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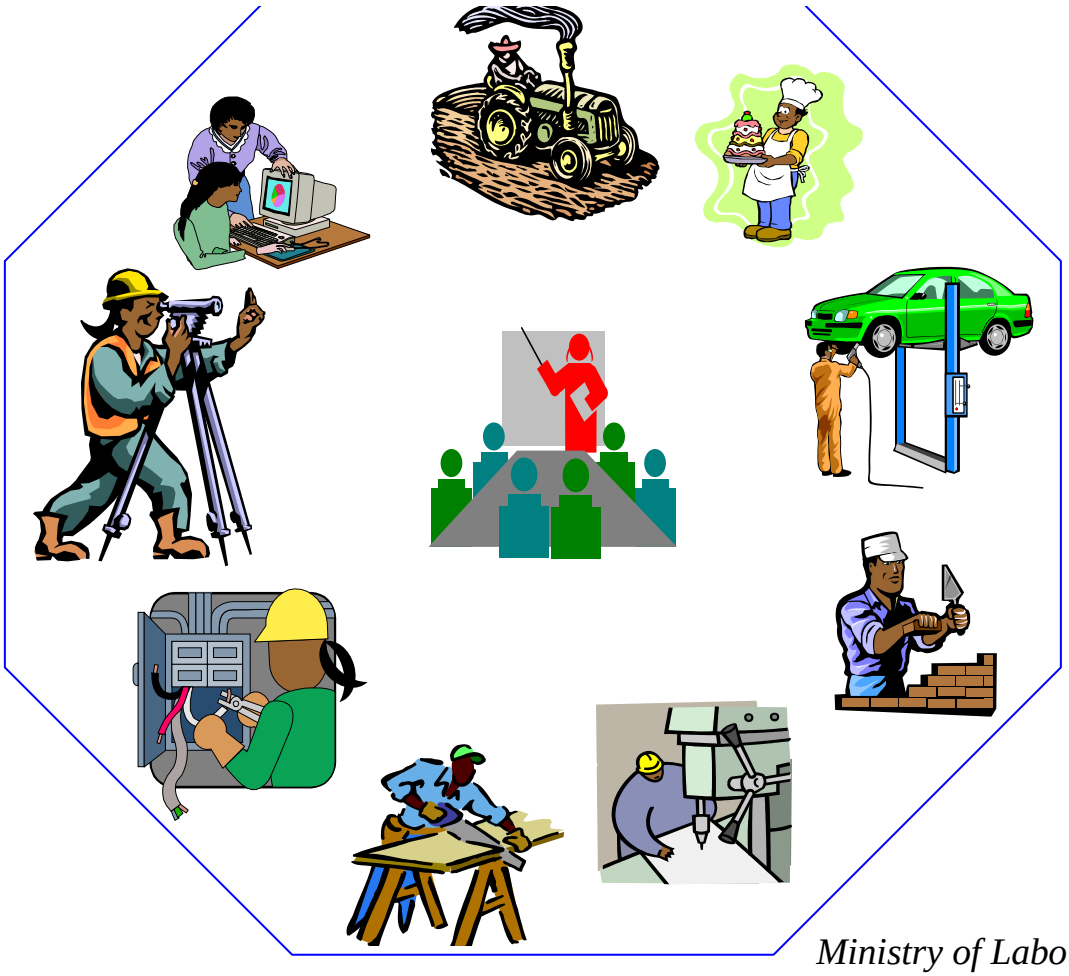
Ministry of Labor and Skills

Federal Democratic Republic of Ethiopia

OCCUPATIONAL STANDARD

ANIMAL PRODUCTION

NTQF Level I-IV



Ministry of Labour and Skill

March 2022

Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopia Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopia Occupational Standard which comprised of Units of Competence.

A Unit Title describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title and NTQF level
- Unit title
- Unit code
- Unit descriptor
- Elements and Performance Criteria
- Variables and Range
- Evidence guide

Together all the parts of a Unit Title guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the occupation with all the key components of a Unit Title

- chart with an overview of all Units of Competence for the respective level including the Unit Codes and the Unit Titles
- contents of each Unit Title(competence standard)
- Occupational map providing the technical and vocational education and training (TVET) providers with information and important requirements to consider when designing training programs for this standard and for the individual, a career path.

Modification History

2.1 Occupational Title:

This occupational Standard is set for Animal production Level I, II, III and IV. This occupational Standard is version3 and revised in December 2021.

2.2. Description of the Occupation

2.2.1 Level Description

Level I

In the previous version (version 2); level I didn't specified for a single occupation and had been entitled as 'Basic Agricultural production and Natural Resource Conservation 'which was customized as 'Animal Production' for the current revised version. Based on the NTQF and the guide lines of the new TVET policy formulated; the exiting occupation is reviewed by accepting, removing, shifting and modifying the name as well as its body. Moreover, the revisitation process again take into consideration the benchmark from Australia, India, Caribbean; to be full and address its intended objective.

Level II

Breadth, depth and complexity of competences would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgment is required in the selection of equipment, services or contingency measures and within known time constraints.

Applications may involve some responsibility for others. Participation in teams including group or team co-ordination may be involved.

Level III

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organizing activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop new criteria and procedures for performing current practices

and provision of some leadership and guidance to others in the application and planning of the skills. Applications involve responsibility for, and limited organization of, others.

2.2.2 Occupant Performance Profile

Animal Production level I

Occupational standard for this level covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Carryout basic husbandry practice for Livestock and Fishery
- Identify Animal Feed Resource and livestock feeding
- Establishment of pasture and preservation of feeds
- Work on Animal Welfare Requirements
- Handle and preserve hide and skin
- Apply Agricultural Extension Service
- Implement Agribusiness Marketing
- Apply Basics of Human Nutrition Practices
- Apply 5S Procedures

Occupant Performance Profile

Animal Production level II

Occupational standard for this level covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Conduct forage development & preservation
- Carryout Husbandry Practice of Ruminants
- Carryout Husbandry Practice of Poultry
- Raise Swine production
- Perform Husbandry Practices of Draft Animals
- Raise fish production
- Cary out Beekeeping Operations
- Perform Sericulture Development
- Conduct Crop Residues Treatment and urea molasses block
- Undertake Quarantine Procedures for livestock farm
- Apply Agricultural Extension service for Rural development
- Prevent and Eliminate MUDA

Occupant Performance Profile

Animal Production levelIII

Occupational standard for thislevel covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Conduct Dairy Cattle Production
- Undertake milk handling and processing
- Perform Apiculture production
- Carryout Camel production
- Conduct Sheep and Goat Production
- Carry out Aquaculture and Fishery Production
- Perform Poultry production
- Undertake livestock fattening operation
- Perform Artificial insemination for livestock
- Design farm stead structure and facilities

Occupant Performance Profile

Level IV

Animal Production levelIV

Occupational standard for this level covers description of the competences (knowledge, skills and attitudes) to perform work activities to standard required at work places expressed as occupant performance profile:

- Develop animal feed plan and conduct ration formulation
- Develop and managed rangeland
- Undertake livestock breeding
- Conduct poultry hatchery activities
- Handle and process animal Products and By-products
- Undertake Integrated Farm Production system
- Facilitate Animal health program
- Collect, manage, analyze and interpret data
- Apply Computer and Mobile Technology

2.2.3. *Unit Code:*

There are agreed conventions for the unit codes used for unit of competences organized for any specific occupational standard. Codes are given by considering international and national benchmarks.

Example:

Unit Title: Develop animal feed plan and conduct ration formulation

Unit Code: **AGR ANP4 01 0322**

Unit Coding is described here under:

Character	**What it stands for:**
AGR	First three characters signify *the priority/major industry/sector* acronym. **AGR***represents Agriculture*
ANP4	Four characters in the second group signify the acronym of the occupational title expressed as a work function and qualification level written in numerical form shows the unit belongs. **ANP4** represents Animal production *and number **4**represents that the occupational standard serves for Level IV*
01	Third group with two numbers signify the numerical order of the specific unit in the level occupational standard
0322	Fourth group of four characters signify the month and year of OS development. *E.g. December **2020***

2.2.3 Version Change

This occupational standard is developed in the title of **"Animal production** *"for level I, II, III and IV. The title of the occupational standard for this version is maintained the existing title names (level I, II, III and IV), to which the relevant sector for the occupation- Agriculture sector belongs. Hence, units of competences considered from previous* **Basic Agricultural production and Natural Resource conservation** *(for level I 2018) and from* **Animal Production** *(level II, III and IV 2018)) and these versions are modified in to the above-mentioned occupations and can be considered as a new occupation by endorsing their own competency.*

The version number for future revision will either be changed or not, depending on the extent of the change. Thus, those who are responsible to undertake competence assessment and provide training should check for the version number and review date of the document to confirm the latest version number before developing assessment tools and commence training respectively. Users are also advised to contact the agency for any doubts they have on the document or may refer to the website.

The development date is the time the document is prepared and validated by relevant industry experts and approved by relevant sector leading the industry. It indicates the effective date to use the document for training and assessment purposes and termination of use of the previous version for any purposes.

The endorsed occupational standards and their components may remain current up to five years from the date of development. This version is developed in ***February 2022.***

Previous Occupational Standard	**Modified Occupational standard**
Name and Level: Basic Agricultural production and Natural Resource Conservation : Level I	**Name and Level: Animal Production: Level I**
Name and Level: Animal Production: Level I	**Name and Level: Animal Production: Level I**
Name and Level: Animal Production: Leve I III	**Name and Level: Animal Production: Level III**
Name and Level: Animal Production: Level IV	**Name and Level: Animal Production: Level IV**
version: three	version: four
Date of Development: October 2018	Date of Development: February 2022

Revision Changes

Level	Changes on the units	Justification/Remark
Level I	***Endorsed Units:***	
	Endorsed Units with modification • Support Pasture Establishment and Preservation of Feeds	• *Bench mark and existing document*
	Merged Units:	•
	Merged (Incorporated) to related Units:	•
	Shifted Units:	•
	Shifted Units with modification: • Operate a Personal Computer • Carryout basic husbandry practice for Livestock and Fishery • Identify Animal Feed Resource and Prepare Urea Molasses Block • Comply with Animal Welfare Requirements • Apply Knowledge of Anatomy and Physiology of Farm Animals • Handle and preserve hide and skin	• *Bench mark and existing document*
	Replaced Units:	•
	Removed Units: • Support Natural Resources Conservation Work • Apply Knowledge of Anatomy and Physiology of Farm Animals • Apply Basics of Human Nutrition Practices • Support Awareness Creation in Local Community Work • Support Gender Mainstreaming and HIV/AIDS Initiatives • Develop Understanding of Entrepreneurship	• *Bench mark and existing document*
	Removed but incorporated in other Units: • Follow Workplace Safety Policies and Procedures • Apply Quality Standards • Work with Others • Receive and Respond to Workplace Communication • Demonstrate Work Values	• *Bench mark and existing document*
	Modified	•

	•	
Level II	***Endorsed Units:***	
	Endorsed Units with modification • Assist Basic Husbandry Practice of Ruminants • Assist Basic Husbandry Practice of Poultry • Raise Swine Production • Assist Basic Husbandry Practices of Draft Animals • Raise Fish Production • Contribute to Sericulture Development • Participate in Forage Development • Follow Site Quarantine Procedures • Conduct crop residue treatment and urea molasses making	• *Bench mark and existing document*
	Upgraded units • Raise Fish Production • Assist Beekeeping Operations	• *Bench mark and existing document*
	Merged Units:	•
	Merged (Incorporated) to related Units:	•
	Shifted Units:	•
	Shifted Units with modification: • Assist Basic Husbandry Practice of Camel • Assist in Handling and Processing of Milk • Assist in Handling and Preserving Hide and Skin	• *Bench mark and existing document*
	Replaced Units:	•
	Removed Units: • Develop Business Practice • Standardize and Sustain 3S	• *Bench mark and existing document*
	Removed but incorporated in other Units: • Assist Machinery and Equipment Operation • Participate in Workplace Communication • Work in Team Environment • Apply knowledge of Anatomy and Physiology of farm animals	• *Bench mark and existing document*
	Modified	• *Bench mark and existing*

