REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARDS

FOR

**AGRICULTURE EXTENSION
LEVEL 4**

TVET CDACC
P.O. BOX 15745-00100
NAIROBI

FOREWORD

The provision of quality education and training is fundamental to the Government's overall strategy for social economic development. Quality education and training will contribute to achievement of Kenya's development blueprint, Vision 2030 and sustainable development goals.

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution of Kenya 2010 and this resulted to the formulation of the Policy Framework for Reforming Education and Training (Sessional Paper No. 4 of 2016). A key feature of this policy is the radical change in the design and delivery of the TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that these Occupational Standards were developed for developing a competency-based curriculum for Agriculture Extension. These Occupational Standards will also be the bases for assessment of an individual for competence certification.

It is my conviction that these Occupational Standards will play a great role towards development of competent human resource for the agriculture sector's growth and development.

PRINCIPAL SECRETARY, VOCATIONAL AND TECHNICAL TRAINING
MINISTRY OF EDUCATION

PREFACE

Kenya Vision 2030 aims to transform the country into a newly industrializing, "middle-income country providing a high-quality life to all its citizens by the year 2030". Kenya intends to create a globally competitive and adaptive human resource base to meet the requirements of a rapidly industrializing economy through life-long education and training. TVET has a responsibility of facilitating the process of inculcating knowledge, skills and attitudes necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency Based Education and Training (CBET).

The Technical and Vocational Education and Training Act No. 29 of 2013 emphasized the need to reform curriculum development, assessment and certification. This called for a shift to CBET to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labor force.

TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with the relevant Industry Advisory Committee and Sector Skills Advisory Committee (SSAC) have developed these occupational standards. These standards will be the bases for development of competency-based curriculum for agriculture extension.

The occupational standards are designed and organized with clear performance criteria for each element of a unit of competency. These standards also outline the required knowledge and skills as well as evidence guide.

I am grateful to the Council Members, Council Secretariat, SSAC, expert workers and all those who participated in the development of these Occupational Standards.

Prof. CHARLES M. M. ONDIEKI, PhD, FIET (K), Con. EngTech.
CHAIRMAN, TVET CDACC

ACKNOWLEDGMENT

TABLE OF CONTENTS

ACRONYMS

CBET	Competency Based Education and Training
CC	Collège Champlain
CCNB	Collège Communautaire du Nouveau-Brunswick
CDACC	Curriculum Development Assessment and Certification Council
CSTJ	Cégep Saint-Jean-sur-Richelieu
DACUM	Develop a Curriculum
GAP	Good Agricultural Practices
LPM	Livestock Production Manual
MoE	Ministry of Education Science and Technology
NOS	National Occupation Standard
OS	Occupational Standard
PPE	Personal Protective Equipment
SSAC	Sector Skills Advisory Committee
TVETA	Technical and Vocational Education and Training Authority

KEY TO UNIT CODE

BC
CC
ENG / OS / IA / CR / 01 / 6 / A

Industry or Sector

Occupational Standards

Occupational Area
(Industrial Automation and Robotics)

Type of Competency
(Basic, Common, Core)

Competency Number

Competency Level

Version Control
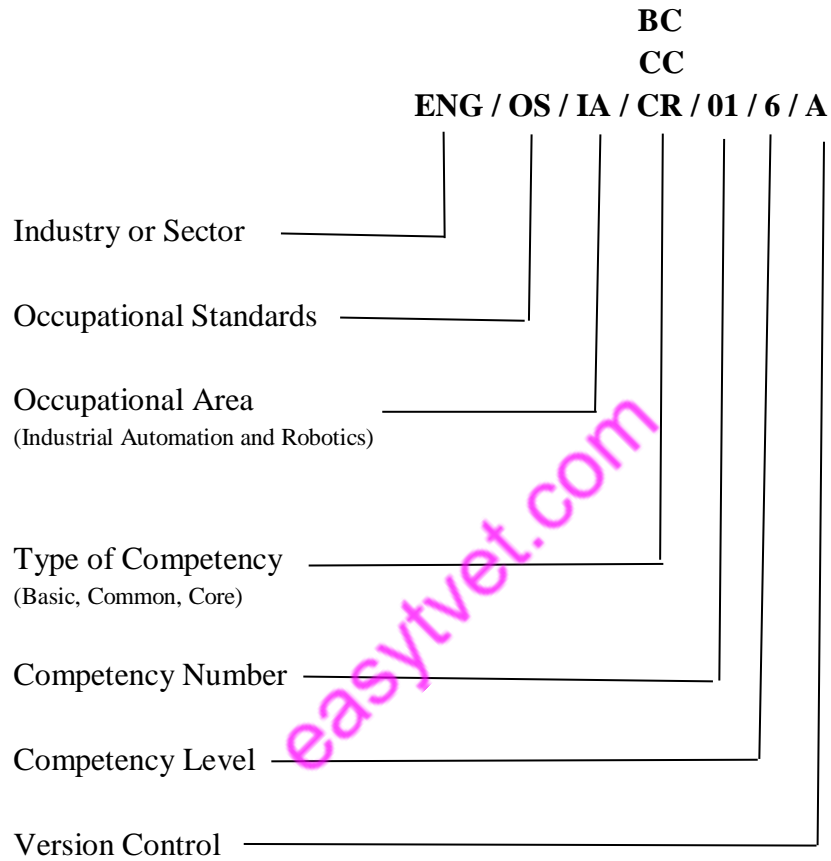
COURSE OVERVIEW

Agriculture extension level 4 qualification consists of competencies that an individual must achieve to enable him/her to establish agricultural crop, perform crop protection, harvest the crops, maintain livestock health, feed livestock, breed livestock and keeping farm records

The units of competency comprising Agriculture extension level 4 certificate qualifications include the following:

BASIC UNITS OF COMPETENCY

Unit Of Learning Code	Unit Of Learning Title
AGR/OS/EXT/BC/01/4	Demonstrate communication skills
AGR/OS/EXT/BC/02/4	Demonstrate numeracy skills
AGR/OS/EXT/BC/03/4	Demonstrate digital literacy
AGR/OS/EXT/BC/04/4	Demonstrate entrepreneurial skills
AGR/OS/EXT/BC/05/4	Demonstrate employability skills
AGR/OS/EXT/BC/06/4	Demonstrate environmental literacy
AGR/OS/EXT/BC/07/4	Demonstrate occupational safety and health practices
Total	

CORE UNITS OF COMPETENCY

Unit Of Learning Code	Unit Of Learning Title
AGR/OS/EXT/CR/01/4	Establish the crop
AGR/OS/EXT/CR/02/4	Perform crop protection
AGR/OS/EXT/CR/03/4	Harvest crops
AGR/OS/EXT/CR/04/4	Maintain livestock health
AGR/OS/EXT/CR/05/4	Feed the livestock
AGR/OS/EXT/CR/06/4	Breed livestock
AGR/OS/EXT/CR/07/4	Keep farm records

BASIC UNITS OF COMPETENCY

DEMONSTRATE COMMUNICATION SKILLS

UNIT CODE: AGR/OS/EXT/BC/01/4

UNIT DESCRIPTION

This unit covers the competencies required to gather, interpret and convey information in response to workplace requirements and to lead in the dissemination and discussion of ideas, information and issues in the workplace.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range***
1. Obtain and convey workplace information	1.1. Specific and relevant information is accessed from ***appropriate sources*** 1.2. Effective questioning, active listening and speaking skills are used to gather and convey information 1.3. Appropriate ***medium*** is used to transfer information and ideas 1.4. Appropriate non- verbal communication is used 1.5. Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6. Defined workplace procedures for the location and ***storage*** of information are used 1.7. Personal interaction is carried out clearly and concisely
2. Complete relevant work-related documents	2.1 Range of forms relating to conditions of employment are completed accurately and legibly 2.2 Workplace data is recorded on standard workplace forms and documents 2.3 Basic mathematical processes are used for routine calculations 2.4 Errors in recording information on forms/ documents are identified and properly acted upon 2.5 Reporting requirements to supervisor are completed according to organizational guidelines
3. Communicate information about	3.1 Appropriate method of communication is selected

workplace processes	3.2	Multiple operations involving several topics areas are communicated accordingly
	3.3	Questions are used to gain extra information
	3.4	Correct sources of information are identified
	3.5	Information is selected and organized correctly
	3.6	Verbal and written reporting is undertaken when required
	3.7	Communication skills are maintained in all situations
4. Lead workplace discussion	4.1	Response to workplace issues are sought
	4.2	Response to workplace issues are provided immediately
	4.3	Constructive contributions are made to workplace discussions on such issues as production, quality and safety
	4.4	Goals/objectives and action plan undertaken in the workplace are communicated accordingly
5. Identify and communicate issues arising in the workplace	5.1	Issues and problems are identified as they arise
	5.2	Information regarding problems and issues are organized coherently to ensure clear and effective communication
	5.3	Dialogue is initiated with appropriate personnel
	5.4	Communication problems and issues are raised as they arise

