspects is recalled.	7 hours	Activity 2
An analysis of collected data or information and the reasons for specific corrective actions are explained and presented.		
Information, especially within the context of corrective actions is independently accessed, analyzed and evaluated.		



Please allow learners to complete Activity 2 in their Learner Guides

Type of activity	Resources
Class discussion.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	

My Notes ...

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Session **3** Corrective actions

**Learner
Guide:
Page 26**

After completing this session, the learner should be able to:
SO 3: Implement corrective actions related to the quality of water and water quality systems.

Concept (SO 3)	Time frame	Activities related to the concept
Water quality and processing systems are explained and described.	6 hours	Activity 3
Quality management systems, as related to water quality are described.		
Quality in existing implemented water quality assurance systems is maintained.		
Water quality and processing systems, ensuring water quality and integrity is maintained.		



Please allow learners to complete Activity 3 in their Learner Guides

Type of activity	Resources
Research and discover.	Learner Guide, stationary.
Instructions to give to the learners	
As per instructions in Learner Guide.	

My Notes ...

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4

Effects of corrective actions

Session

**Learner
Guide:
Page 37**

After completing this session, the learner should be able to:
SO 4: Evaluate the effects of corrective actions or adjustments on the water quality requirements.

Concept (SO 4)	Time frame	Activities related to the concept
The implementation of corrective actions or adjustments on water quality, supply and integrity is evaluated.	6 hours	Activity 4
Further adjustments or adaptations to water supply and quality management systems are proposed.		
Water quality management systems are in place and reported on continuously.		



Please allow learners to complete Activity 4 in their Learner Guides

Type of activity	Resources
Experiment	Learner Guide, stationary, water sources
Instructions to give to the learners	
As per instructions in Learner Guide	

My Notes ...

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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.	