	• Assist Crop Residues Treatment and livestock feeding • Establishment of pasture and preservation of feeds • Work on Animal welfare requirements	*document*
Level III	***Endorsed Units:***	
	Endorsed Units with modification • Assist Dairy Cattle Production Activities • Support Sheep and Goat Production Activities • Coordinate Camel Production Practices • Coordinate Livestock Fattening Operation • Assist Poultry Production Activities • Perform Apiculture production • Carryout Aquaculture and Fishery Production Activities	• *Bench mark and existing document*
	Merged Units:	•
	Merged (Incorporated) to related Units: • Adapt Equine Production Techniques • Support Swine Production Activities	• *Bench mark and existing document*
	Shifted Units: •	• *Bench mark and existing document*
	Shifted Units with modification: • Identify and Organize Animal Feed Resources • Participate in Livestock Breeding Activities	• *Bench mark and existing document*
	Replaced Units:	•
	Removed Units: • Promote Nutrition Sensitive Agriculture • Lead Small Teams • Improve Business Practice • Apply knowledge of Anatomy and Physiology of Farm Animals	• *Bench mark and existing document*
	Removed but incorporated in other Units: • Operate and Maintain Livestock Production Machinery and Equipment • Respond to Emergencies • Monitor Implementation of Work Plan/Activities • Apply Quality Control • Lead Workplace Communication • Prevent and Eliminate MUDA	• *Bench mark and existing document*

	Modified •	•
Level IV	***Endorsed Units:*** •	
	Endorsed Units with modification • Develop Integrated Farm Production • Develop Animal Feeding Plan • Facilitate and Organize Animal Products and By-products Handling Systems • Facilitate Rangeland Development and Management • Plan and Organize Work	• *Bench mark and existing document*
	Merged Units:	•
	Merged (Incorporated) to related Units:	•
	Shifted Units: • Facilitate Animal Health Program • Migrate to New Technology	• *Bench mark and existing document*
	Shifted Units with modification: •	•
	Replaced Units:	•
	Removed Units: • Implement Livestock Emergency Guidelines and Standards • Utilize Specialized Communication Skills • Manage Micro, Small and Medium Enterprises (MSMEs)	• *Bench mark and existing document*
	Removed but incorporated in other Units: • Implement and Monitor Environmental Policies and Procedures • Establish Quality Standards • Develop Individuals and Team • Apply Problem Solving Techniques and Tools	• *Bench mark and existing document*
	Modified	•

UNIT OF COMPETENCE CHART

Occupational Standard: Animal Production

Occupational Code: AGR ANP1

NTQF Level I

AGR ANP1 01 0322 Carryout Basic Husbandry Practice for Livestock and Fishery	**AGR ANP1 02 0322** Identify Animal Feed Resource and Feeding of Livestock	**AGR ANP1 03 0322** Establishment of Pasture and Preservation of Feeds
AGR ANP1 04 0322 Work on Animal Welfare Requirements	**AGR ANP1 05 0322** Handle and Preserve Hide and Skin	**AGR ANP1 06 0322** Apply Agricultural Extension Service
AGR ANP1 07 0322 Implement Agribusiness Marketing	**AGR ANP1 08 0322** Apply Basics of Human Nutrition Practices	**AGR ANP1 09 0322** Apply 5S Procedures

Occupational Standard: Animal Production

Occupational Code: AGR ANP2

NTQF Level II

AGR ANP2 01 0322 Conduct Forage Development & Preservation	**AGR ANP2 02 0322** Carryout Husbandry Practice of Ruminants	**AGR ANP2 03 0322** Carryout Husbandry Practice of Poultry
AGR ANP2 04 0322 Raise Swine production	**AGR ANP2 05 0322** Perform Husbandry Practices of Draft Animals	**AGR ANP2 06 0322** Raise Fish Production
AGR ANP2 07 0322 Carryout Beekeeping Operations	**AGR ANP2 08 0322** Perform Sericulture Development	**AGR ANP2 09 0322** Conduct Crop Residues Treatment and Urea Molasses Block
AGR ANP2 10 0322 Undertake Quarantine Procedures for Livestock Farm	**AGR ANP2 11 0322** Apply Agricultural Extension service for Rural development	**AGR ANP2 12 0322** Prevent and Eliminate MUDA

Occupational Standard: Animal Production

Occupational Code: AGR ANP3

NTQF Level III

AGR ANP3 01 0322 Conduct Dairy Cattle Production	**AGR ANP3 02 0322** Undertake milk handling and processing	**AGR ANP3 03 0322** Perform Apiculture production
AGR ANP3 04 0322 Carryout Camel Production	**AGR ANP3 05 0322** Conduct Sheep and Goat Production	**AGR ANP3 06 0322** Carry out Aquaculture and Fishery Production
AGR ANP3 07 0322 Perform Poultry Production	**AGR ANP3 08 0322** Undertake Livestock Fattening	**AGR ANP3 09 0322** Perform Artificial Insemination for Livestock
AGR ANP3 10 0322 Designing Livestock Farmstead Structure and Facilities	**AGR ANP3 11 0322** Apply Digital Technology in Agriculture	

Occupational Standard: Animal Production		
Occupational Code: AGR ANP4		
NTQF: Level IV		
AGR ANP4 01 0322 Develop Animal Feed Plan and Conduct Ration Formulation	**AGR ANP4 02 0322** Develop and Managed Rangeland	**AGR ANP4 03 0322** Undertake Livestock Breeding
AGR ANP4 04 0322 Conduct Poultry Hatchery Activities	**AGR ANP4 05 0322** Handle and Process Animal Products and By-Products	**AGR ANP4 06 0322** Undertake Integrated Farm Production System
AGR ANP4 07 0322 Collect, Manage, Analyze and Interpret Data	**AGR ANP4 08 0322** Facilitate Animal Health Program	**AGR ANP4 09 0322** Develop value chain analysis

Level I

Occupational Standard: Animal Production Level I	
Unit Title	**Carryout Basic Husbandry Practice for Livestock and Fishery**
Unit Code	**AGR ANP1 01 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to carry out basic husbandry practices for Livestock and Fishery that requires the ability to prepare materials, tools and equipment, undertake routine livestock activities, handle material and equipment, and clean up on completion of work.

Element	Performance Criteria
1. Identify and Prepare materials, tools and equipment for livestock and fishery work	1.1. The required ***materials, tools and equipment*** are identified and Prepare according to lists provided and/or supervisor's instructions. 1.2. Checks are conducted on all materials, tools and equipment with insufficient or faulty items reported to the supervisor. 1.3. Check correct manual handling techniques for loading and unloading materials are used to minimize damage to the load and the vehicle. 1.4. Suitable ***Personal Protective Equipment (PPE)*** are selected and checked prior to use. 1.5. ***OHS hazards*** are identified and responded according to OHS requirements and ***workplace information***.
2. Undertake livestock and fishery work as directed	2.1. ***Instructions*** and directions provided by supervisor are followed and clarification sought when necessary. 2.2. Appropriate ***restraining methods*** are used according to husbandry practice. 2.3. ***Fishery farming activities*** are undertaken with appropriate manner under supervision. 2.4. Work is undertaken in a safe and environmentally appropriate manner according to enterprise guidelines. 2.5. Interactions with other staff, farmers and customers are carried out in a positive and professional manner. 2.6. Enterprise or cooperative policy and procedures in relation to

	workplace practices, handling and disposal of materials are observed in environmentally safe manner.
3. Clean up and store materials and equipment	3.1. ***Waste material*** produced during work is stored in a designated area according to supervisor's instructions. 3.2. Materials, equipment and machinery are handled and transported according to supervisor's instructions and enterprise guidelines. 3.3. Disposable Materials are disposed according to supervisor's instructions. 3.4. Tools and equipment are cleaned, maintained and stored according to manufacturer specifications and supervisors instructions.
4. Record and report activities	4.1. Activities accomplished and incidences are recorded and documented in standard format according to workplace procedures 4.2. Problems or difficulties in completing work to required standards or timelines are reported to supervisor 4.3. Work outcomes are reported to the supervisor.

Variable	**Range**
Materials, tools and equipment	May include, but not limited to: • Burdizzo • Hoof Trimmer • Trocar And Canula • Hoof Knife • Heart Girth Measuring Meter • Balling Gun • Drenching Gun • Ear Tag Applicator • Ear Tag • Debeaker • Lamp • Hover • Candler • Casting Mould

	• Hives • Knife • Chisel • Incubator • Cream Separator • Fish Net, • Sechi Disc • Ph Meter • Dissolved Oxygen Meter • Churner, Lactometer • Refracto-Meter • Strip Cup • Rope • Frame • Queen Excluder • Queen Cage • Honey Extractor • Treatment Syringes • Vaccine Syringes • Sprayer, Scissors, Forceps • AI Gun • Artificial Insemination Sheath • Liquid Nitrogen Container • Semen Straw • Measuring Rod • Thermometer • Thermo-Flask • Waterer • Federer • Laying Nest • Egg Tray • Crate, etc.
PPE	May include, but not limited to: • Plastic boots/shoes • Overalls • Gloves • Apron

	• Sun hat • Sunscreen lotion • Safety goggles • Face mask and ear protectors.
OHS hazards	May include, but not limited to: • Solar radiation, dust, noise, air- and soil-borne micro-organisms, chemicals and hazardous substances, sharp hand tools and equipment, manual handling, holes, and slippery and uneven surfaces, cold shock of liquid nitrogen etc.
Workplace Information	May include, but not limited to: • Procedures for disposing of waste materials, work instructions or verbal instructions from the supervisor.
Instructions	May include, but not limited to: • Standard Operating Procedures (SOPs) • Enterprise policy and procedures • Specifications • Work notes • Material Safety Data Sheets (MSDSs) • Manufacturer's instructions • Verbal directions from manager or supervisor.
Tasks in livestock husbandry practice	May include, but not limited to: • Assisting livestock while moving, • Caring for animals, mixing and distributing stock feed, • Loading and unloading goods and materials, • Carrying out routine maintenance on buildings, roads, troughs, fences, cleaning yards/sheds, sheds, fixtures and fittings, • Disposing of deceased animals, cages/pens, • Identifying female animals in heat estrus, reporting to AI technician and restraining of animals
Restraining methods	May include, but not limited to: • Use of chutes, alleys, barriers, use of tools, etc.
Fishery farming activities	May include: • Pond preparation for stocking, feeding.
Waste materials	May include, but not limited to: • Packaging and broken components, • Plant debris, litter, and • Plastic, metal, and paper-based materials which may be recycled, re-used, returned to the manufacturer or disposed of

	according to enterprise work procedures.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Identify and handle materials, tools and equipment for livestock husbandry practice • Follow animal handling techniques • Use PPE in appropriate and safe manner • Clean up materials, tools and equipment on completion of work • Record, document and report in standard format and procedure
Required Knowledge and Attitudes	Demonstrate knowledge of: • Materials, tools and equipment for livestock and fishery work • Animal handling techniques • Safe work practices in handling animals, working on construction and maintenance • Manual handling and lifting techniques • Waste material disposal and environmental safety
Required Skills	Demonstrate skills to: • Identify, prepare and use materials, tools and equipment for work • Undertake livestock work (cleaning, restraining) as directed • Clean up and handle materials and equipment on completion of work • Repairing and maintaining of buildings, fences, fixtures or fittings • Plan and organize own activities in order to complete tasks efficiently, in a logical sequence, and in a timely manner. • Communicate ideas with team, Record, document and report the level of standard
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning

Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level I	
Unit Title	**Identify Animal Feed Resources and Livestock Feeding**
Unit code	**AGR ANP1 02 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to identify animal feed resources and livestock feeding and also required to assess fed resource, preparing materials, tool and equipment for preparation of urea molasses block and for livestock production to maximum sustainable production.

Element	Performance Criteria
1. Assess feed resources	1.1. ***Animal feed resources*** are assessed to ***meet production requirements*** and industry objectives 1.2. ***Industrial by-products*** are identified according to ***industry requirements*** 1.3. ***Crop and crop residues*** are determined according to the production plan. 1.4. ***Mixed feeds*** are assessed according to the production plan.
2. Prepare materials, tools and equipment	2.1. The required materials, tools and equipment are identified according to lists provided and/or supervisor's instructions. 2.2. Checks are conducted on all materials, tools and equipment with insufficient or faulty items reported to the supervisor. 2.3. Correct manual handling and techniques for loading and unloading materials are used to minimize damage to the load and the vehicle. 2.4. Suitable Personal Protective Equipment (PPE) are selected and checked prior to use. 2.5. ***OHS hazards*** are identified and responded according to OHS requirements and workplace information.
3. Clean up on completion of work	3.1 Reusable Materials are returned to store and disposable material are disposed according the work instruction 3.2 Material, Tools, equipment and machinery are cleaned, maintained, handled, transported and stored according to the industry guidelines. 3.3 Difficulties in completion and work outcomes are reported to supervisor, feedback on performance is sought and any required improvements are noted for future action.