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range (include but not limited to:)
Methods of communication	• Non-verbal gestures • Verbal • Face to face • Two-way radio • Speaking to groups • Using telephone • Written • Internet
Workplace discussion	• Coordination meetings • Toolbox discussion • Peer-to-peer discussion

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Organize information
- Understand and convey intended meaning
- Participate in variety of workplace discussions
- Comply with organization requirements for the use of written and electronic communication methods
- Effective report writing
- Effective clarifying and probing skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Organization requirements for written and electronic communication methods
- Effective verbal communication methods
- Report writing
- Effective questioning techniques (clarifying and probing)
- Workplace etiquette

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Dealt with a range of communication/information at one time
	1.2 Made constructive contributions in workplace issues
	1.3 Sought workplace issues effectively
	1.4 Responded to workplace issues promptly
	1.5 Presented information clearly and effectively in written form
	1.6 Used appropriate sources of information
	1.7 Asked appropriate questions
	1.8 Provided accurate information
2. Resource Implications	The following resources should be provided:
	2.1 Variety of Information
	2.2 Communication tools
	2.3 Simulated workplace
3. Methods of Assessment	3.1 Case Study
	3.2 Third-party reports
	3.3 Portfolio
	3.4 Interview
	3.5 Role Play
4. Context of Assessment	Competency may be assessed individually in the actual workplace or through accredited institution
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE NUMERACY SKILLS

UNIT CODE: AGR/OS/EXT/BC/02/4

UNIT DESCRIPTION

This unit covers the competencies required to perform numerical functions. The person who is competent in this unit shall be able to: Identify and use whole numbers and simple fractions, decimals and percentages; Identify, measure and estimate familiar quantities for work, Read and use familiar maps, plans and diagrams for work, Identify and describe common 2D and some 3D shapes for work, construct simple tables and graphs for work using familiar data, Identify and interpret information in familiar tables, graphs and charts for work.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. *Bold and italicized terms are elaborated in the Range.*
1. Identify and use whole numbers and simple fractions, decimals and percentages for work	1.1 Simple fractions, decimals and percentages identified and interpreted 1.2 understanding of place value by organising numbers from smallest to largest demonstrated 1.3 Required numerical information located and decision made on appropriate method to solve a problem 1.4 Limited range of calculations performed using the 4 operations 1.5 Links between operations described 1.6 Estimations made to check reasonableness of results of problem-solving process 1.7 Numerical information recorded, and the result of the task communicated using informal and some formal language and symbolism

2. Identify, measure and estimate familiar quantities for work	2.1 Measurement information in workplace tasks and texts identified and interpreted
	2.2 Familiar units of measurement needed for tasks is identified
	2.3 Familiar and simple amounts estimated
	2.4 Appropriate measuring equipment selected
	2.5 Simple measuring equipment graduated in familiar units to measure relevant quantities is used
	2.6 Calculation done using familiar units of measurement
	2.7 Measurements and results checked against estimates
	2.8 Results are recorded or reported
	2.9 Results relevant to the workplace task are communicated using informal and some formal mathematical and general language
3. Read and use familiar maps, plans and diagrams for work	3.1 Items and places are located in familiar maps, plans and diagrams
	3.2 Common symbols and keys recognised in familiar maps, plans and diagrams
	3.3 Understanding of direction and location demonstrated by describing the location of objects, or route to familiar places
	3.4 Instructions to locate familiar objects or places are given and followed
	3.5 Informal and some formal oral mathematical language and symbols are used
4. Identify and describe common 2D and some 3D shapes for work	4.1 Common 2D shapes and some common 3D shapes in familiar situations are identified and named
	4.2 Common 2D shapes and designs are compared and classified
	4.3 Informal and some formal language used to describe common two-dimensional shapes and some common three-dimensional shapes
	4.4 Simple items used to draw or construct common 2D shapes
	4.5 Common 3D shapes matched to their 2D sketches or nets

5. Construct simple tables and graphs for work using familiar data	5.1 Common types of graphs are identified and named 5.2 Familiar data to be collected is determined 5.3 A method to collect data is selected 5.4 A small amount of simple familiar data is collected 5.5 One or two variables determined from the data collected 5.6 Data ordered and collated 5.7 A table constructed, and data enter 5.8 Graphs are constructed using data from table 5.9 Results are promptly checked 5.10 Graph information related to work is reported or discussed using informal and some formal mathematical and general language
6. Identify and interpret information in familiar tables, graphs and charts for work	6.1 Simple tables are identified in familiar texts and contexts 6.2 Title, headings, rows and columns located in familiar tables 6.3 Information and data in simple tables identified and interpreted 6.4 Information is related to relevant workplace tasks 6.5 Familiar graphs and charts are identified in familiar texts and contexts 6.6 Title, labels, axes, scale and key from familiar graphs and charts are located 6.7 Information and data in familiar graphs and charts is identified and interpreted 6.8 Information related to relevant workplace tasks

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range (include but not limited to:)
Simple measuring equipment	• Rulers • Watches/clocks • Scales • Thermometers • AVO meter
Common 2D shapes and common 3D shapes	• Round

	• Square
	• Rectangular
	• Triangle
	• Sphere
	• Cylinder
	• Cube
	• Polygons
	• Cuboids
Diagrammatical representation	• Charts
	• Maps
	• Graphs

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:
- Applying Fundamental operations (addition, subtraction, division, multiplication)
- Using calculator
- Using different measuring tools

Required knowledge

The individual needs to demonstrate knowledge of:
- Types of common shapes
- Differentiation between two dimensional shapes / objects
- Formulae for calculating area and volume
- Types and purpose of measuring instruments
- Units of measurement and abbreviations
- Fundamental operations (addition, subtraction, division, multiplication)
- Rounding techniques
- Types of fractions
- Different types of tables and graphs
- Meaning of graphs, such as increasing, decreasing, and constant value
- Preparation of basic data, tables & graphs

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Simple fractions, decimals and percentages are correctly identified and interpreted
	1.2 Performed a limited range of calculations using the 4 operations
	1.3 Performed calculations using familiar units of measurement
	1.4 Recognised common symbols and keys in familiar maps, plans and diagrams
	1.5 Constructed simple tables and graphs using familiar data
	1.6 Identified and interpret information in familiar tables, graphs and charts
2. Resource Implications	2.1 Calculator
	2.2 Basic measuring instruments
3. Methods of Assessment	Competency may be assessed through:
	3.1 Written Test
	3.2 Interview/Oral Questioning
	3.3 Demonstration
4. Context of Assessment	Competency may be assessed in an off the job setting
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE DIGITAL LITERACY

UNIT CODE: AGR/OS/EXT/BC/03/4

UNIT DESCRIPTION
This unit covers the competencies required to effectively demonstrate digital literacy in a working environment. It entails identifying and using digital devices such as smartphones, tablets, laptops and desktop computers for purposes of communication and performing work related tasks at the work place.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range***
1. Identify computer software and hardware	1.1 ***Appropriate computer software*** is identified according to manufacturer's specification 1.2 ***Appropriate computer hardware*** is identified according to manufacturer's specification
2. Apply security measures to data, hardware, software	2.1 ***Data security and privacy are classified*** in accordance with the technological situation 2.2 ***Security and control measures*** are applied in accordance with laws governing protection of ICT 2.3 Computer threats and crimes are detected. 2.4 Protection against computer crimes is undertaken in accordance with laws governing protection of ICT
3. Apply computer software in solving tasks	3.1 Basic ***word processing concepts*** are applied in resolving workplace tasks 3.2 ***Word processing utilities*** are applied in accordance with workplace procedures 3.3 Data is manipulated on worksheet in accordance with office procedures
4. Apply internet and email in communication at workplace	4.1 Electronic mail is applied in workplace communication in accordance with office procedures 4.2 Office internet functions are defined and executed in accordance with office procedures 4.3 ***Network configuration*** and uses are determined in accordance with office operations procedures

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range (may include but not limited to:)
Appropriate computer software	• A collection of instructions that enable the user to interact with a computer, its hardware, or perform tasks. • Computer tools that will help computer users interact with the hardware in a computer.
Appropriate computer hardware	• Collection of physical parts of a computer system. This includes the computer case, monitor, keyboard, and mouse and all the parts inside the computer case, such as the hard disk drive, motherboard, video card,
Data security and privacy	• Confidentiality • Cloud computing • Confidentiality • Cyber terrorism • Integrity -but-curious data serving
Security and control measures	• Countermeasures and risk reduction • Cyber threat issues • Risk management
Word processing concepts	• Using a special program to create, edit, and print documents
Network configuration	• Organizing and maintaining information on the components of a computer network