Variable	Range
Animal feed Resource	May include, but not limited to: • Natural pasture, tree legumes, Perennials such as phalaris, elephant grass, rhodes grass, rye grass, clover. • Annual grasses such as rye, grass, cereals. • Annual legumes such as alfalfa, pigean pea, vetch, cow pea, lablab, desmodium etc.
Industrial by-products	May include, but not limited to: • Noug cake, linseed cake, wheat bran, molasses, cane top, cotton seed cake, wheat short, brewery by-products, fish meal, bone meal, meat meal etc.
Industry requirements	May include, but not limited to: • Standard Operating Procedures (SOPs), • Industry standards, • Total quality management standards, • Product labels, manufacturers specifications, MSDS, operators manuals, • Production schedules,
Crop and crop residues	May include, but not limited to: • Wheat straw, Teff straw, barley straw, maize stover, etc. • Cereal crop residues: such as wheat straw, barley straw, teff straw, rice straw, maize stover, sorghum stover, millet stover and oat straw straws, stalks, husks, cobs • Legume Crop Residues: such as; groundnut, chick pea, pea, soybean. • Other crop residues: the waste materials from oil palm processing plants, cotton waste, sisal waste, pineapple waste, cocoa pods, coffee hulls, etc.
Mixed feed	May include, but not limited to: • Feeds those are manufactured in the feed processing industry for the for livestock production
OHS	May include, but not limited to: • The safe operation and maintenance of material, tools and • Equipment. • Manual handling especially when handling and loading feed • Storage, handling and transportation of hazardous • Substances (petroleum products, pesticides and Anhydrous ammonia)

	• Protection from hazardous noise and organic and other dusts • Outdoor work including protection from solar radiation • Use of relevant personal protective equipment • Livestock handling including zoo noses control • Manual handling including lifting and carrying • Feed materials handling systems and procedures to • Reduce risk associated with organic dusts • Use of relevant personal protective equipment.
Ingredients	May include, but not limited to: • Molasses, Urea, salts, water, cement, wheat barn, wheat short, Noug cake, crop residues.
Feeding	May include, but not limited to: • Staged introduction of grain feeding, feeding grain on the ground or in troughs, access to water, allowing adequate time to change over feedstuffs, ad lib feeding, restriction of movement, gradual introduction to feedstuffs, and strip grazing.
Feed problems	May include, but not limited to: • Introduction of weeds, chemical residues, trampling losses, grain poisoning, curtailed or shortened lactation, miss-mothering, and scouring.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Identify industrial by-products and crop residues for livestock. • Identify new pastures and crops(select pasture species)
Required Knowledge and Attitudes	Demonstrate knowledge of: • Cleaning, storage and control of materials, machinery and equipment. • Advantages and disadvantages of pasture, crop residue, industrial by-product etc…feed to livestock • Types of grasses and legumes
Required skills	Demonstrate skills to: • Assess adequacy of feed storage and distribution systems. • Complete the required data of feed use and livestock performance • Operate material, tool and equipment • Identify pests destroy/damage feeds.

	• Identify pasture feed species, industrial by-product, crop residue.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level I	
Unit Title	**Establishment of Pasture and Preservation of Feeds**
Unit code	**AGR ANP1 03 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to establish pasture. It requires the ability to prepare and handle materials, tools and equipment, Undertake pasture establishment activities and clean up on completion of work.

Element	Performance Criteria
1.Prepare for pasture establishment	1.1. The required ***materials, tools and equipment*** are identified. 1.2. Correct manual handling and techniques for loading and unloading materials are used to minimize damage to the load and the vehicle. 1.3. Suitable ***Personal Protective Equipment (PPE)*** are selected and checked prior to use. 1.4. ***OHS hazards*** are identified and provided according to OHS requirements and ***workplace information***.
2. Undertake pasture establishment	2.1. ***Instructions*** and directions provided by supervisor are followed and clarification sought when necessary. 2.2. Site selection and land preparation are carried out 2.3. ***Pasture establishment activities*** are undertaken 2.4. Work ***task*** is undertaken in a safe and environmentally appropriate manner according to workplace guidelines. 2.5. Interactions with other staff, farmers and customers are carried out in a positive and professional manner. 2.6. Enterprise or cooperative policy and procedures are observed in relation to workplace practices, handling and disposal of materials.
3. Clean up and store materials and equipment	3.1. ***Waste materials*** produced during pasture establishment work are stored in a designated area 3.2. Materials, equipment and machinery are handled and transported according to the industry

	3.3. Re usable materials are returned to store and disposable materials are disposed and recorded according. 3.4. Tools and equipment are cleaned, maintained and stored according to manufacturer specifications instructions.
4.Record and report work activities	4.1. Activities accomplished are recorded and documented in standard format according to workplace procedures 4.2. Problems or difficulties in completing work to required standards or timelines are reported to supervisor 4.3. Materials, tools and equipment damages are recorded and reported to supervisor 4.4. Work outcomes are reported to the supervisor

Variable	**Range**
Materials, tools and equipment	May include, but not limited to: • Rope, empty sacks • Seed, seedling, green forage, • Hoe, plough, harnesses, sickle, meter, axe/hammer, etc. • Tractor with its accessories, combine harvester, chopper, • Weighing scale, graduated cylinder • Water pump, watering can, • Barrel, spade, wheelbarrow, fertilizer, pick axe
PPE	May include, but not limited to: • Plastic boots/shoes, overalls, gloves, sun hat, sunscreen lotion, safety goggles, face mask and ear protectors
OHS hazards	May include, but not limited to: • Solar radiation, dust, noise, air- and soil-borne micro-organisms, fire hazard, chemicals and hazardous substances, sharp hand tools and equipment, manual handling, holes, and slippery and uneven surfaces.
Work information	May include, but not limited to: • Procedures for disposing of waste materials, • Work place instructions
Instructions	May include, but not limited to: • Standard Operating Procedures (sops), • Enterprise policy and procedures,

	• Specifications, work notes, • Material Safety Data Sheets (MSDSs), • Manufacturer's instructions, or • Verbal directions from manager or supervisor.
Pasture establishment activities	May include, but not limited to: • Site selection, • Land preparation, • Selecting forage types(grass, legumes and fodder trees), • Selecting sowing methods, • Watering, • Fertilizer application, • Weeding • Harvesting
Task	May include, but not limited to: • Assisting with regular pasture establishment work, • Carrying out routine handling of materials and equipment, fixtures and fittings.
Waste materials	May include, but not limited to: • Plant debris, • Litter and broken components, • Plastic, • Metal, paper-based materials. • These may be recycled, re-used, returned to the manufacturer or disposed of according to enterprise work procedures.

Evidence Guide	
Critical Aspect of Competence	Must demonstrate knowledge skills and knowledge to: • Identify, prepare and handle materials, tools and equipment for pasture establishment • Undertake pasture establishment activities • Demonstrate safe work practices in all pasture establishment (activities) • Demonstrate safe manual handling and lifting techniques • Apply appropriate and safe manner of using PPE • Clean up materials, tools and equipment on completion of work • Record, document and report in standard format and procedure appropriate to the level
Required Knowledge and	Demonstrate knowledge of:

Attitudes	• Pasture establishment techniques • Types of materials, tools and equipment pasture establishment and their uses • Pasture establishment activities • Application of safe working practices • Materials, tools and equipment cleaning and storing techniques • Safe manual handling and lifting techniques • Recording, documenting and reporting procedures
Required skills	Demonstrate skills to: • Identify, prepare materials, tools and equipment for pasture establishment work • Demonstrate safe manual handling and lifting techniques • Apply appropriate and safe manner of using PPE • Demonstrate safe work and handling of materials and equipment in work practices • Demonstrate relevant clean technique on completion of work • Record, document and report in standard format and procedure
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level I	
Unit Title	**Work on Animal Welfare Requirements**
Unit Code	**AGR ANP1 04 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to comply with industry animal welfare requirements in the production of livestock that requires the ability to guide animal welfare practices, follow standard operating procedures and report problems that affect animal welfare.

Element	Performance Criteria
1. Participate in animal welfare practices	1.1. ***Elements*** of the industry animal welfare ***requirements*** are determined according to enterprise guidelines. 1.2. ***Hazards*** to animal welfare are identified for work area according to enterprise guidelines and standard operating procedures. 1.3. Critical control points for work area are determined according to workplace procedures. 1.4. Record keeping on animal welfare and quality products are completed according to industry Quality Assurance (QA) requirements.
2. Follow standard operating procedures	2.1. Standard operating procedures in respect to animal welfare requirements are implemented in accordance with enterprise requirements. 2.2. Non-conformance is reported to supervisor according to enterprise/industry requirements. 2.3. Corrective action is taken in accordance with enterprise policy and procedures.
3. Report problems that affect animal welfare	3.1. Potential or existing animal welfare is recognized according to enterprise guidelines. 3.2. Instances of problems of animal welfare are identified from specifications or work instructions. 3.3. Variation and potential problems are reported to supervisor/ manager according to enterprise guidelines.

Variable	Range

Elements	May include, but not limited to: • Hazard Analysis Critical Control Point (HACCP) charts, mission statement, work instructions, corrective action and monitoring procedures, standard operating procedures, and enterprise and industry policies and welfare code of practice.
Requirements	May include, but not limited to: • Housing and accommodation for livestock. • Space allowances and/or stocking densities. • Equipment including feeders and waterers, environmental control equipment and back-up systems, and alarms in case of equipment failure. • Lighting. • Ventilation including fresh air, dust filters, humidity, and noxious gases. • Temperature including cooling and heating, and extreme weather conditions. • Protection from predators, vermin, fires and floods. • Food with diet containing adequate nutrients. • Provision of cool water in summer and checking it is not contaminated or deleterious to health. • Health and distress. Signs of ill health in livestock may include reduced food and water intake, reduced production, changes in the nature and level of their activity, abnormal condition, or changed physical features. • Transport of livestock. • Handling of livestock by stock people.
Hazards	May include, but not limited to: • Physical hazards where foreign objects are present in animals. • Chemical hazards resulting from residues such as antibiotics, pesticides, alkaloids, and other substances used in animal production. • Biological hazards where contamination is from other animals (e.g. Mice, rats, cats), poor housing/transport conditions and dirty water affects animal health and food quality. • Animal health hazards resulting from poor handling of animals, unhealthy or diseased animals, extreme weather conditions, poor loading and transport conditions, and time off feed.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • Contribute in monitoring procedure and correction action of setback of animal welfare • Carry out housing and housing facilities of animal • Determine space allowance for animal
Required Knowledge and Attitudes	Demonstrate knowledge of: • Animal health and welfare requirements, practices and procedures • Animal handling techniques identification • Relevant animal welfare legislation and codes of practice • Animal husbandry requirements
Required skills	Demonstrate skills to: • Apply water, feed, lighting, ventilation • Provide basic health care • Concern/care during transportation • Report problems that affect animal welfare • Handle livestock in a humane and caring manner
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level I	
Unit Title	**Handle and Preserve Hide and Skin**
Unit code	**AGR ANP1 05 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required in handling and preserving of hide and skin. It requires the ability to prepare materials, tools and equipment, care for hide and skin on live animal, handle, preserve, sort and grade hide and skin and clean up on completion of work.

Elements	Performance Criteria
1. Care for hide and skin on live animal	1.1. ***Bruising*** of hide and skin is protected to meet production plan according to industry objective 1.2. ***External parasitic*** infestation is prevented according to enterprise industry requirements. 1.3. Restraining of animals should be carried out carefully to prevent hide and skin damage to meet production plan 1.4. Appropriate ***slaughtering procedure*** is used and carried out according to industry requirements.
2. Prepare hide and skin for preservation	2.1.Appropriate site selection is determined according to legislation requirements 2.2. Appropriate ***methods of preservation*** for hide/skin are selected according to enterprise industry objectives. 2.3. Preservation ***materials and equipment*** are prepared appropriately. 2.4. Preservation is carried out according to enterprise procedures 2.5. Work ***task*** is undertaken in a safe and environmentally appropriate manner according to enterprise guidelines
3. Undertake sorting and grading of hide and skin	3.1. Sorting and grading are carried out according to industry procedures 3.2. Any OHS hazards are identified and appropriate action is taken according to industry policy and OHS legislation and codes. 3.3. ***PPE*** and clothing are used in accordance to enterprise

	guidelines 3.4. Sanitary procedures are observed based on industry standard 3.5. Materials, equipment and machinery are selected for transportation according to supervisor's instructions and industry guidelines.
4. Clean up on completion of work	4.1. The preserved hide or skin is properly stored until transporting according to supervisor's instruction. 4.2. Reusable materials are returned to store or disposable materials are disposed of according to supervisor's instructions. 4.3. Tools and equipment are cleaned, maintained and stored according to manufacturer's specifications and supervisor's instructions. 4.4. All ***waste products*** are disposed of according to industry procedures. 4.5. Work outcomes are reported to the supervisor.

Variable	**Range**
Bruising	May include, but not limited to: • Branding, stubbing.
External parasite	May include, but not limited to: • Ticks, mange mites, fly, fleas, lice
Slaughtering procedure	May include, but not limited to: • Stunning, ripening, flying.
Methods of preservation	Includes: • Frame (air) drying and salting
Materials and equipment	May include, but not limited to: • Salt, clean water, detergents ,rope, protective clothes, materials to construct frames and ware house, cleaning brush, rubber hose, chemical, plomp, covering materials • Jar, barrel, air drying frame, knives, animals, slaughter slab, , hoist, fixed and movable frames, dirt pit, dirt bin, pit to burn left over and offal, rake, axe, trimming and washing table,.
Task	May include, but not limited to: • Preparing materials, tools and equipment, • Handling and preserving of hide and skin activities, • Proper avoiding of waste disposals

PPE	May include, but not limited to: • Plastic boots/shoes, overalls, gloves, sun hat, sunscreen lotion, safety goggles, and face mask.
Waste products	May include, but not limited to: • Offal of hide and skin, salt residues,

Evidence Guide	
Critical Aspect of Competence	Must demonstrate knowledge and skills competence to: • Handle materials and equipment • Prepare and undertake preservation of hide and skin • Clean up on completion of work
Required Knowledge and Attitudes	Demonstrate knowledge of: • Hide and skin preservation methods • Types of tools and equipment • Repair and maintenance of fixtures /frame
Required skills	Demonstrate skills to: • Prepare and handle materials, tools and equipment for work • Undertake slaughtering of animals • Undertake preservation of hide and skin
Resource Implication for assessment	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard : Animal Production Level I	
Unit Title	**Apply Agricultural Extension Service**
Unit Code	**AGR ANP1 06 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to understand the Concept and evolution of agricultural Extension, apply extension methods and Approaches, apply Agricultural extension Communication and facilitation for technology promotion, Conduct training and record and document data
Element	**Performance Criteria**
1. Understand the Concept and evolution of Agricultural Extension	1.1 The ***concept of Agricultural extension*** is understood to gain relevant knowledge 1.2 The ***evolution and progress of agricultural extension*** is expressed to understand the concept of Agricultural Extension 1.3 The ***role of extension*** in agricultural development is understood to deliver effective extension services 1.4 The ***importance of Agricultural extension*** is determined to have appropriate knowledge, 1.5 ***Extension planning*** is understood to determine extension activities
2. Apply Extension methods and Approaches	2.1. ***Extension methods*** are understood to provide Extension services based on organizational standard, extension systems, extension strategy and extension guide lines 2.2. ***Extension approaches*** are understood for implementation of extension services 2.3. The ***importance of extension methods and approaches*** are understood for Agricultural extension service delivery 2.4. Appropriate extension methods and approaches are applied to transfer agricultural technologies, based on organizational standard, extension systems, extension strategy and extension guide lines,
3. Apply Agricultural Extension Communication and Facilitation for technology promotion	3.1. The concept***, principle*** and ***type of communication*** is understood to have good extension communication knowledge & skill 3.2. ***Communication barriers*** are identified, understood and solved to undertake effective communication 3.3. ***Elements of extension communication*** are defined and used to create positive environment for communication 3.4. ***Audio visual techniques*** are understood to provide Agricultural

	Extension and communication delivery services 3.5. ***Roles*** and ***characteristics of extension communicator*** are recommended to improve the communicator's performance 3.6. The ***basic concept of facilitation*** is understood to improve facilitation skills 3.7. The ***roles and responsibilities of a facilitator*** is applied to progress facilitation skills 3.8. Conflict resolution skill is understood to enhance homogeneity 3.9. The ***skills of a facilitator*** are applied for communication & technology promotion
4. Conduct Training	4.1. ***Need assessment*** is conducted to provide appropriate training 4.2. ***Preparation*** is carried-out to facilitate the training process ***4.3.*** Implementation is conducted to capacitate trainees based on organizational training guide line ***4.4. Evaluation is carried-out*** to understand the outcome
5. Record and Document Data	5.1 ***Data collecting formats*** are developed 5.2 Appropriate data are collected and organized 5.3 Collected and organized data are documented and ***reported***

Variable	**Range**
Concept of Agricultural Extension	May include but not limited to: • Definition of agricultural extension • Purpose of agricultural extension
Evolution and progress of agricultural extension	May include but not limited to: • National Agricultural Extension systems • Related reading materials • Professionals • Electronic mail • Briefing notes • Journal articles • Code of conduct

Role of extension	May include but not limited to: • Situation analysis • Awareness creation • Training • Facilitation • Demonstrations • Field day exchange visit • Establish farmers group • Link farmers with relevant stakeholders • Monitoring and evaluation • Experience sharing • Assist and provide extension services for farmers • Organize farmer to farmer learning
Importance of Agricultural extension	May include but not limited to; • Identify problem • Find solution • Bring behavioural change • Transfer of technology • Assist farmers to help themselves
Extension planning	May include but not limited to: • Conduct survey • Identification of activities • Data collection • Development of formats
Extension methods	May include but not limited to: • Individual • Group • Mass
Extension approaches	May include but not limited to: • Participatory • Pluralistic • Farmers field school • Pastoral field school • Mobile extension • Model village • Cluster approaches • Scaling/up/out/down

Importance of extension methods and approaches	May include but not limited to: • Information and technology dissemination • Deliver extension message effectively • Increase knowledge of farmers • Bring attitude change • Formation of opinion • Encourage farmers to raise issues • To get/provide possible alternative solutions
Type of communication	May include but not limited: • Intra personal communication • Inter personal communication • Organizational communication
Principles of communication	May include but not limited to: • Awareness creation • Designed message with respect to objectives and respective audience • Message content should suite to the target audience
Communication barriers	May include but not limited to: • The use of jargons words/terms • Cultural differences • Lack of attention, interest, distractions • Differences in perception and viewpoint • Physical disabilities • Physical barriers to non-verbal communication • Language differences and the difficulty in understanding unfamiliar accents • Expectations and prejudices • Emotional barriers and taboos
Elements of extension communication	May include but not limited to: • Source • Sender • Message • Channel • Receiver

Audio visual techniques	May include but not limited to: • Audio visual aids • Assembling • Character • Advantages • Uses
Characteristics of extension communicator	May include but not limited to: • Confident • Friendly/ welcoming • Observant • Appreciative • Respectful • Organized • Good judgment • Consistent • Honest
Role of extension communicator	May include but not limited to: • Create motivation and feeling • Be aware of problem of the local people • Priority of direct needs • Create self-belief in rural people • Emphasis on self-depend aces • Change in social attitude • Rebuilding of the village • Full uses of local resources
Basic concept of facilitation	May include but not limited to: • Definition of facilitation • Purpose of facilitation • Evolution and progress of facilitation

Role and responsibility of facilitator	May include but not limited to: • Does not evaluate group ideas • Helps the group focus its energies on a task • Suggests methods and procedures • Protects all members of the group from attack • Helps find win/win solutions • Makes sure that everyone has the opportunity to participate • Periodically summarizes the group consensus on issues to validate and clarify the progress of the discussion • Encouraging of every one's knowledge
Conflict resolution skill	May include but not limited to: • Recognize • Resolve conflicting needs • Relieve stress • Recognize and manage emotions • Improve nonverbal communication skills • Use humor and play to deal with challenges
Skill of facilitator	May include but not limited to: • Active Listening • Summarizing • Synthesis • Conflict resolution
Need assessment	May include but not limited to: • Identification of areas • Selection of respondents • Preparation of tools • Conduct the assessment • Organize data
Preparation	May include but not limited to: • Identify trainees and trainers • Organize logistics • Select Venue • Selecting and organize training materials • Select and Organize training aids • Prepare schedule and others

Evaluation	May include but not limited to: • Preparation of evaluating formats • Identify sample • Conduct evaluation • Organize result • Report
Data collecting formats	May include but not limited to: • Recording formats • Writing formats
Reporting	May include but not limited: • Organizing • Writing • Submitting/transfer

Evidence Guide	
Critical Aspects of Competence	Demonstrates knowledge and skill to : • Identify and interpret the role of Agricultural Extension • Apply Extension method and Approaches • Develop Extension planning • Perform Conflict resolution • collect, record, organize and document data
Required Knowledge and Attitudes	Demonstrates knowledge and attitude of : • Agricultural extension • Conflict resolution • Extension method and Approaches • Agricultural Extension Communication and Facilitation • collecting, recording, organizing and documenting of data
Required Skills	Demonstrates skills to: • Resolve conflict • Develop Extension planning • Apply extension method and Approaches • Facilitate Agricultural Extension Communication
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and Occupational health and safety (OHS) practices.
Methods of	Competence may be assessed through:

Assessment	• Written Test, Interview, quiz, practical assignment • Observation, Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal production Level I	
Unit Title	**Implement Agribusiness Marketing**
Unit Code	**AGR ANP1 07 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Understand concept of agricultural marketing Understand concepts of agribusiness Identify marketing targets for Agricultural products Implement marketing strategy . Establish contract farming, and Apply Agricultural marketing services.

Element	Performance Criteria
1. Understand concept of agricultural marketing	1.1 ***.Concept of agricultural marketing*** is understood for Agricultural marketing 1.2 Importance of agricultural marketing is understood to provide agricultural marketing services 1.3 ***.Roles of*** **agricultural market**-oriented service is identified and understood 1.4 ***.Principles of agricultural marketing*** and strategies are identified and understood 1.5 ***Marketing mix*** is understood to implement agricultural marketing activities 1.6 ***Types of marketing*** are understood and identified to implement the appropriate marketing services
2. Understand concepts of agribusiness	2.1***. Concept of agribusiness*** is understood for Agricultural marketing 2.2 Importance of agribusiness is understood to provide agribusiness services 2.3 ***Roles of agribusiness***-oriented service is identified and understood 2.4 ***Principles of agribusiness*** and strategies are identified and understood 2.5. **Characteristic of Agribusines**s are understood to implement Agribusiness 2.6. **Dimension** and s**tructures** of Agribusiness are understood and distinguished
3. Identify marketing targets for Agricultural products	3.1 .***Marketing targets*** are identified for Agricultural products and services 3.2 ***Approaches*** **of** ***agricultural market*** are understood for agricultural market product and service. 3.3 ***Segment descriptors*** are used to display the targets of agricultural market 3.4 ***Strategic of agricultural marketing options*** are identified to develop agricultural ***marketing plan*** 3.5 Business plans are prepared to perform cost and benefit analysis

Implement marketing strategy	4.1 .Agricultural marketing functions strategy is designed to perform agriculture business. 4.2 ***Action plan*** is developed to implement Agricultural marketing strategies**.** 4.3 .Require resource are identified and coordinated to implement agricultural marketing 4.4 Marketing mix is implemented according to the strategy Agricultural.
Establish contract farming	5.1 Concept of ***contract farming*** is understood to enhance market oriented production 5.2 ***Types of contract farming*** are identified to select the appropriate approach 5.3 ***Models of Contract*** farming are understood and identified 5.4. Steps and procedures of contract farming establishments are identified 5.5 Contract farming ***requirements*** are identified and applied based on the organizational standard 5.6 Contract farming systems are established
6. Apply Agricultural marketing services	6.1 Agricultural products are identified to delivered provided marketing services 6.2 Need assessment is conducted to identify ***marketing conditions*** 6.3 ***Market strategies*** are developed to implement the Agricultural marketing services 6. 4Customer feedbacks are collected and organized to improve Agricultural marketing services 6.5 Data is organized and documented to report the appropriate body.