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Analytical skills
- Interpretation
- Typing
- Communication
- Computing (applying fundamental operations such as addition, subtraction, division and multiplication)

- Using calculator
- Basic ICT skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Input and output devices
- Central processing Unit (CPU)
- Peripherals
- Storage Media
- Software concept
- Types of concept
- Function of computer software
- Data security and privacy
- Security threats and control measures
- Computer crimes
- Detection and protection of computer crimes
- Laws governing protection of ICT
- Word processing;
  - ✓ Functions and concepts of word processing.
  - ✓ Documents and tables creation and manipulations
  - ✓ Mail merging
  - ✓ Word processing utilities
- Spread sheet;
  - ✓ Meaning, formulae, function and charts, uses, layout, data manipulation and application to cell
- Networking and Internet;
  - ✓ Meaning, functions and uses of networking and internet.
  - ✓ Electronic mail and world wide web
- Emerging trends and issues in ICT;
  - ✓ Identify and apply emerging trends and issues in ICT
  - ✓ Challenges posed by emerging trends and issues

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Identified input, output, CPU and storage media devices of computers according to computer specification
	1.2 Identified concepts, types and functions of computer software according to operation manual
	1.3 Identified and controlled security threats
	1.4 Detected and protected computer crimes
	1.5 Applied word processing in office tasks
	1.6 Prepared work sheet and applied data to the cells according to workplace procedures
	1.7 Used Electronic Mail for office communication as per workplace procedure
	1.8 Applied internet and World Wide Web for office tasks in accordance with office procedures
	1.9 Applied laws governing protection of ICT
2. Resource Implications	2.1 Smartphones
	2.2 Tablets
	2.3 Laptops and
	2.4 Desktop PCs
	2.5 Desktop computer
	2.6 Calculator
	2.7 Internet
	2.8 Smart phone
	2.9 Operations Manuals
3. Methods of Assessment	Competency may be assessed through:
	3.1 Written Test
	3.2 Demonstration
	3.3 Practical assignment
	3.4 Interview/Oral Questioning
	3.5 Demonstration
4. Context of Assessment	Competency may be assessed in an off and on the job setting
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE ENTREPRENEURIAL SKILLS

UNIT CODE: AGR/OS/EXT/BC/04/4

UNIT DESCRIPTION

This unit covers the competencies required for creating and maintaining small scale business, establishing small business customer base, managing and growing a micro/small-scale business.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. *Bold and italicized terms are elaborated in the Range*
1. Create and maintain small-scale business	1.1 Generation and evaluation of business ideas is undertaken in accordance with the existing procedure 1.2 Competencies are matched with business opportunities in accordance with business practices. 1.3 Procedure for starting a small business is identified as per the legal requirements 1.4 SWOT/ PESTEL analysis and or industrial survey is carried out according to office procedures 1.5 **Business operations** are monitored and controlled following established procedures. 1.6 Quality assurance measures are implemented consistently. 1.7 Good relations are maintained with staff/workers. 1.8 Policies and procedures on occupational safety and health and environmental concerns are constantly observed.
2. Establish small business customer base	2.1 Good customer relations are maintained in accordance with office procedures 2.2 New customers and markets are identified, explored and reached out to according to the marketing plan 2.3 Promotions/Incentives are offered to loyal customers in accordance with office procedures 2.4 Additional products and services are evaluated and tried in accordance with marketing strategy

		2.5	Customer record is maintained in accordance with office procedures
3.	Manage small scale business	3.1	Enterprise is built up and sustained through judicious control of cash flows.
		3.2	**Profitability of enterprise** is ensured though appropriate internal controls.
		3.3	Unnecessary or lower-priority expenses and purchases are avoided to ensure profitability
		3.4	Basic cost-benefit analysis is undertaken in accordance with office procedures
		3.5	Basic financial management are undertaken in accordance with office procedures
		3.6	Basic financial accounting in undertaken in accordance with office procedures
		3.7	Business **internal controls** are implemented in accordance with office procedure
		3.8	Setting business priorities and strategies is carried out according to office procedures
		3.9	Preparation and interpretation of basic financial statements is undertaken in accordance with set procedures
		3.10	*Preparation of business plans* for small business is undertaken in accordance with business strategy
		3.11	Business Social Responsibility is maintained in accordance with Standard Operations Procedures (SOP)
4.	Grow/ expand small scale business	4.1	Prepared business growth strategy for small sale business in accordance with office procedures
		4.2	Incorporated technology in small scale business growth in accordance with technological trends
		4.3	Emerging issues and trends are considered in accordance with business growth strategy
		4.4	Built audience interest in product/service according to growth strategy
		4.5	Boosted cooperate communication according to business **communication strategy**

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range (include but not limited to:)
Business Strategy	- Manage wastages - Environmental conservation
Business Operations	- Purchasing - Accounting/administrative - Work production/operations/sales - Marketing
Internal control	- Accounting systems - Financial statements/reports - Cash management - Human resource management
Profitability of enterprise:	Operating expenses lower than income
Communication strategy	- Blue print of exchange of information - Technology and exchange of information

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit of competency.

Required Skills
The individual needs to demonstrate the following skills:
- Individual marketing skills
- Using basic advertising (posters/ tarpaulins, flyers, social media,
- Basic bookkeeping/ accounting skills
- Communication skills

Required Knowledge
The individual needs to demonstrate knowledge of:
- Generation and evaluation of business ideas
- Legal requirements for starting a small business
- SWOT/ PESTEL analysis
- Occupational Safety and Health
- Public relations concepts
- Business plan
- Business financing
- Marketing strategies

- Business management and control
- Production/ operation process
- Product promotion strategies
- Market and feasibility studies
- Business ethics
- Building customer relations
- Business models and strategies
- Types and categories of businesses
- Business internal controls
- Relevant national and local legislation and regulations
- Basic quality control and assurance concepts
- Building relations with customer and employees
- Building competitive advantage of the enterprise
- Business growth strategies

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Demonstrated entrepreneurial skills
	1.2 Demonstrate competencies to create a small-scale business
	1.3 Demonstrated ability to conceptualize and plan a micro/small business
	1.4 Grew customer base for the small-scale business
	1.5 Demonstrated ability to manage/operate a micro/small-scale business
	1.6 Demonstrated competencies to grow a micro/small-scale business
2. Resource Implications	The following resources should be provided:
	2.1 Case studies on micro/small-scale enterprises
	2.2 Materials and location relevant to the proposed activity and tasks

3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Case studies 3.2 Oral Questioning 3.3 Portfolio 3.4 Projects
4. Context of Assessment	Competency may be assessed in workplace or in a simulated workplace setting. Assessment shall be observed while tasks are being undertaken whether individually or in-group.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE EMPLOYABILITY SKILLS

UNIT CODE: AGR/OS/EXT/BC/05/4

UNIT DESCRIPTON

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating critical safe work habits, demonstrating workplace learning and workplace ethics.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. *Bold and italicized terms are elaborated in the Range*
1. Conduct self-management	1.1 Personal vision, mission and goals are formulated based on potential and in relation to organization objectives 1.2 Emotions are managed as per workplace requirements 1.3 Individual performance is evaluated and monitored according to the agreed targets. 1.4 Assertiveness is developed and maintained based on the requirements of the job. 1.5 Accountability and responsibility for own actions are demonstrated. 1.6 Self-esteem and a positive self-image are developed and maintained. 1.7 Time management, attendance and punctuality are observed as per the organization policy. 1.8 Goals are managed as per the organization's objective 1.9 Self-strengths and weaknesses are identified as per *personal objectives* 1.10 Critics are managed as per personal objectives 1.11 Demonstrate interpersonal communication 1.12 Information is shared as per communication structure 1.13 Work activity is organized with other involved personnel as per the SOPs

2. Demonstrate critical safe work habits	2.1 Stress is managed in accordance with workplace procedures.
	2.2 Punctuality and time consciousness is demonstrated in line with workplace policy.
	2.3 Personal objectives are integrated with organization goals based on organization's strategic plan.
	2.4 Work priorities are set in accordance to workplace procedures.
	2.5 *Feedback* on performance is collected and evaluated based on established *team* learning process
	2.6 Leisure time is recognized in line with organization policy.
	2.7 Abstinence from *drug and substance abuse* is observed as per workplace policy.
	2.8 Awareness of HIV and AIDS is demonstrated in line with workplace requirements.
	2.9 Safety consciousness is demonstrated in the workplace based on organization safety policy.
	2.10 *Emerging issues* are dealt with in accordance with organization policy.
3. Demonstrate workplace learning	3.1 Personal training needs are identified and assessed in line with the requirements of the job
	3.2 Own learning is managed as per workplace policy.
	3.3 Learning opportunities are sought and allocated based on job requirement and in line with organization policy.
	3.4 Contribution to the learning community at the workplace is carried out.
	3.5 *Range of media for learning* are identified as per the training need
	3.6 Application of learning is demonstrated in both technical and non-technical aspects based on requirements of the job
	3.7 Enthusiasm for ongoing learning is demonstrated
	3.8 Time and effort is invested in learning new skills-based job requirements
	3.9 Willingness to learn in different context is demonstrated based on available learning opportunities arising in the workplace.
	3.10 Opportunities for performance improvement are identified proactively in area of work.