Variable	**Range**
Concept agricultural marketing	May include, but not limited to: • Needs • Product • Demand • Value • Transaction • Satisfaction and Quality • Exchange • Market
Roles marketing	May include but not limited to:

	• Determine price • Consumer choice • Increase efficiency • Improve scarcity
Principles agricultural marketing	May include but not limited to: • Product • Price • promotion • Place • People • Process
Marketing mix	• May include, but not limited to: • Price • Promotion • Place • Product
Types of marketing	May include, but not limited to • Perfect competitive • Monopoly • Oligopoly • Monopolistic
Concept of Agribusiness	May include, but are not limited to: • Agricultural impute supply • Farmer producer • Process of wholesaler • Distribution and retailer
Characteristic of Agribusiness	May include but not limited to: • Existence around production areas • Variety and size of Ag organization • Scale and type of competition • Conservativeness of Ag: • Decision making: • Community oriented business

Dimension	May include, but not limited to: • Agricultural sector and their interdependence • farm either private or government • Market oriented. • Dynamic sector and continuously meets current demands of consumers • Provides forward and backward linkages
Structures	May include but not limited to: • Input sector: • Farm/production sector: • Product sector:
Marketing targets	May include but not limited to: • Demographic • Geographic • Psychographic • Behaviours pattern
Marketing conditions	May include but not limited to: • Government • International transaction • Speculation and expectation • Supply and demand
AgriculturalMarket strategies	• May include, but not limited to: • Analyse agricultural market • Analyse competition • Define market mix • Determine position • Marketing budget • Execution plan understand potential customers
Approaches for agricultural market	• May include, but not limited to: • Functional • Institution • Commodity • Behavioural
Segment descriptors	• May include, but not limited to: • Demographic • Behavioural • Geographic • Psychographic

Marketing plans	• May include, but not limited to • Function of marketing • Market program • Achieve the market objectives
Action plan	• May include, but not limited to: • Resource • Budget • Times • Output
Contract farming	May include, but not limited to • Agreement between buyer and seller • Farmer and processing making firms for production • Supplies of agricultural product
Types of contract farming	May include, but not limited to • Market specifying • Recourse providing • Production management
Models of Contract	May include, but not limited to • Full model contract farming • Specific
Requirements	• Traceability • Site history and management • Propagation material • Soil/substrate management • Fertilizer use • Irrigation • Crop protection

Evidence Guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Understand Concept of agribusiness to apply agribusiness marketing • Identify Principles of agribusiness and strategies to implement Agribusiness marketing • Determine Agricultural Marketing targets for provide products and services • Develop Action plan to implement Agricultural marketing strategies. • Prepare Business plans to perform cost and benefit analysis

	• Apply marketing conditions to conducted Need assessment for products and service • Understand concept of contract farming to enhance market oriented production • Apply appropriate models to established contract farming • Contract farming requirement***s*** are identified and applied based on the organizational guide line • Established Contract farming systems based on the organizational standard
Required Knowledge and Attitude	Demonstrate knowledge of : • Principles of agricultural marketing to implement marketing strategy • Concept of agribusiness to apply agribusiness marketing • the roles of agribusiness to perform agricultural marketing. • Principles of agribusiness and strategies to implement Agribusiness marketing • Agricultural Marketing targets that provide products and services • Required resource to implement agricultural marketing • concept of contract farming to enhance market oriented production • appropriate models to established contract farming • Contract farming systems based on the organizational standard
Required Skills	Demonstrate Skills to : • Determine ***marketing options*** to design marketing plan • Implement Agricultural marketing strategies develop action plan • Identified Agricultural Marketing targets for provide products and services • Select ***Approaches*** of agricultural market to implement product and service. • ***Use segment descriptors*** to display the targets of agricultural market • Develop Action plan to implement Agricultural marketing strategies. • Prepare Business plans to perform cost and benefit analysis • Apply marketing conditions to conducted Need assessment for products and service • Organize customer feedbacks to improve Agricultural marketing services • Apply appropriate models to established contract farming • Contract farming requirement***s*** to applied based on the organizational guide line • Established Contract farming systems based on the organizational standard
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through:

	• Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal production Level I	
Unit Title	**Apply Basics of Human Nutrition Practices**
Unit Code	**AGR ANP1 08 0322**
Unit Descriptor	This unit covers the knowledge, skill and attitude required to categorize agricultural foods items, recognize malnutrition in the community, identify the role of agriculture in nutrition and contribute to the awareness creation of the community in utilization of agricultural products.

Element	Performance Criteria
1. Identify Categories of agricultural foods items	1.1. Basic ***terminologies and concepts*** in nutrition are identified and explained 1.2. ***Food groups, nutrient and their sources*** of balanced diet are identified and explained 1.3. ***Origin*** and composition of food stuffs are identified and described 1.4. ***Energy dense*** and ***nutrient dense*** food sources are identified and explained
2. Recognize malnutrition in the community	2.1. Physical signs of malnutrition are identified and explained 2.2. Forms, causes and consequences of ***malnutrition*** in different groups of community are identified 2.3. Measures to overcome malnutrition, importance of maintenance of adequate and balanced diet are promoted 2.4. Contribution is made in elders, family heads and women awareness creation programs
3. Identify the role of agriculture in nutrition	3.1. The role of agriculture as source of variety foods is recognized and promoted 3.2. The contribution of agriculture sector in nutrition sensitive intervention is described 3.3. ***Nutrition sensitive agricultural practices*** are identified and communicated as per the nutrition program guideline

4. Demonstrate diversified Agricultural food production and consumption techniques	4.1. Importance of diet diversification is identified and discussed with family holds and community according to the program guideline 4.2. Techniques of diversified food production are identified and demonstrated to farmers and family members 4.3. ***Techniques of enhancing*** the nutrient content of family foods are assessed and implemented according to the program guideline and cultural requirements of the rural community 4.4. Utensils are identified and cooking techniques demonstrated for specific agricultural products 4.5. PPE are selected and used in accordance to OHS requirement and code of ethics 4.6. Balanced and nutrient dense diet preparation is demonstrated using food stuff ingredients
5.Perform proper handling and storage of agricultural food products	5.1. Importance of ***hygiene*** for nutrition is explained 5.2. ***Storage facilities*** are identified and family holds supported in construction. 5.3. Agricultural products are ***safely handled and stored*** 5.4. Methods and techniques of safely handling and storing agricultural products are demonstrated in accordance products requirement
6.Document and report food production, consumption and difficulties	6.1. Diversified food production and consumption activities are documented 6.2. Difficulties happened in the processes are reported to the respective authorities.

Variable	**Range**
Terminologies and concepts	May include, but not limited to: • Food • Diet • Nutrient • Balanced Diet • Nutritious food

	• Hidden hunger • Malnutrition • Stunting • Underweight • Overweight • Nutrition • Diversification • Body growth • Body Development • Food fortification • Bioavailability • Food taboos • Window of opportunity • Fortification • Food security • Nutrition security • Small holder farmer • Cretinism
Food groups	May include, but not limited to: • Vegetables food group • Fruits food group • Legumes and nuts food group • Animal source food group • Fats oils and sweets food group • Staples food group
Nutrient and their sources	May include, but not limited to: • Carbohydrates • Lipids/Fats • Proteins • Minerals • Vitamins
Food origin	May include, but not limited to: • Animal • Plant
Energy dense	May include, but not limited to: • Calories • Nutrient

Nutrient dense	May include, but not limited to: • Vitamins • Minerals • Fibbers
Malnutrition	May include, but not limited to: • Under nutrition may be: ➢ stunting ➢ wasting ➢ underweight • Over nutrition may be: ➢ obesity ➢ overweight
Nutrition sensitive agricultural practices	May include, but not limited to: • Nutrition sensitive agricultural intervention • Diversification in: ➢ Production of fruits, vegetable, nutritious roots, cereals, pulse, and mushroom ➢ Animal source foods (Dairy, poultry, shoat, fish)
Techniques of enhancing	May include, but not limited to: • Fortification, • Germination, • Fermentation, • Roasting and Cooking
Hygiene	May include, but not limited to: • Food hygiene • Personal hygiene • Environmental hygiene
Storage facilities	May include, but not limited to: • Bins • Refrigerator • Shelf • Rack and Barn
Safely handling and storing	May include, but not limited to: • Sanitation • Ventilation

Evidence Guide	
Critical Aspects of Competence	Demonstrate knowledge and skills to: • Use utensils and prepare balanced nutrition • Distinguish and demonstrate energy dense and nutrients- dense foods and preparation techniques • Demonstrate food storing and preserving techniques • Explain the need for variety and diversification of foods • Explain agricultural food types, and sources • Describe forms, causes and consequences of excess or deficient intake of certain food types • Maintain personal hygiene to minimize risk to food product safety
Required Knowledge and Attitude	Demonstrate knowledge of: • Terminologies and concepts of nutrition • OHS requirements • Food groups and nutrient composition and diet requirement • Adequate and balanced diets • Agricultural food types, and sources • Need for variety and diversification of family diet with a variety of agricultural food products • Basic principles of producing quality/ nutritious agricultural products • Effect of food production and /or preparation on nutrient content of a variety of energy- dense and nutrients- dense foods • Child and maternal nutrition • Forms, causes and consequences of malnutrition • Basic food safety principles and requirements • Hygiene and food safety procedures • food safety recording requirements • Common hazards and sources of contamination in area of work • Legal and regulatory requirements pertaining to food production, storage, handling and packaging relevant to area of work • Personal hygiene practices and clothing requirements relevant

	to area of work.

Required Skills	Demonstrate skills to: • Categorize agricultural food items into major food groups based on their nutrient contents • Identify local varieties of animal and plant products, • Demonstrate production and /or preparation of nutrient rich diets • Communicate appropriate information with regard to diversified foods for pregnant women and children • Demonstrate various methods of integrated nutritious agricultural products production • Identify the consequences of excess or deficient intake of certain food types • Demonstrate how to enhance nutrient content using different food groups • Handle food .products to prevent damage, spoilage and waste • Identify hazards, contaminants and risks or control points • Document and report food safety hazards and risks to appropriate personnel • Store food products in appropriate areas at correct temperatures
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal production level I	
Unit Title	**Apply 5S Procedures**
Unit Code	**AGR ANP1 09 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to apply 5S techniques to his/her workplace. It covers responsibility for the day-to-day operations of the workplace and ensuring that continuous improvements of Kaizen elements are initiated and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	1.1. Work instructions are used to determine job requirements, including method, material and equipment. 1.2. Job specifications are read and interpreted following working manual. 1.3. ***OHS requirements***, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work. 1.4. ***Tools and equipment*** are prepared and used to implement 5S. 1.5. ***Safety equipment and tools*** are identified and checked for safe and effective operation. 1.6. Kaizen Board (Visual Management Board) is prepared and used in harmony with different workplace contexts.
2. Sort items.	2.1. Plan is prepared to implement sorting activities. 2.2. Cleaning activities are performed. 2.3. All ***items*** in the workplace are identified following ***the appropriate procedures***. 2.4. Necessary and ***unnecessary items*** are listed using the ***appropriate format***. 2.5. ***Red tag*** strategy is used for unnecessary items. 2.6. Unnecessary items are evaluated and placed in an appropriate place other than the workplace. 2.7. ***Necessary items*** are recorded and quantified using appropriate format. 2.8. Performance results are reported using appropriate formats. 2.9. Necessary items are regularly checked in the workplace.
3. Set all items in order.	3.1. Plan is prepared to implement set in order activities. 3.2. General cleaning activities are performed. 3.3. Location/Layout, storage and indication methods for items are decided. 3.4. Necessary tools and equipment are prepared and used for setting in order activities.

	3.5. Items are placed in their assigned locations. 3.6. After use, the items are immediately returned to their assigned locations. 3.7. Performance results are reported using appropriate formats. 3.8. Each item is regularly checked in its assigned location and order.
4. Perform shine activities.	4.1 Plan is prepared to implement shine activities. 4.2 Necessary tools and equipment are prepared and used for shinning activities. 4.3 ***Shine activity*** is implemented using appropriate procedures. 4.4 Performance results are reported using appropriate formats. 4.5 Regular shining activities are conducted.
5. Standardize 5S.	5.1. Plan is prepared and used to standardize 5S activities. 5.2. ***Tools and techniques to standardize 5S*** are prepared and implemented based on ***relevant procedures***. 5.3. Checklists are followed for standardize activities and ***reported*** to ***relevant personnel***. 5.4. The workplace is kept to the specified standard. 5.5. Problems are avoided by standardizing activities.
6. Sustain 5S.	6.1. Plan is prepared and followed to sustain 5S activities. 6.2. Tools and techniques to sustain 5S are discussed, prepared and implemented based on relevant procedures. 6.3. Workplace is inspected regularly for compliance to specified standard and sustainability of 5S techniques. 6.4. Workplace is cleaned up after completion of job and before commencing next job or end of shift. 6.5. Situations are identified where compliance to standards is unlikely and actions specified in procedures are taken. 6.6. Improvements are recommended to lift the level of compliance in the workplace. 6.7. Checklists are followed to sustain activities and report to relevant personnel. 6.8. Problems are avoided by sustaining activities.

Variable	**Range**
OHS requirements	May include, but not limited to: • Legislation/Regulations/Codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid,

	hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Tools and equipment	May include, but not limited to: • Paint • Hook • Sticker • Signboard • Nails • Shelves • Chip wood • Sponge • Broom • Pencil • Shadow board/Tools board
Safety equipment and tools	May include, but not limited to: • Dust masks/goggles • Glove • Working cloth • First aid and safety shoes
Items	May include, but not limited to: • Tools • Jigs/Fixtures • Materials/components • Machine and equipment • Manuals • Documents • Personal items (e.g. Bags, lunch boxes and posters) • Safety equipment and personal protective equipment • Other items which happen to be in the work area
The appropriate	May include, but not limited to:

procedures	• Steps for implementing 5S (sort, set in order and shine) activities. • Written, verbal and computer based or in some other format.
Unnecessary items	Are not needed for current production or administrative operation and include but not limited to: • Defective or excess quantities of small parts and inventory • Out dated or broken jigs and dies • Worn-out bits • Out dated or broken tools and inspection gear • Old rags and other cleaning supplies • Electrical equipment with broken cords • Out dated posters, signs, notices and memos • Some locations where unneeded items tend to accumulate • In rooms or areas not designated for any particular purpose • In corners next to entrances or exists • Along interior and exterior walls • Next to partitions and behind pillars • Under the eaves of warehouses • Under desks and shelves and in desk and cabinet drawers • Near the bottom of tall stacks of items • On unused management and production schedule boards • In tools boxes that are not clearly sorted
Appropriate format	May include, but not limited to: • All items, necessary and unnecessary items.
Red tag	A format prepared with a red color paper or card which is filled and attached temporarily on the unnecessary items until decision is made. The red tag catch people's attention because red is a color that stands out. So to fill and attach red tag on items, asks the following three questions: • Is this item needed? • If it is needed, is it needed in this quantity? • If it is needed, does it need to be located here?
Necessary items	Are required in the workplace for current production or administrative operation in the amount needed.
Shine activity	May include, but not limited to: • Inspection • Cleaning • Minor maintenance May include, but not limited to: ➢ Tightening bolts ➢ Lubrication and Replacing missing parts

Tools and techniques to standardize 5S	May include, but not limited to: • 5S Job Cycle Charts • Visual 5S • The Five Minute 5S • Standardization level checklist • 5S checklist • The five Whys and one How approach(5W1H) • Suspension • Incorporation and Use Elimination • 5S slogans • 5S posters • 5S photo exhibits and storyboards • 5S newsletter • 5S maps • 5S pocket manuals • 5S department/benchmarking tours • 5S months • 5S audit • Awarding system • Big cleaning day • Patrolling system May include, but not limited to: ➢ Top management Patrol ➢ 5S Committee members and Promotion office Patrol ➢ Mutual patrol ➢ Self-patrol • Checklist and Camera patrols
Relevant procedures	May include, but not limited to: • Assign 5S responsibilities • Integrate 5S duties into regular work duties • Check on 5S maintenance level • OHS measures such as signage, symbols / coding and labelling of workplace and equipment • Creating conditions to sustain your plans • Roles in implementation
Reporting	May include, but not limited to: • Verbal responses • Data entry into enterprise database • Brief written reports using enterprise report formats

Relevant personnel	May include, but not limited to: • Supervisors, managers and quality managers • Administrative, laboratory and production personnel • Internal/external contractors, customers and suppliers

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Discuss how to organize KPT. • Describe the pillars of 5S. • Discuss the relationship between Kaizen elements. • Implement 5S in own workplace by following appropriate procedures and techniques.
Required Knowledge and Attitudes	Demonstrates knowledge of: • Kaizen principle, pillars and concept • Key characteristic of Kaizen • Elements of Kaizen • Wastes/MUDA • Basics of KPT • Aims, benefits and principles of KPT • Stages of KPT • Structure and role of the components of Junior KPT • Concept and parts of Kaizen board • Concept and benefits of 5S • The pillars of 5S • Three stages of5S application • Benefits and procedure of sorting activities • The concept and application of Red Tag strategy • Relevant Occupational Health and Safety (OHS) and environment requirements • Benefits and procedure of set in order activities • Set in order methods/techniques • Benefits and procedure of shine activities • Inspection methods • Planning and reporting methods • Method of Communication • Benefits of standardizing and sustaining 5S • Tools and techniques to sustain 5S • Ways to improve Kaizen elements

	• Benefits of improving kaizen elements • Relationship between Kaizen elements
Required Skills	Demonstrates skills of: • Participating actively in KPT • Technical drawing • Communication skills • Planning and reporting own tasks in implementation of 5S • Following procedures to implement 5S in own workplace • Using sorting formats to identify necessary and unnecessary items • Improving workplace layout following work procedures • Preparing labels, slogans, etc. • Reading and interpreting documents • Observing situations • Gathering evidence by using different means • Recording activities and results using prescribed formats • Working with others • Solving problems by applying 5S • Preparing and using kaizen board • Preparing and using tools and equipment to implement and sustain 5S • Improving Kaizen elements by applying 5S • Standardizing and sustaining procedures and techniques to avoid problems • Procedures to standardizing 5S activities • Analysing and preparing shop layout of the workplace • Standardizing and sustaining checklists
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Level II

Occupational Standard: Animal production level II	
Unit Title	**Conduct Forage Development & Preservation**
Unit code	**AGR ANP2 01 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to conduct forage development & preservation to prepare site for forage development, undertake forage development activities, monitor forage growth and production, Perform harvesting and Preserve Forage and clean up on completion in forage development works.

Element	Performance Criteria
1. Prepare site for forage development	1.1. Forage development ***materials, tools, equipment and machinery*** are prepared in accordance with industries objectives 1.2. Site selection and land preparation are carried out according to production plan 1.3. ***Forage development options*** are determined according to production plan. 1.4. Risk factors are identified in forage development 1.5. Soil conditions are assessed for forage production suitability to meet production plan
2. Undertake forage development	2.1. ***Instructions and directions*** are followed and clarification sought when necessary. 2.2. Forage species to be developed are selected based on agro ecology 2.3. Site selection and land preparation are carried out in accordance with the industry requirements. 2.4. ***Forage development activities*** are undertaken in a safe and environmentally appropriate manner according to the industry guidelines 2.5. ***Seed treatment techniques*** are undertaken according to the industry guidelines

	2.6. ***Seasonal growth pattern*** of forage crop is recorded for harvesting time is determined according to production plan. 2.7. Pests, weeds and diseases ***controlled methods*** are set to develop quality forage.
3. Monitor forage growth and production	3.1. Longer term trends in weed, pest and disease incidence are determined and any necessary changes to control measures are monitored according to industry requirements. 3.2. Soil structure and erosion are monitored and necessary changes to cultural practices, grazing management and drainage are determined according to production objectives. 3.3. Irrigation and drainage systems are checked and scheduled regularly and maintained, according to guideline. 3.4. ***Grazing management*** is monitored to ensure high pasture and livestock production levels according to industry requirements 3.5. Forage maturity is monitored for harvesting to meet marketing and production targets.
4. Perform harvesting and Preserve Forage	4.1. Harvesting time/stage/ is determined according to forge characters to meet production plan 4.2. Harvested forage is stored in appropriate place and according to the industry. 4.3. Utilization of harvested and stored forage is determined according to the industry 4.4. ***Forage preservation methods*** are undertaken
5. Clean up on completion of work	5.1 ***Waste materials*** produced during forage development and preservation work are stored in a designated area. 5.2 Material, Tools, equipment and machinery are cleaned, maintained, handled, transported and stored according to the industry guidelines. 5.3 Difficulties in completion and work outcomes are reported to supervisor, feedback on performance is sought and any required improvements are noted for future action 5.4 Record keeping are carried out 5.5 Work outcomes are reported to the supervisor

Variable	Range
Forage development options	May include, but not limited to: • Legumes • Grass • Fodder trees • Composite/mixed forage/
Instructions and directions	May include, but not limited to: • Enterprise policies and procedures • Manufacturer instructions • Material Safety Data Sheets (MSDS) • OHS standards and procedures • Specifications for tools, equipment and materials • Standard Operating Procedures (SOP) • Verbal directions from manager or supervisor • Work instructions and standards • Work notes.
Forage development activities	May include, but not limited to: • Determining seeding rate • Maintaining forage • Land preparation • Seed selection • Seed treatment • Mulching • Sowing • Ploughing • Furrowing • Weed control • Transplanting • Fertilizer application • Irrigation /watering • Forage harvesting • Preservation
Seed treatments techniques	May include, but not limited to: • Chemicals • Physical • Biological

Seasonal growth patterns	May include, but not limited to: • Annual • Perennials • Biennials
Control Methods	May include, but not limited to: • Chemicals • Physical • Biological
Grazing management	May include, but not limited to: • Rotation • Cut and carrying • Continual • Deferred
Materials, tools, equipment and machinery	May include, but not limited to: • Disc harrow • Hammer • Fork • Lubricant • Fertilizer • Forage seed and seedling • Peg • Rope, empty sacks and plastic sheets • Urea, molasses, seed, seedling, green forage, • Hoe, Disc plough, harnesses, sickle, meter, axe/hammer, etc. • Tractor with its accessories, combine harvester, chopper, • Weighing scale, graduated cylinder, • Water pump, watering can, • Disk, barrel, spade, wheelbarrow, bailer, rack, hayfork, • Silo/pit, store
Preservation methods	May include, but not limited to: • Hay making, • Silage making, • Green chopping
Waste material	May include, but not limited to: • Broken rearing and farm items • Plant debris • Plastic, metal and paper-based materials
PPE required	May include, but not limited to:

	• Overalls • Guan • Gloves • Safety goggles • Plastics boots/shoes • Sunhats/Helmets • Nose protector
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tooling and equipment, • Workplace environment and safety handling of material, • First aid kit • Hazard control and hazardous materials and substances. • Using gowns, rubber boots of appropriate size, goggles, gloves etc, • Following OHS procedure designated for the task • Checking and fulfilling required safety devices before starting operation • Apply safe operating procedures regarding: ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors. • Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment, ➢ First aid application and site evacuation. Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors.
Work information	May include, but not limited to: • Procedures for disposing of waste materials, • Work instructions or verbal instructions from the supervisor.

Evidence guide	
Critical Aspects of Competence	Must demonstrate skills and knowledge to: • Identify, prepare and handle materials, tools and equipment for forage development and preservation • Set site selection criteria for forage development • Prepare land for forage development • Apply different seed sowing methods

	• Apply forage seed treatment techniques • Undertake forage development activities • Determine forage harvesting time • Harvest forage properly • Preserve forage in accordance with the respective preservation methods • Demonstrate safe work practices in all forage development and preservation work (activities) • Demonstrate safe manual handling and lifting techniques • Apply appropriate and safe manner of using PPE • Clean up materials, tools and equipment on completion of work • Record, document and report in standard format and procedure appropriate to the level or • Record work activities
Required Knowledge and Attitudes	Demonstrate knowledge of: • Site selection criteria • Types and uses of materials, tools, equipment and machineries required for forage development and preservation • Forage development and preservation option • Forage development activities and preservation techniques • Seed treatment and sowing methods • Forage development management and harvesting techniques • Stages of harvesting forage • Application of safe working practices • Materials, tools, equipment and machineries cleaning and storing techniques • Safe manual handling and lifting techniques • Recording, documenting and reporting procedures
Required skills	Demonstrate skills to: • prepare materials, tools, equipment and machineries for forage development and preservation work • Operate and maintain forage development and preservation equipment • Undertake in land preparation for forage development • Apply Seed treatment techniques • Apply weeds, pests and diseases control methods • Perform harvesting operations • Demonstrate safe manual handling and lifting techniques

	• Apply appropriate and safe manner of using PPE • Demonstrate safe work and handling of materials and equipment in work practices • Demonstrate relevant clean technique on completion of work • Use oral communication skills/language, use numeracy skills to estimate, calculate and record routine workplace measures • Record, document and report in standard format and procedure
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit Title	**Carryout Husbandry Practice of Ruminants**
Unit code	**AGR ANP2 02 0322**
Unit descriptor	This unit covers specifies the knowledge, skill and attitude required to Carryout Husbandry Practice of Ruminants that requires Prepare husbandry practices for ruminant, Undertake raising ruminant work and Handle and clean materials and equipment.