		3.11 Awareness of personal role in workplace *innovation* is demonstrated.
4. Demonstrate workplace ethics		4.1 Policies and guidelines are observed as per the workplace requirements
		4.2 Self-worth and profession is exercised in line with personal goals and organizational policies
		4.3 Code of conduct is observed as per the workplace requirements
		4.4 Personal and professional integrity is demonstrated as per the personal goals
		4.5 Commitment to jurisdictional laws is demonstrated as per the workplace requirements

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Range	Variable
Drug and substance abuse includes but not limited to:	Commonly abused • Alcohol • Tobacco • Miraa • Over-the-counter drugs • Cocaine • Bhang • Glue
Feedback includes but not limited to:	• Verbal • Written • Informal • Formal
Team includes but not limited to:	• Small work group • Staff in a section/department • Inter-agency group

Personal objectives include but not limited to:	• Long term • Short term • Broad • Specific
Innovation include but not limited to:	• New ideas • Original ideas • Different ideas • Methods/procedures • Processes • New tools
Emerging issues include but not limited to:	• Terrorism • Social media • National cohesion • Open offices
Range of media for learning include but not limited to:	• Mentoring • peer support and networking • IT and courses

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit of competency.

Required Skills
The individual needs to demonstrate the following skills:
- Personal hygiene practices
- Intra and Interpersonal skills
- Communication skills
- Knowledge management
- Interpersonal skills
- Critical thinking skills
- Observation skills
- Organizing skills
- Negotiation skills
- Monitoring skills
- Evaluation skills
- Record keeping skills
- Problem solving skills

- Decision Making skills
- Resource utilization skills
- Resource mobilization skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Work values and ethics
- Company policies
- Company operations, procedures and standards
- Occupational Health and safety procedures
- Fundamental rights at work
- Personal hygiene practices
- Workplace communication
- Concept of time
- Time management
- Decision making
- Types of resources
- Work planning
- Resources and allocating resources
- Organizing work
- Monitoring and evaluation
- Record keeping
- Workplace problems and how to deal with them
- Negotiation
- Assertiveness
- Team work
- Gender mainstreaming
- HIV and AIDS
- Drug and substance abuse
- Leadership
- Safe work habits
- Professional growth and development
- Technology in the workplace
- Learning
- Creativity
- Innovation

- Emerging issues
  - Social media
  - Terrorism
  - National cohesion

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted self-management 1.2 Demonstrated critical safe work habits 1.3 Demonstrated workplace learning 1.4 Demonstrated workplace ethics
2. Resource Implications	The following resources should be provided: 2.1 Case studies/scenarios
3. Methods of Assessment	Competency in this unit may be assessed through: • Oral Interview • Observation • Third Party Reports • Written
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE ENVIRONMENTAL LITERACY

UNIT CODE: AGR/OS/EXT/BC/06/4

UNIT DESCRIPTION

This unit specifies the competencies required to follow procedures for environmental hazard control, follow procedures for environmental pollution control, comply with workplace sustainable resource use and evaluate current practices in relation to resource usage.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range***
1. Control environmental hazard	1.1 ***Storage methods*** for environmentally hazardous materials are strictly followed according to environmental regulations and OSHS. 1.2 ***Disposal methods*** of hazardous wastes are followed at all times according to environmental regulations and OSHS. 1.3 ***PPE*** is used according to OSHS.
2. Control environmental Pollution control	2.1 Environmental pollution ***control measures*** are compiled following standard protocol. 2.2 Procedures for solid waste management are observed according Environmental Management and Coordination Act 1999 2.3 Methods for minimizing ***noise pollution*** complied following environmental regulations.
3. Demonstrate sustainable resource use	3.1 Methods for minimizing wastage are complied with. 3.2 Waste management procedures are employed following principles of 3Rs (Reduce, Reuse, Recycle) 3.3 Methods for economizing or reducing resource consumption are practiced.

4. Evaluate current practices in relation to resource usage	4.1 Information on resource efficiency *systems and procedures* are collected and provided to the work group where appropriate.
	4.2 Current resource usage is measured and recorded by members of the work group.
	4.3 Current purchasing strategies are analyzed and recorded according to industry procedures.
	4.4 Current work processes to access information and data is analyzed following enterprise protocol.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range (may include but are not limited to:)
PPE	• Masks • Gloves • Goggles • Safety hat • Overall • Hearing protector • Safety boots
Environmental pollution control Measures	• Methods for minimizing or stopping spread and ingestion of airborne particles • Methods for minimizing or stopping spread and inhaling gases and fumes • Methods for minimizing or stopping spread and ingestion of liquid wastes
Waste management Procedures	• Sorting • Storing of items • Recycling of items • Disposal of items • Handling • Transport
Resources	• Electric • Water • Fuel • Telecommunications

	• Supplies
	• Materials
Workplace environmental hazards	• Biological hazards
	• Chemical and dust hazards
	• Physical hazards
Organizational systems and procedures	• Supply chain, procurement and purchasing
	• Quality assurance
	• Making recommendations and seeking approvals

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Following storage methods of environmentally hazardous materials
- Following disposal methods of hazardous wastes
- Using PPE
- Practicing OSHS
- Complying environmental pollution control
- Observing solid waste management
- Complying methods of minimizing noise Pollution
- Complying methods of minimizing wastage
- Employing waste management procedures
- Economizing resource consumption
- Listing of resources used
- Measuring current usage of resources
- Identifying and reporting workplace environmental hazards
- Conveying all environmental issues
- Following environmental regulations
- Identifying environmental regulations
- Assessing procedures for assessing compliance
- Collecting information on environmental and resource efficiency systems and procedures, and Providing information to the work group
- Measuring and recording current resource usage
- Analysing and recording current purchasing strategies.

- Analysing current work processes to access information and data and Assisting identifying areas for improvement

Required Knowledge

The individual needs to demonstrate knowledge of:
- Storage methods of environmentally hazardous materials
- Disposal methods of hazardous wastes
- Usage of PPE Environmental regulations
- OSHS
- Types of pollution
- Environmental pollution control measures
- Different solid wastes
- Solid waste management
- Different noise pollution
- Methods of minimizing noise pollution
- Solid Waste Act
- Methods of minimizing wastage
- Waste management procedure
- Economizing of resource consumption
- Principle of 3Rs
- Types of resources
- Techniques in measuring current usage of resources
- Calculating current usage of resources
- Types of workplace environmental hazards
- Environmental regulations
- Environmental regulations applying to the enterprise.
- Procedures for assessing compliance with environmental regulations.
- Collection of information on environmental and resource efficiency systems and procedures,
- Measurement and recording of current resource usage
- Analysis and recording of current purchasing strategies.
- Analysis current work processes to access information and data Analysis of data and information
- Identification of areas for improvement

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1.	Critical Aspects of Competency	Assessment requires evidence that the candidate:
		1.1 Controlled environmental hazard
		1.2 Controlled environmental pollution
		1.3 Demonstrated sustainable resource use
		1.4 Evaluated current practices in relation to resource usage
2.	Resource Implications	The following resources should be provided:
		2.1 Workplace with storage facilities
		2.2 Tools, materials and equipment relevant to the tasks (ex. Cleaning tools, cleaning materials, trash bags, etc.)
		2.3 PPE
		2.4 Manuals and references
		2.5 Legislation, policies, procedures, protocols and local ordinances relating to environmental protection
		2.6 Case studies/scenarios relating to environmental Protection
3	Methods of Assessment	Competency in this unit may be assessed through:
		3.1 Demonstration
		3.2 Oral questioning
		3.3 Written examination
		3.4 Third Party Reports
		3.5 Portfolio (citations/awards from GOs and NGOs, certificate of training – local and abroad)
		3.6 Simulations and role-plays
4	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these as well as in work placement (internship). Off the job assessment must be undertaken in a closely simulated workplace environment.
5	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE OCCUPATIONAL SAFETY AND HEALTH PRACTICES

UNIT CODE: AGR/OS/EXT/BC/07/4

UNIT DESCRIPTION

This unit specifies the competencies required to practice safety and health, and comply with OSH requirements relevant to work