Elements	Performance Criteria
1. Prepare husbandry practices for ruminant	1.1. Required ***materials, tools and equipment*** are identified and checked for their functionality. 1.2. ***Housing type and facilities*** are prepared according to industry guideline. 1.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle. 1.4. Suitable ***PPE*** are selected and checked prior to use. 1.5. Work task is provided according to ***OHS*** requirements and supervisor ***instructions***
2. Undertake raising ruminant work	2.1. Instructions and directions provided by supervisor are followed and clarification is sought when necessary. 2.2. ***Husbandry practices*** are undertaken in a safe and environmentally appropriate manner and according to industry guidelines. 2.3. Enterprise policies and procedures in relation to workplace practices in the handling and disposal of materials are observed.
3. Handle and clean materials and equipment	3.1. ***Waste material*** produced during work is handled according to supervisor instructions. 3.2. Materials, tools and equipment are handled and transported according to supervisor instructions and industry guidelines. 3.3. Problems or difficulties in completing work to required standards or timelines are reported to supervisor. 3.4. Materials, tools and equipment are cleaned, maintained and stored according to manufacturer specifications and supervisor instructions.

Variable	Range
Materials, tools and equipment	May include, but not limited to: • Tractor • Motorbike/motorcycle • Weighing scale • Tattoo pliers • Hooves Trimmer • Dehorning saw • Dehorning wire • Crush • Hammer • Castration equipment /Burdizo • Ear tags • Ear tag applicator • Bull holder/ nose lead • Branding iron • Shovel • Wheel barrow • Mineral boxes • Waterier • Feeding trough • Milking pails/can • Spade • Fork • Hoe • Lubricant • Strip cup • Litmus paper • Towel • Fertilizer • Thermometer • Lactometer and Hygrometer • Heart girth • Meter (measuring tape) • Hand shears • Machine shearing hand pieces, • Foot baths

	• Dehorning equipment/dehorner • Drench guns • Vaccinating guns • Dips • Syringe and scales.
Housing type	May include, but not limited to: • Loose • Conventional
Housing facilities	May include, but not limited to: • Footbath • Thermometer • Physical environment • House • Water • Bedding material • Bedding area • Space allows • Lightning • Floor • Crush • Fences • Gates • Ventilation • Loading and unloading ramps • Deeping bath
PPE	May include, but not limited to: • Overalls • Gown • Gloves • Safety goggles • Plastic boots/shoes • Sunhats/helmets • Nose protector/respirator • Rain coat • Umbrella
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment,

	• Use of tools and equipment, • Workplace environment and safety handling of materials, • First aid kit • Following OHS procedure to control Hazard and hazardous materials/ substances. • Using gowns, rubber boots of appropriate size, goggles, gloves etc… • Following OHS procedure designated for the task • Checking and fulfilling required safety devices before starting operation • Apply safe operating procedures regarding: ➢ Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors. • Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment, ➢ First aid application and site evacuation. ➢ Electrical safety, ➢ Machinery movement and operation,
Instructions	May include, but not limited to: • Industry policies and procedures • Manufacturer instructions • Material Safety Data Sheets (MSDS) • OHS standards and procedures • Specifications for tools, equipment and materials • Standard Operating Procedures (SOP) • Verbal directions from manager or supervisor • Work instructions and standards • Work notes.
Husbandry practices	May include, but not limited to: • Feeding • Watering • Cleaning • Mating animal by natural system • Assist animal in normal parturition • Rearing new born animals • Milking • shearing

	• Foot clipping • Ear Tagging • Branding • Tattooing • Hooves trimming • Dehorning • Castrating • Transport and handle animals • Restraining techniques • Age estimation of ruminant • Grooming • Washing • Heat detection • Deeping
Waste material	May include, but not limited to: • Broken rearing and farm items • Plant debris • Plastic, metal and paper-based materials • Returned to manufacturer • Dung and urine • Spoiled milk • Clipped/Trimmed hooves • Dehorned horns

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare materials, tools, and equipment • Work safely around and with ruminants • Implement close castration, ear tagging, dental age estimation, hoof cutting/trimming, dehorning, Deeping, shearing, trocarization ,drenching, feeding ruminants.
Required Knowledge and Attitudes	Demonstrate knowledge of: • Preparing materials, tools, and equipment • The way of safely working with ruminants • Characteristics of ruminant animals • Importance of ruminant husbandry practices
Required skills	Demonstrate skills to:

	• Identify and use appropriate tools and equipment • Apply ruminants restraining techniques • Apply safe work practices • Carry out cleaning activities • Implement close castration, ear tagging, dental age estimation, hoof cutting/trimming, dehorning, Deeping, shearing, trocarization, grooming, milking, drenching, feeding ruminants
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit title	**Carryout Husbandry Practice of Poultry**
Unit code	**AGR ANP2 03 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to carry out husbandry practice of poultry. It also requires the ability to Prepare for husbandry practices of poultry, Undertake poultry raising activities and Handle and clean materials and equipment.

Element	**Performance Criteria**
1. Prepare for husbandry practices of poultry	1.1. Required ***materials, tools and equipment*** are identified according to lists provided and/or supervisor ***instructions***. 1.2. Checks are conducted on all materials, tools and equipment, and insufficient or faulty items are reported to supervisor. 1.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle. 1.4. Suitable ***PPE*** are selected and checked prior to use. 1.5. Work task is provided according to ***OHS*** requirements and supervisor instructions
2. Undertake poultry raising activities	2.1. Instructions and directions provided by supervisor are followed and clarification is sought when necessary. 2.2. ***Poultry raising activities*** are undertaken in a safe and environmentally appropriate manner and according to Industry guidelines. 2.3. Industry policies and procedures in relation to workplace practices in the handling and disposal of waste materials are observed.
3. Handle and clean materials and equipment	3.1. ***Waste material*** is handled according to supervisor instructions. 3.2. Materials, tools and equipment are handled according to-Industry guidelines. 3.3. Tools and equipment are cleaned, maintained and stored according to manufacturer specifications and supervisor

	instructions. 3.4. Problems or difficulties in completing the work to required standards or timelines are reported to supervisor. 3.5. Work outcomes are reported to supervisor, noted for future action.

Variable	**Range**
Materials, tools and equipment	May include, but not limited to: • Disinfectants • Feeds • Generator • Heater • Electric lamps • Incubator • Weighing scale • Pail • Feed scoop • Wheel barrow • Feed bin • Feed cart • Weighing scale • Waterer and feederer • Egg trays • Infrared bulb • brooder /hover • Debeaker • Layer cages • Knapsacks sprayer • Egg grader • Candler • Chick guard • Curtains • Rake • Spade/ Shovel • Jars • Dressing equipment

	• Portable coolers
	• Water pump
	• Nest
	• Perch
	• Hay box
	• Waste disposing equipment and areas
	• Litter materials such as:
	  ➢ Old newspaper
	  ➢ Saw dust
	  ➢ straw
	  ➢ Rice hulls
	  ➢ Coffee pulp

Instructions	May include, but not limited to: • Industry policies and procedures • Manufacturer instructions • Material Safety Data Sheets (MSDS) • OHS standards and procedures • Specifications for tools, equipment and materials • Standard Operating Procedures (SOP) • Verbal directions from manager or supervisor • Work instructions and standards • Work notes.
PPE	May include, but not limited to: • Overalls • Gloves • Safety goggles • Plastic boots/shoes • Sunhats
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tools and equipment, • Workplace environment and safety handling of material, • First aid kit • Follow OHS procedures to control Hazard and hazardous materials/ substances. • Using gowns, rubber boots of appropriate size, goggles, gloves etc, • Following OHS procedure designated for the task

	• Checking and fulfilling required safety devices before starting operation Apply safe operating procedures regarding: ➢ Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors. Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment, ➢ First aid application and site evacuation. electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors.
Husbandry practices of Poultry	May include, but not limited to: • Cleaning and disinfecting poultry shed • Egg selection • Candling • Incubating eggs • De-beaking • Brooding • Rearing • Feeding • Watering • Selection of poultry breeds for production
Waste material	May include, but not limited to: • Litter, sick and dead birds • Plastic, metal and paper-based materials

Evidence guide	
Critical aspects of competence	Must demonstrate knowledge and skills to: • Prepare materials, tools and equipment • Demonstrate safe work practice around and within poultry farm • Apply knowledge of debeaking, egg selection, candling, selection of poultry breeds for production, feeding and watering.
Required knowledge and attitudes	Demonstrate knowledge of: • Basic poultry husbandry practices • Identify materials, tools and equipment • Characteristics and importance of poultry • Types of poultry breed for production • Egg selection criteria

	• Site selection criteria
Required skills	Demonstrate skills to: • Prepare appropriate tools and equipment • Apply poultry debeaking, candling, breed selection for production, feeding, watering, sort normal and abnormal egg • Apply safe work practices. • Carry out cleaning activities
Resource implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and ohs practices.
Methods of assessment	Competence may be assessed through: • Interview/written test • Observation/demonstration with oral questioning
Context of assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit Title	**Raise Swine Production**
Unit code	**AGR ANP2 04 0322**
Unit Descriptor	This competence standard covers the knowledge, skills and right attitude required for carrying out swine production operations and monitoring housing facilities and growing environment. It requires the knowledge of swine production system, requirements in swine growing environments, and application of routine swine management activities.

Element	**Performance Criteria**
1. Identify and characterize swine production systems	1.1 Swine ***production systems*** are identified and characterized. 1.2 Suitable and feasible production system is selected/ recommended based on farming objective, environmental condition, financial resource, market demand and other factors.
2. Identify and select swine breeds	2.1. Commercial and non commercial swine breeds are identified and characterized 2.2. Criteria are set to select swine breed for specific production purposes 2.3. Specific breed is selected based on criteria settled and industry standards
3. plan for swine house construction and facilities	3.1. Rules of thumb to select site for house construction are recognized 3.2. Proper site is selected for house construction 3.3. Space requirement of different swine classes is determined 3.4. The house and farm layout is designed based on space requirement of the animals, topography and weather condition of the site 3.5. Materials required for house construction and facilities are identified and specified
4. Formulate ration for swine	4.1. Swine ***nutritional requirements*** and the nutritional value of available feedstuffs are identified 4.2. Decisions are made concerning dietary elements for particular rations. 4.3. ***Materials, tools and equipment*** suitable for ration formulation are selected, checked, and maintained if necessary. 4.4. ***Ingredients*** are identified from instructions and obtained from storage locations. 4.5. Ingredients are measured in the specified ratios and quantities.

	4.6. Where ***milling*** is required, it is done in the manner specified and using the appropriate equipment. 4.7. Ingredients are blended adequately and ***hygienically*** in the manner specified and using the appropriate equipment.
5. Manage different classes of swine	5.1. ***Routine swine management activities*** are identified and recognized. 5.2. Feed and water are Prepared and provided timely 5.3. Equipments, swine' house and it's environment are Cleaned 5.4. Swine health care activities are carried out in accordance with animal welfare requirements 5.5. Piglet rearing activities are carried out
6. Mate and prepare swine for parturition	6.1. Breeding stock is select based on the criteria settled 6.2. natural and artificial breeding are facilitated according to industry guidelines 6.3. pregnancy is diagnosed based on the principles 6.4. Care is needed for pregnant sows
7. carryout swine health care activities	7.1 The main swine diseases and parasites are identified 7.2 Swine health care activities are undertaken according to the industry standards
8. Monitor swine growing environment	8.1 Environmental parameters are monitored according to the production plan and adjustments made as required. 8.2 Hygiene procedures are monitored and adjusted according to industry guidelines. 8.3 Disposal of waste and debris is monitored to ensure it follows industry guidelines, and with due consideration of the environmental implications. 8.4 Feed is monitored to ensure the correct diet is offered to swine for optimum growing conditions according to industry procedures. 8.5 Feed is monitored to ensure fresh palatable feed is available to swine according to enterprise procedures. 8.6 All buildings and structures are inspected and checked for wear and tear. 8.7 Equipment for delivering water and feed is checked according to industry guidelines. 8.8 Equipment controlling the atmospheric environment is checked according to industry guidelines. 8.9 ***OHS*** hazards are identified, risk assessed and suitable controls implemented according to industry guidelines.