ELEMENTS AND PERFORMANCE CRITERIA¸

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. **Bold and italicized terms are elaborated in the Range**
1. Observe workplace procedures for hazards and risk prevention	1.1 Arrangement of work area and items in accordance with Company housekeeping procedures is followed 1.2 Work standards and procedures are followed 1.3 **Prevention and control measures**, including use of **safety gears/PPE** are applied 1.4 Standards and procedures for **incidents and emergencies** are studied and applied, as needed
2. Participate in arrangements for workplace safety and health maintenance	2.1 Orientations on **OSH requirements/regulations** of tasks are participated 2.2 Feedback on health, safety, and security concerns are provided to appropriate personnel as required in a sufficiently detailed manner. 2.3 Workplace procedures for reporting hazards, incidents, injuries and sickness are practiced 2.4 OSH requirements/ regulations and workplace safety and hazard control procedures are reviewed and compliance reported to appropriate personnel, as needed 2.5 Needed **OSH-related trainings** are identified and proposed to appropriate personnel

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	1. **Range** (may include but are not limited to:)
Prevention and control measures	- Eliminate the hazard (i.e., get rid of the dangerous machine - Isolate the hazard (i.e. keep the machine in a closed room and operate it remotely; barricade an unsafe area off) - Substitute the hazard with a safer alternative (i.e., replace the machine with a safer one) - Use administrative controls to reduce the risk (i.e. give trainings on how to use equipment safely; OSH-related topics, issue warning signages, rotation/shifting work schedule) - Use engineering controls to reduce the risk (i.e. use safety guards to machine) - Use personal protective equipment - Safety, Health and Work Environment Evaluation - Periodic and/or special medical examinations of workers
Safety gears /PPE (Personal Protective Equipment)	- Arm/Hand guard, gloves - Eye protection (goggles, shield) - Hearing protection (ear muffs, ear plugs) - Hair Net/cap/bonnet - Hard hat - Face protection (mask, shield) - Apron/Gown/coverall/jump suit - Anti-static suits - High-visibility reflective vest

Incidents and emergencies	- Chemical spills - Equipment/vehicle accidents - Explosion - Fire - Gas leak - Injury to personnel - Structural collapse - Toxic and/or flammable vapours emission.
OSH requirements / regulations	- Building code - Permit to Operate
OSH-related trainings	- Safety Orientations relevant to tasks - Safe and Correct Operation of Tools and Equipment - Health Orientations/trainings (Healthy Lifestyle, Prevention of drug/alcohol dependence, violence in the workplace, work-stress) - Prevention and Control of OSH Hazards in the workplace - Chemical Handling - Safety Trainings (Fire Safety, Construction Safety, Confined Space) - Prevention and Control of Work-related Injuries and Illness - Basic First-aid Trainings - Emergency Response Trainings - Trainings on use of fire-extinguisher

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Communication Skills
- Knowledge management
- Collaborating skills
- Interpersonal Skills
- Troubleshooting skills

- Critical thinking Skills
- Observation Skills

Required Knowledge

The individual needs to demonstrate knowledge of:
- General OSH principles and legislations
- Principles of good housekeeping (5S)
- Company/workplace policies/ guidelines
- Standards and safety requirements of work process and procedures
- Standard Workplace emergency plan and procedures
- Safety and health requirements of tasks
- Workplace guidelines on providing feedback on OSH and security concerns
- OSH regulations
- Hazard control procedures
- OSH trainings relevant to work

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Follows work and housekeeping procedures, and complies with its requirements
	1.2 Follows work standards and procedures
	1.3 Applies OSH preventive and control measures, including emergency plan, standards and procedures
	1.4 Participates in orientations on OSH requirements of tasks
	1.5 Provides feedback on health, safety, and security concerns in a sufficiently detailed manner.
	1.6 Practices workplace procedures for reporting hazards, incidents, injuries and sickness
	1.7 Reviews and reports compliance to workplace OSH regulations and hazard control procedures
	1.8 Identifies and proposes OSH trainings relevant to work
2. Resource Implications	The following resources should be provided:
	2.1 Facilities, materials tools and equipment necessary for the activity
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Observation/Demonstration with oral questioning
	3.2 Third party report
	3.3 Written exam
4. Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

CORE UNITS OF COMPETENCY

ESTABLISH AGRICULTURAL CROPS

UNIT CODE: AGR/OS/EXT/CR/01/4

UNIT DESCRIPTION

This unit describes the competencies required by a trainee in order to competently establish a crop. It involves preparing to establish a crop, establishing the crop and completing crop establishment as well as carrying out waste management and documentation.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare the land	1.1 ***Tools ,equipment , materials and supplies*** are identified and gathered based on the requirements of the job 1.2 Soil for analysis is sampled as per appropriate ***sampling method*** 1.3 Soil erosion is controlled based on topography, soil type and level of degradation 1.4 ***Crop*** choice is made according to ***farm plan*** and soil analysis report. 1.5 ***Land preparations*** are determined and selected according to the condition of the land and the crop type. 1.6 ***Growing structure*** is prepared in accordance with the crop production manual 1.7 ***Personal Protective Equipment (PPE)*** is worn as per the workplace policy 1.8 Land is prepared according to condition of the land and type of selected operation
2. Establish the crop	2.1 ***Tools ,equipment and supplies*** are identified and gathered based on the requirements of the workplace

	2.2 The time of planting is determined based on ecological zone
	2.3 The *planting materials* are identified and gathered according to the type of crop
	2.4 The crop is planted according to crop type, and *planting method*
	2.5 Fertilizer is applied according to soil analysis report
3. Manage the crop	3.1 Gapping and/or thinning is done depending on germination pattern
	3.2 Weed and pest control is done using appropriate *control method* according to the crop type
	3.3 *Soil and water conservation measures* are applied according to the topography of the land and the type of soil
	3.4 Established crops are irrigated according to the crop water requirements and appropriate irrigation method
4. Complete crop establishment	4.1 Crop establishment activities are documented in the appropriate *farm records.*
	4.2 Unused materials are stored as per manufacturer's instructions
	4.3 Waste and recyclable materials are handled according to *environment management regulations*

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	**RANGE (**May include but are not limited to :)

Crop	- Food crops: - Beans - Maize - Potatoes - Wheat - Horticultural crops: - Cabbages - Carrots - Flowers - Kales - Onions - Tomatoes - Industrial crops: - Avocado - Coffee - Cotton - Macadamia - Tea - Livestock fodder
Farm plan	- Farm layout - Rotation program/plan - Crop protection program/plan - Cropping seasons
Land preparations	- Site clearing - Zero tillage - Primary tillage - Secondary tillage - Minimum tillage - Tertiary operations

Tools, equipment and machinery	• Land clearing tools/equipment/machinery
	   - Axes
	   - Mower
	   - Panga
	   - Rake
	   - Rotavator
	   - Slasher
	   - Tractor
	   - Wheel barrow
	• Tillage tools/equipment/machinery
	   - Disc plough
	   - Fork jembe
	   - Harrows
	   - Hoe
	   - Mouldboard plough
	   - Ridgers
	   - Tractor
	• Soil sampling tools/equipment
	   - Buckets
	   - Soil auger
	   - Spade

Soil sampling method	• Random • Stratified • Systematic
Growing structure	• Green houses • Nursery Structures • Seedling Trays
Personal protective equipment	• Gumboots • Overall • Gloves • Breathing mask • Goggles • Cap

Planting materials	• Seed • Cuttings • Tubers • Vines • Corms
Planting method	• Broadcasting • Row planting • Dribbling • Under sowing • Over sowing
Planting manuals	• Seed production manuals • Plant breeders' manuals • Researchers' recommendations • Tree planting manuals
Control method	• Chemical • Mechanical • Cultural • Biological
Soil and water conservation measures	• Contour farming • Terracing • Filter strips • Mulching • Cover cropping • Drip irrigation • Gabions
Farm records	• Farm diary • Journals • Ledgers
Environment management regulations	• Environmental Management and Coordination Act – EMCA • National environmental management authority regulations • Standard operation procedures for the organization

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Farm machines calibration
- Fertilizer and agrochemical handling
- Tools and equipment handling
- Tilling
- Measuring
- Leveling
- Gapping
- Pruning
- Spraying
- Pests, diseases and nutrients deficiency scouting
- Soil sampling
- Operation of farm machinery
- Observation
- Planting
- Recording

Required Knowledge

The individual needs to demonstrate knowledge of:

- Farm power
- Types and uses of farm implements and machinery
- Basic tools and equipment used in crop production
- Soil fertility management
- General crop production technologies
- Basic Soil sampling and testing
- Soil conservation
- Phyto-sanitary requirements
- Good Agricultural Practices
- Occupational safety and health
- Tillage types
- Types of planting materials
- Irrigation methods
- Soil and water conservation methods
- Maintenance of farm machines
- Farm Records

- Agro-ecological zones
- Weeds and weed control
- Crop pests and pest control.

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1.	Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Prepared land to the required tilth 1.2 Used materials, tools and equipment appropriately 1.3 Observed occupational safety measures keenly 1.4 Efficiently used the farm inputs 1.5 Applied soil and water conservation measures keenly 1.6 Observed laid down environmental workplace policy keenly 1.7 Established crop correctly 1.8 Documented crop establishment activities well
2.	Resource Implications	The following resources must be provided: 2.1 Assessment location- functional farm with various established crops at different growing stages, farm implements and equipment. 2.2 Personal protective equipment 2.3 human resources
3.	Methods of Assessment	Competency in this unit may be assessed through: 3.1 Observation 3.2 Oral interview 3.3 Written exam 3.4 Third party report
4.	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

PERFORM CROP PROTECTION

UNIT CODE: AGR/OS/EXT/CR/02/4

UNIT DESCRIPTION

This unit specifies the competencies required to perform crop protection. It involves preparing for disease and pest control, controlling diseases and pest, waste management and documentation.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare for disease and pest control.	1.1 ***Personal protective equipment*** is worn as per the Occupational Health and Safety policy 1.2 ***Disease*** control area/plot is identified according to the ***farm plan.*** 1.3 ***Pest*** control area/plot is identified according to the farm plan 1.4 Scouting for pest is done based on crop scouting manual 1.5 The affected areas are mapped out according to type of pest 1.6 Scouting for disease is done based on crop scouting manual 1.7 The infected areas are mapped according to the type of disease 1.8 Pest control ***method*** is chosen based on the type of pest identified 1.9 Disease control method is chosen based on the disease identified 1.10 ***Materials***, ***tools and equipment*** are identified and verified based on the method chosen.

2.	Control pest and disease	2.1 Pest control is carried out based on the method chosen
		2.2 Disease control is carried out based on the method chosen
3.	Complete pest and disease control	3.1 Waste and recyclable materials are collected and sorted according to workplace policy
		3.2 The unused materials are stored according to the manufacturer's instructions
		3.3 The tools and equipment are cleaned and stored according to manufacturer's manual.
		3.4 Crop protection activities are documented in the journal as per the good agricultural practices manuals (FAO GAP, MOALF GAP)

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE (May include but are not limited to:)
Diseases	- Fungal - Bacterial - Viral - Physiological injuries
Farm plan	- Crop programme - Planting schedule - Type of crop planted - Rotational programme/plan - Enterprise location.
Pest	- Insect - Birds - Mammals - Nematodes
Method	Disease and Pest control - Chemical - Biological - Physical - Cultural - Integrated

Materials, tools and equipment	• Materials
	  - Pegs
	  - Flag
	  - Labels
	  - Water
	  - Chemicals
	  - Biological agents
	  - Cleaning agents
	• Tools and equipment
	  - Sprayers
	  - Mixing tanks
	  - Measuring cylinders

Personal protective equipment	May include but are not limited to: • Gumboots • Overall • Gloves • Breathing mask • Goggles • Caps
Environmental protection regulations	• Environmental Management and Coordination Act – EMCA • National environmental management authority regulations • Food and Agriculture Organisation

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit of competency.

Required Skills
The individual needs to demonstrate the following skills:
- Disease and pest scouting
- Tools and equipment handling
- Measurement
- Recording
- Use of personal protective equipment
- Waste handling
- Agro-chemical handling

Required Knowledge

The individual needs to demonstrate knowledge of:

- Disease and pest symptoms and their control
- Environmental protection guidelines
- Basic first aid
- Maintenance of tool and equipment
- Occupational Safety and health
- Good Agricultural practices.
- Sanitary and phyto-sanitary measures
- Safe use of agro-chemicals

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Thoroughly Scouted and mapped out areas infected with pests and diseases
	1.2 Observed occupational safety and health measures appropriately
	1.3 Controlled pest and disease effectively
	1.4 Stored unused materials correctly
	1.5 Observed laid down environmental workplace policy appropriately
	1.6 Documented crop protection activities correctly
	1.7 Cleaned tools and equipment properly
	1.8 Used crop protection tools and materials appropriately
2. Resource Implications	The following resources must be provided:
	2.1 Assessment location- functional farm with land, crops, tools, equipment and materials for crop protection
	2.2 Personal protective equipment
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Observation
	3.2 Oral interview
	3.3 Written exam
	3.4 Third party report

4.	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

HARVEST THE CROP

UNIT CODE: AGR/OS/EXT/CR/03/4

UNIT DESCRIPTION

This unit specifies the competencies required to harvest a crop. It includes preparing to harvest, harvesting and post-harvesting operations, and evaluation of crop produce, forage conservation, waste management and documentation.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare to harvest the crop	1.1 Maturity of the crop is determined based on the ***maturity indices*** of the crop 1.2 ***Tools, equipment, materials and machines*** are assembled according to the crop 1.3 Store place is prepared according to ***food safety practices.***
2. Harvest the crop	2.1 ***Harvesting*** is done timely according to the crop type. 2.2 Harvested produce is packed well based on the crop type 2.3 The packed produce is assembled at the collection point or the store according to the crop type and work policy
3. Carry out post-harvesting operations	3.1 Produce is cleaned according to GAP. 3.2 Sorting of produce is carried out depending on the crop type. 3.3 Grading is done according to the crop's ***grading criteria***. 3.4 Produce is weighed and packaged according to the type of crop

		3.5	Produce is treated for preservation based on GAP
		3.6	Produce is correctly stored depending on the type of the produce and stores management procedure.
4.	Evaluate crop produce	4.1	The quality of the crop produce is evaluated according to the *crop quality parameters*
		4.2	The quantity of the crop produce is evaluated based on the crop yield parameters
5.	Conserve forage	5.1	**Forage conservation** *method* is chosen according to the fodder available and farm policy
		5.2	Materials are prepared for preservation depending on the method chosen
		5.3	Tools/equipment/machines are identified according to method chosen
		5.4	The forage is properly preserved depending on the method chosen
6.	Complete crop harvesting	6.1	Waste and recyclable materials are collected and sorted according to *workplace policy*
		6.2	Tools are cleaned according to the manufacturer's instructions
		6.3	Equipment and machines are maintained according to workplace procedures
		6.4	Tools/equipment/machines are stored according to the manufacturer's manual and workplace policy
		6.5	Proper records of the harvesting activities are kept as per the work place policy.
		6.6	Unused materials are stored as per the manufacturer's instructions and workplace policy.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE (May include but are not limited to :)
Tool, equipment, materials and machines	• Tools: - Fork - Jembe - Hoe - Knives - Panga - Sickle - Wheelbarrow • Equipment - Weighing Balances • Materials: - Baskets - Labeled Crates/cartons - Sacks/bags - Twines - Stationeries - Litter bins - Grading tables • Machinery: - Baler - Combine harvesters - Forage harvester - Mowers - Potato harvesters - Tractor - Air conditioned vans
Maturity indices	• Change of colour • Size of the produce • Hardness of the fruit or tuber • Moisture content

Food safety practice	• Dampness • Aeration • Contamination • Physical injuries to the produce
Harvesting	• Picking • Plucking • Digging out • Threshing • Mowing • Combine harvesting • Cutting
Good Agricultural Practices (GAP)	• Correct tools • Clean • Correct use of tools and equipment • Winnowing • Seed dressing • Chemical treatment • Safely measures applied
Grading criteria	• Size of the produce • Colour • Type of the produce • Shape • Breakages
Crop quality parameters	• Colour • Taste • Size • Texture • Shape • Moisture content • Presence of pests and disease causing organisms
Forage conservation method	• Silage making • Hay making • Standing hay

Workplace policy	• Stores management policy
	• Produce handling and transportation
	• Harvesting waste management policy
	• Produce sorting and grading policy

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Materials, tools, equipment and machines Handling
- Measurement
- Perceptual (visual, tactile)
- Post-harvest crop handling
- Grading and sorting
- Recording
- Tools, equipment and machines servicing and maintenance
- Use of personal protective equipment

Required Knowledge

The individual needs to demonstrate knowledge of:

- Basic machine operations
- Tools, equipment and materials used in harvesting
- Crop maturity indices
- Post-harvest crop pests and diseases and their management
- Harvesting methods
- Health, hygiene, safety and environment
- Post-harvest crop handling practices
- Stores management
- Farm Records

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1.	Critical Aspects of Competency	Assessment requires evidence that the candidate:
		1.1 Gathered materials/tools/equipment/machines correctly
		1.2 Observed laid down environmental workplace policy well
		1.3 Keenly Observed safety measures
		1.4 Timely determined the crop harvesting time and stage
		1.5 Packed harvested crop properly
		1.6 Stored harvested produce properly
		1.7 Preserved forage correctly
		1.8 Maintained tools, equipment and machines correctly
		1.9 Handled crop residues well
		1.10 Handled wastes safely
		1.11 Documented crop harvesting activities correctly
2.	Resource Implications	The following resources must be provided:
		2.1 Assessment location- functional farm with crop that are ready for harvesting, harvesting tools, equipment and machineries as well as stores for the produce
		2.2 Personal protective equipment
		2.3 packing materials,
3.	Methods of Assessment	Competency in this unit may be assessed through:
		3.1 Observation
		3.2 Oral interview
		3.3 Written exam
		3.4 Third party report
4.	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

MAINTAIN LIVESTOCK HEALTH

UNIT CODE: AGR/OS/EXT/CR/04/4

UNIT DESCRIPTION

This unit specifies the competencies required to maintain livestock health. It involves prepare to maintain livestock health, maintain livestock house structures, housing the livestock, carrying out routine management practices, controlling livestock disease and parasites, and waste management and documentation.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare to maintain livestock health	1.1 ***Personal protective equipment*** is worn as per occupation health and safety standard as well as the job requirements. 1.2 Appropriate ***livestock housing structures*** are identified according to ***species,*** type ***and class of the livestock*** and Livestock housing design 1.3 ***Structure maintenance materials*** are identified and gathered according to livestock housing plan and job requirement. 1.4 ***Structure maintenance Tools, equipment and machines*** are identified and gathered according to the job requirement. 1.5 ***Routine management practices*** are identified based on LPM, livestock species and class. 1.6 ***Diseases and parasites*** are identified according to the type of livestock 1.7 ***Health Conditions*** are identified according to effects on production and workplace procedures.

		1.8 *Parasite control method* is adopted based on the type of parasite and level of infestation.
		1.9 Method of disease control is identified and adopted depending on the disease
		1.10 Parasite control Materials/tools/equipment are identified and gathered according to the mode of control
2.	Maintain livestock house structures	2.1 Areas requiring maintenance are identified based on the need and condition of the structure
		2.2 Structures are maintained according to the need for repairs and maintenance
		2.3 Fittings are maintained based on the damages caused to them
3.	House the livestock	3.1 Farm animals are housed based on the livestock production manual (LPM)
		3.2 The structure capacity is adhered to according to animal species, LPM and livestock welfare regulations.
		3.3 Livestock structures are cleaned as per the LPM
4.	Carry out routine management practices	4.1 Routine management practices are performed based on animal type & category and LPM
		4.2 Tools and equipment used are cleaned and stored as per manufacturer's instructions and workplace policy
5.	Control livestock diseases	5.1 Sick animals are identified and isolated based on the workplace policy
		5.2 A template on the livestock health is filled according to workplace policy and LMP
		5.3 A qualified Veterinary officer is engaged to diagnose the diseases and treat the animal accurately according to the symptoms
		5.4 *Notifiable diseases* are reported to the authorities concerned based on *LPM*
		5.5 Close monitoring of the livestock on treatment is carried out according to veterinary officers' advice
6.	Control livestock parasites	6.1 Parasite identification is done according to the livestock production manuals
		6.2 Appropriate parasite *management method* is followed based on the parasite identified

7. Manage health conditions	7.1 Livestock with health condition are identified as per LPM
	7.2 Livestock health condition template is filled as per LPM
	7.3 Report the identified case of livestock health condition according to workplace policy.
	7.4 Instruction on management of the adverse health conditions are followed according to workplace policy
8. Complete the maintenance of livestock health	8.1 Animal droppings are collected and converted into farmyard manure according to work place policy.
	8.2 Reusable equipment and tools are cleaned, sterilized and stored according to the workplace policy
	8.3 Waste and non-recyclable materials are collected and sorted according to the workplace policy
	8.4 Livestock health maintenance activities are recorded according to the farm routine practices.
	8.5 Unused materials are stored according to manufacturer's instructions.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE (May include but are not limited to :)
Livestock housing designs	Types of animal house - Bee hives - Crushes - Rabbit pens - Fences - Goat/ sheep sheds - Outside pens - Poultry house/ cages - Zero grazing unit • Structural plan layout of animal structures

Structure maintenance materials	- Roofing materials - Bricks - Timber - Blocks - Nails - Cement - Sand - Water - Wires
Structure maintenance Tools, equipment and machines	- Wooden pegs - Measuring tape - Hammer - Sisal twine - Masonry tools - Carpentry tools - Plumbing tools - Hoe - Jembe - Panga - Slashers - Rakes - Wheel barrow
Livestock house structures	- Bee hives - Crushes - Dogs kennels - Rabbit pens - Fences - Goat/ sheep sheds - Outside pens - Poultry house/ cages - Zero grazing unit

Species of the livestock	
	• Pigs
	• Cattle
	• Bees
	• Sheep
	• Fish
	• Dogs and pets
	• Emerging livestock
	• Equines
	• Goats
Class of livestock	• Young
	• Old
	• Gestating
	• Lactating
	• Laying
	• Brooding
Personal protective equipment	• Gumboots
	• Overall
	• Gloves
	• Breathing mask
	• Goggles
	• Cap
Routine management practices	• Shearing
	• De-beaking
	• Foot path replenishment
	• Cleaning of feeding and watering troughs
	• Turning of litter
	• Changing beddings
	• Cleaning sheds/ houses
	• Disinfecting livestock houses and brooders
	• Dung removal from the livestock houses
	• Livestock weighing for growth monitoring
	• Parasite control practices
	• Grooming
	• Hair clipping

Diseases	• Viral • Fungal • Bacterial • Protozoan • Microplasmal
Health conditions	• Fractures • Snake and spider bites • Bee stings • Dog bites • Poisoning • External Soft tissue injuries • Metabolic disorders

Parasites	• External:
	  - Flea
	  - Lice
	  - Manges
	  - Mite
	  - Tick
	  - Tsetse fly
	  - Flies
	• Internal:
	  - Fluke worms
	  - Round worm
	  - Tape worm

Parasite control method	• Internal parasite control: - Deworming - Rotational grazing - Observing feed and fodder hygiene - Observing field hygiene • External parasite control - Spraying - Vaccination - Dusting - Hair trimming - Pasture field hygiene - Proper house conditions - Dipping - Grooming
Method of disease control	• Intramuscular injections by a qualified veterinary officer • Pasture field hygiene • Eradicating vectors and predisposing factors • Spraying • Proper and timely vaccination • Livestock movement control • Sanitation and hygiene
Parasite control materials, tools and equipment	• Bolus gun • Sprayer • Water • Slashers • Rakes, • Wheel barrow • Shovels • Buckets • Measuring cylinders • Livestock restrainers • Foot baths • Sanitizations agents • Acaricides • Dewormers

Notifiable diseases	- Foot and mouth - Anthrax - Swine fever
Livestock production manual-LPM	- Feeding - Vaccination - Routine management practices: - Castration - De-beaking - Dehorning - Identification - Teat clipping
Environment management regulations	- Environmental Management and Coordination Act – EMCA - National environmental management authority regulations - OHS

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Animal handling
- Communication
- Observation
- Recording
- Measurement
- Basic numeracy
- Tools and equipment handling
- Observation
- Perceptual (auditory, visual, smell, tactile)

Required Knowledge

The individual needs to demonstrate knowledge of:

- Animal behaviour
- Types of tools and equipment required in livestock house structures construction
- Materials for constructing livestock house structures

- Livestock production systems
- Livestock house structures
- Livestock health conditions
- Livestock parasites
- Animal physiology
- Disease and parasite control methods
- Livestock Welfare
- Environmental health and safety
- Livestock Hygiene
- Occupational safety and health
- Waste management

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	1.1 Assessment requires evidence that the candidate:
	1.2 Gathered structure maintenance materials, tools and equipment correctly
	1.3 Used materials and resources efficiently
	1.4 Maintained livestock structures appropriately
	1.5 Implemented vaccination and parasite control programmes accordingly
	1.6 Observed laid down environmental workplace policy keenly
	1.7 Observed safety measures keenly
	1.8 Applied appropriate disease and parasite control methods correctly
	1.9 Followed instructions on management of adverse health conditions of the livestock keenly
	1.10 Stored unused materials, cleaned tools and equipment correctly
	1.11 filled the livestock health care templates well
	1.12 Evaluated health care effectiveness
	1.13 Observed livestock welfare practices well

2.	Resource Implications	The following resources must be provided:
		2.1 Assessment location- functional farm with various livestock species, livestock structures, Basic construction tools and equipment, Tools, equipment and materials for pest control
		2.2 Farm plan
		2.3 Parasite control plans
		2.4 Environmental management policy
		2.5 Personal protective equipment
3.	Methods of Assessment	Competency in this unit may be assessed through:
		3.1 Observation
		3.2 Oral interview
		3.3 Written exam
		3.4 Third party report
4.	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

FEED THE LIVESTOCK

UNIT CODE: AGR/OS/EXT/CR/05/4

UNIT DESCRIPTION

This unit specifies the competencies required to feed the livestock. It involves preparing to feed the livestock, feeding the livestock, waste management and documentation.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare to feed the livestock	1.1 Livestock are grouped according to their feeding requirements and farm goals 1.2 ***Tools, equipment and materials*** are gathered based on ***livestock production manual (LPM)*** 1.3 ***Feedstuff*** is gathered according to LPM and availability 1.4 Feedstuff is sampled as per laid down procedures 1.5 Rationing method is chosen based on LPM 1.6 Correct mixing of the ration is done based on the feed analysis report 1.7 Appropriate feeding and watering ***equipment*** are correctly identified and positioned based on the type and category of livestock and LPM
2. Feed the livestock	2.1 The correct amount of feed is measured based on the feeding standard chart and feed requirements 2.2 Appropriate distribution of feed is carried out as per the farm feeding programme. 2.3 The ***livestock*** are watered according to LPM
3. Complete provision of livestock feeds	3.1 Livestock weight changes are taken according to the farm goals

	3.2 Waste and recyclable materials are collected and sorted according to *workplace policy*
	3.3 Livestock feeding templates are filled according to the LPM
	3.4 Feeding and watering tools and materials are cleaned according to the workplace policy
	3.5 The water and feed equipment are maintained as per LPM.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE

Tools/equipment and materials	May include but are not limited to:
	 • Weight band
	 • Scoopers
	 • Shovels
	 • Watering:
	   - Automatic waterers
	   - Bucket
	   - Water trough
	 • Feeding
	   - Feed mixers
	   - Feed trough
	   - Feed mills
	   - Weigh scales
	 • Wheel barrow

Feedstuff	• Concentrates • Roughages • Minerals/vitamins supplements • Feed additives

Livestock	• Poultry
	• Cattle
	• Sheep
	• Goats
	• Fish
	• Emerging livestock
	• Equines
	• Pigs
	• Rabbits
	• Bees
Environmental management regulations	• Environmental Management and Coordination Act – EMCA
	• National environmental management authority regulations
	• OHS

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit of competency.

Required Skills
The individual needs to demonstrate the following skills:
- Animal handling
- Communication
- Measurement Basic numeracy
- Feed mixing
- Observation
- Perceptual (visual, olfactory, tactile)
- Recording
- Tools and equipment handling
- Weighing

Required Knowledge
The individual needs to demonstrate knowledge of:
- Feed quality
- Livestock nutritional requirement
- Factors affecting feed intake

- Environmental health and safety
- Feed hygiene
- Livestock production systems
- Livestock Welfare
- Occupational safety and health
- Tools/materials/equipment required in feeding livestock
- Types of feeds for different livestock species
- Waste management
- Livestock body condition indices

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1.	Critical Aspects of Competency	Assessment requires evidence that the candidate:
		1.1 Observed laid down environmental workplace policy keenly
		1.2 Observed safety measures carefully
		1.3 Grouped livestock well according to their feeding requirements
		1.4 Provided correct amount of feed to the livestock
		1.5 Used materials and resources efficiently
		1.6 Correctly Observed hygiene during animal feeding
		1.7 Observed livestock welfare practices well
		1.8 Stored unused materials, clean tools and equipment well
		1.9 Documented animal feeding activities well
2.	Resource Implications	The following resources must be provided:
		2.1 Assessment location- functional farm with various livestock species and classes, feeds and water sources for various livestock categories
		2.2 Personal protective equipment
		2.3 Feeding standard chart
		2.4 Tools, equipment and materials
3.	Methods of Assessment	Competency in this unit may be assessed through:
		3.1 Observation
		3.2 Oral interview
		3.3 Written exam
		3.4 Third party report
4.	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.

5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

BREED LIVESTOCK

UNIT CODE: AGR/OS/EXT/CR/06/4

UNIT DESCRIPTION

This unit specifies the competencies required to breed livestock. It involves preparing to breed livestock, breeding the livestock, waste management and documentation.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare to breed livestock	1.1 ***Tools, equipment and materials*** are identified and assembled according to livestock breeding plan 1.2 ***Selection method*** is chosen based on the desired characteristics 1.3 Size of the breeding stock is determined depending on resources available 1.4 Breeding ***animals*** are identified and selected based on the selection method chosen 1.5 The ***breeding method*** is identified and selected based on the desired outcome 1.6 Livestock for breeding are prepared according to Livestock Production Manual (LPM)
2. Breed the livestock	2.1 Signs of heat are detected according to the type of animal 2.2 Animals are bred according to the breeding method chosen, type of animal and the breeding objective.
3. Complete animal breeding	3.1 Livestock breeding/ serving template is filled and filed. 3.2 Success of breeding is evaluated according to the objectives 3.3 Waste and recyclable materials are sorted and disposed according to ***workplace policy***

	3.4 Reusable equipment and tools are cleaned, sterilized and stored as per the workplace policy.
	3.5 Livestock breeding activities are documented according to LPM
	3.6 Monitoring of the animal after serving is done to check for any repeat of heat signs or failure of conception according to the LPM.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	**RANGE** (May include but are not limited to :)
Tools equipment and materials and structures	• Personal Protective Equipment • Livestock restraining tools • Water • Stationery • Ram/ Buck harness and crayons • Breeding pens
Selection method	• Mass selection • Progeny • Family • Pedigree • Multiple trait selection
Livestock	• Cattle • Sheep • Poultry • Emerging livestock • Fish • Pig • Rabbits • Bees • Equines • Goats
Breeding method	• Natural • Artificial

Environmental management regulations	- Environmental Management and Coordination Act – EMCA - National environmental management authority regulations - OHS

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Animal handling
- Animal identification
- Tools and equipment handling
- Observation
- Perceptual skills (auditory, visual)
- Recording
- Writing
- Communication

Basic numeracy

Required Knowledge

The individual needs to demonstrate knowledge of:

- Animal anatomy
- Breed characteristics
- Livestock production systems
- Livestock Welfare
- Breeding methods
- Breeding systems
- Culling animal
- Occupational safety and health Factors affecting fertility
- Heat cycle
- Heat signs
- Personal protective equipment
- Livestock welfare
- Reproductive efficiency
- Waste management

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1.	Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Gathered materials tools and equipment appropriately 1.2 Observed laid down environmental workplace policy keenly 1.3 Observed safety measures correctly 1.4 Selected and prepared breeding stock precisely 1.5 Followed the veterinary officers instructions keenly 1.6 Used materials and resources efficiently 1.7 Stored unused materials, clean tools and equipment properly 1.8 Documented animal breeding activities correctly
2.	Resource Implications	The following resources must be provided: 2.1 Assessment location - functional farm with various livestock species, livestock structures, tools, equipment and materials for livestock breeding. 2.2 Personal protective equipment 2.3 Materials, tools and equipment
3.	Methods of Assessment	Competency in this unit may be assessed through: 3.1 Observation 3.2 Oral interview 3.3 Written exam 3.4 Third party report
4.	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

KEEP FARM RECORDS

UNIT CODE: AGR/OS/EXT/CR/07/4

UNIT DESCRIPTION

This unit specifies the competencies required to keep farm record. It involves preparing to keep farm records, keeping farm records, filling, recording and waste management.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active voice)	PERFORMANCE CRITERIA These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1. Prepare to keep farm records.	1.1 Farm ***office equipment*** are assembled according to the workplace policy 1.2 ***Farm record*** template are gathered 1.3 ***Stationeries*** for recording are gathered as farm policy
2. Keep farm record	2.1 Daily activities are recorded in appropriate records as per farm recording procedures 2.2 Filled templates are filed as per filing procedures
3. Complete keeping of farm record keeping	3.1 Filed documents are stored according to the work policy 3.2 Recyclable materials are collected and sorted for recycling as per the work policy 3.3 Unused materials and stationary are stored as per manufacturer's instructions 3.4 Farm administration activities are recorded

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE(May include but are not limited to:)
Farm records	- Ledger - Cash book - Journal - Daily diary
Farm office equipment	- Computer - Desk - Chair - Filing cabinets - Printer - Calculator
Stationery	- Paper - Pens - Files - Cartilage - Eraser - Ruler - Envelops - Stapler - Rubber stamp
Work place policy	- Filing procedures - Receipting procedures - Procurement procedures

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Communication
- Filing
- Organisation
- Perceptual
- Physical endurance

- Recording
- Weighing
- Basic numeracy

Required Knowledge

The individual needs to demonstrate knowledge of:

- Accounting
- Environmental health and safety
- Farm records
- Filing and documentation
- ICT
- Procurement
- Waste management

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Gathered farm office equipment, farm record and stationery correctly
	1.2 Observed laid down environmental workplace policy keenly
	1.3 Recorded all farm activities appropriately
	1.4 Used materials and resources efficiently Filed and stored documents properly
	1.5 Stored unused materials correctly
2. Resource Implications	The following resources must be provided:
	2.1 Assessment location -functional farm with both or either livestock and crop enterprises, workers, , stores, proper documentation policy and organizational structures.
	2.2 Tools, equipment, materials and stationery
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Observation
	3.2 Oral interview
	3.3 Written exam
	3.4 Third party report
4. Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.

5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.