Variable	Range
Production systems	May include, but not limited to: • Production system is the way in which animals are kept and managed for specific purpose. In swine production, it is broadly categorized as: ➢ Extensive ➢ Semi intensive ➢ Intensive
Nutritional requirements	May include, but not limited to: • Nutritional requirement is the type and amount of nutrients required by specific animal for growing ,body maintenance, production and reproduction purposes
Materials, tools and equipment	May include, but not limited to: • Disinfectants • Feeds • Water • Pen for natural mating • Furrowing equipment • Castration equipment • restrain Material • forceps • teeth clipper • Surgical blade • Weight balance
Ingredients	May include, but not limited to: • The mix might consist of prepared and formulated proprietary rations, liquid feeds, whole grains, protein additives, and/or vitamins and minerals.
Milling	May include, but not limited to: • Hammer milling and roller milling.
Hygienically	may include: • Rodent control, dust management, no rat or bird fecal contamination of feeds or raw ingredients, and feed not being wet.
Routine swine management activities	May include, but not limited to: • Feeding • Watering • Cleaning the house, equipment and environment • Castration • Restraining the animals for specific purposes

	• Transporting • Weighing • Vaccinating etc • Facilitate mating • Assist sow in parturition • Rearing piglet • Teeth clipping
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tooling and equipment, • Workplace environment and safety handling of material, • first aid kit • Hazard control and hazardous materials and substances. • Using gowns, rubber boots of appropriate size, goggles, gloves etc, • Following OHS procedure designated for the task • Checking and fulfilling required safety devices before starting operation • Apply safe operating procedures regarding: ➢ Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors. • Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment, ➢ First aid application and site evacuation. Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Carry out swine production activities • Supervise swine house and housing facilities • Monitor swine growing environment • Prepare materials, tools and equipment for swine raising • Carry out feeding, watering, restraining, transporting, vaccination, castration, teeth trimming and tail clipping

Required Knowledge and Attitudes	Demonstrate knowledge of: • Swine production systems • Criteria for selecting swine breed for specific production purposes • The nutritional requirements of different swine classes • Identify the main swine diseases and parasites • Requirements for swine handling and/or accommodation facilities • Swine animal handling techniques • Parturition of swine • Mating of swine • Unique characters of swine
Required skills	Demonstrate skills to: • Apply appropriate tools and equipment • Apply feeding, watering, restraining, transporting, vaccination, castration, teeth trimming, tail clipping • Select productive swine breed for specific production purposes • Implement criteria for selecting suitable site for swine establishment • Determine the area of house for a number of swine based on their space requirements • Design swine house and farm layout based on topography and weather condition of the area • Formulate ration for different classes of swine • Undertake routine management activities for different classes of swine • Monitor swine house, facilities and growing environment • Apply safe work practices
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit Title	**Perform Husbandry Practices of Draft Animal**
Unit code	**AGR ANP2 05 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to Perform husbandry practices of draft animal. It also requires the ability to prepare and handle materials, tools and equipment for the work and clean up on completion of work.

Element	Performance Criteria
1. Prepare and provide house and work for draft animals	1.1. Required buildings or housing are/is provided for draft animal based on their space requirements. 1.2. Feeding and watering to draft animals are applied appropriately. 1.3. Work to be undertaken is interpreted and confirmed with management. 1.4. ***Material, tools and equipment*** suitable for the work to be undertaken are selected, checked, and maintained if necessary. 1.5. Suitable ***PPE*** are selected, used and maintained.
2. Perform daily work program	2.1. Work program for each stable animal is carried out as instructed by the stable manager. 2.2. Draft animals are selected and prepared for professional services. 2.3. Supervisor is contacted as required by ***organizational procedures*** or supervisors instructions according ***selection criteria***. 2.4. Draft animals are prepared for specified daily work program as required by organizational procedures or supervisors instructions. 2.5. Draft animals are washed down after working, dried, rugged, returned to their stable and fed. 2.6. Work routines and performance ***records*** are kept and maintained as an integral part of the stable business.
3. Select, catch and tie up	3.1 Individual characteristics of draft animals are identified

draft animals	according to specified criteria and nominated animals are selected. 3.2 Selected draft animal is ***caught*** quickly and gently and ***working gear*** is fitted. 3.3 Legs and hooves of selected draft animals are inspected for abnormalities, cuts or damage. 3.4 Draft animal is led to work area or rail quietly and calmly and safely ***secured***. 3.5 While handling the draft animal, ***OHS hazards*** are continually identified, risks assessed and suitable controls implemented. 3.6 Draft animals are handled safely within the organizations and industry guidelines for animal health and welfare.
4. Clean and maintain stable gear and surrounding areas	4.1 All gear is regularly checked for wear and damage. 4.2 Gear is thoroughly cleaned and polished and oils or preservatives are applied as required according to stud practice. 4.3 Working gear is maintained or repaired as required to ensure safe draft animal working conditions. 4.4 Working gear and saddlers is cleaned and stored after use in line with organization policy. 4.5 . Buildings or fixtures that are in need of maintenance or/ are unsafe are reported to the stable management.
5. Monitor health and welfare of horses	5.1. Signs of good health are identified. 5.2. Draft animal is checked for condition, ***health and soundness*** and removed from stable or secured appropriately. 5.3. Identify symptoms of common ***illnesses and injuries***. 5.4. Manure, stale feed and soiled ***bedding*** are inspected; removed and abnormal conditions are reported and/or disposed. 5.5. Feed bin, hay nets/bins and water troughs are cleaned thoroughly and troughs are filled with fresh water. 5.6. Walkways are swept and/or raked and/or removed. Provide basic first aid to minor injuries under supervision

Variable	Range
Material, tools and equipment	May include, but not limited to: • For dressing and balancing hooves, equipment such as hoof picks, knives, rasps, pincers, brushes, and hoof dressings. • Wheel barrow, spade, pail/ feed bucket, vaccination kits, livestock cradles, training yard, livestock restraining equipment, crush, feeding and watering trough , ear tag applicator, knapsack sprayer, drench gun, hoof trimmer, weighing scale, overhead gantry, etc. • Different feed types, clean water, ear tag, washing brushes, needles, cleaning materials (detergents, disinfectants, washing brushes, broom, water etc …), foot baths, dips, jetting guns, antibiotics, vaccinations, drenches, faeces collection plastic bags, plastic gloves, etc.
PPE	May include, but not limited to: • Overalls and gloves • Ear protection • Safety goggles • Steel capped boots/shoes • Helmet • Gloves • Protective eyewear • Hearing protection • Respirator or face mask • Sun protection /sunhats
Organizational procedures/Instructions	May include, but not limited to: • Variable written and graphical instructions, work bulletins, data sheet, diagrams or sketches • Industry policies and procedures • Occupational health and safety manual • Industry/workplace codes of practice • Organization operating procedures • Manufacturer instructions • Material safety data sheets (MSDS)

	• OHS standards and procedures • Specifications • Standard operating procedures (SOP) • Verbal directions from manager or supervisor • Work instructions and standards • Work notes • Safety work procedures/manual and material safety data sheets • Workplace guidelines/ workshop manuals • Manufacturer's diagrams, charts • Manufacturer's catalogue/specification manual. • Manufacturer's service and operation manuals • Design specification manual • Repair request documentation ,job cards, • Manufacturing and designing specifications and instructions • Records and reports • Virtual library(electronic media)
Selection criteria	May include, but not limited to: • Breed or breed-cross • Age • Sex • Condition • Color and markings • Brands or tattoos • Examining for lameness, sore eyes, sore mouth, girth galls, back conditions, mud, caked sweat or vegetable matter, damaged feet or lower limbs, localized or systemic infections
Records	May include: • Either paper-based or digital and information will be recorded

	into logbooks or other records. • Information recorded may be dates, times and periods of work, maintenance that is required for stables and/or equipment, work schedules and work completed, chemicals and other substances used including quantities and methods, and readings from temperature and flow-rate gauges.
Caught	May include, but not limited to: Stables, yards or paddocks.
Working gear	May include, but not limited to: • Saddles • Ropes • Reins • Breastplates • Martingales • Bridles • Cruppers • Saddlebags • Headstalls • Saddlecloths • Feeders • Leads and Rugs.
Securing	May include, but not limited to: • Securing animals by using rearing bit, war bridle, blindfold, twitch, neck skin hold, leg strap, hobbles, and sidelines.
OHS Procedures	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tools and equipment, • Workplace environment and safety handling of material, • Use of firefighting equipment, enterprise first aid,

	• Following OHS procedure to control Hazard and hazardous materials/ substances. • Using gowns, rubber boots of appropriate size, Goggles, respirators, cap, and head phones , gloves etc, • Following Occupational health and safety procedures designated for the task • Checking and fulfilling required safety devices before starting operation • Apply safe operating procedures regarding: ➢ electrical safety, ➢ machinery movement and operation, ➢ manual and mechanical lifting and shifting, ➢ working in proximity to others and site visitors • Apply emergency procedures : ➢ emergency shutdown and stopping of equipment, ➢ using extinguishing fires, First aid application and site evacuation.
Health and soundness	May include, but not limited to: • Cuts, breaks, colds, punctures, colic, abrasions, tying up, bleeders, acidosis, distress, hoof pricks, stone bruises, quarters, abscesses, allergic reactions, quarter cracks, bowed tendons, abnormal temperature, insect bites, animal bites, diarrhea, dehydration, founder, O-edema, pneumonia, skin infections, strangles, worms.
Illnesses and injuries	May include, but not limited to: • Cuts • Breaks • Colds • Punctures • Colic • Abrasions • tying up

	• Bleeders • Acidosis • Distress • Hoof pricks • stone bruises • Quarters • Abscesses • Allergic • Reactions • Quarter cracks • Bowed tendons • Abnormal temperature • Insect bites • Animal bites • Diarrhea • Dehydration • Founder • O-edema, • Pneumonia, • Skin infections • Strangles, worms
Bedding	May include: • Sand, rice hulls, straw, wood shavings/sawdust may all be used for bedding materials.
Contractors	May include, but not limited to: • Veterinarians, animal dentists, or transporters.

Evidence guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Provide house and prepare to work with Draft animals • Clean stables and surrounding areas • Perform daily work program • Perform ride, train, feeding, watering draft animals • Select, catch and tie up draft animals • Clean and maintain stable gear • Monitor health and welfare of draft animals

Required Knowledge and Attitudes	Demonstrate knwledge of: • Characteristics of draft animals • Draft animal handling and restraining methods • Environmental codes of practice with regard to draft animals • Selection criteria for professional draft animals • OHS is applied in all procedures • Handling techniques and restraint methods • Selection and identification procedures of nominated draft animals
Required skills	Demonstrate skills to: • Apply work safety • Apply restraining, handling and feeding procedure • Skills in using and handling of tools and equipment • Communicate effectively • Provide care in the handling of draft animals
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit Title	**Raise Fish Production**
Unit Code	**AGR ANP2 06 0322**
Unit Descriptor	This unit specifies the knowledge, skills and attitude required to raise fish production. It also requires the ability to prepare for fish raising activities, participate in construction or installation work, undertake fish farming work and handle and clean material and equipment.

Element	Performance Criteria
1. Prepare for fish raising activities	1.1. Required ***materials***, ***tools and equipment*** are identified according to lists provided and/or supervisor ***instructions***. 1.2. Checks are conducted on all materials, tools and equipment, and insufficient or faulty items are reported to supervisor. 1.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle. 1.4. Suitable ***PPE*** are selected and checked prior to use. 1.5. Work support is provided according to ***OHS*** requirements and supervisor instructions. 1.6. Site selection ***criteria*** are assessed
2. Participate in construction or installation work	2.1. Construction tasks relevant to the ***Farm Stock structure*** being built or installed are undertaken as indicated in the construction work plan. 2.2. Pond type and size is determined according to production plan 2.3. ***Pond lay out*** is carried out according to the enterprise requirements. 2.4. Pond is ***excavated*** and constructed according to the layout of the enterprise. 2.5. ***Fixtures and fittings*** are assembled and fixed, and construction works are finished according to construction work plan. 2.6. Water supply and disposal systems are constructed

3. Undertake fish farming work	3.1 Instructions and directions provided by supervisor are followed and clarification is sought when necessary. 3.2 ***Fish farming activity*** is undertaken in a safe and environmentally appropriate manner and according to industry guidelines. 3.3 Problems or difficulties in completing work to required standards or timelines are reported to supervisor. 3.4 Fish feed **sources** or **types** are identified
4. Handle and clean material and equipment	4.1. ***Waste material*** produced during work is handled according to supervisor instructions. 4.2. Materials, tools and equipment are handled and transported according to supervisor instructions and industry guidelines. 4.3. Materials are returned to store or disposable materials are disposed of according to supervisor instructions. 4.4. Tools and equipment are cleaned, maintained and stored according to manufacturer specifications and supervisor instructions. 4.5. Work outcomes and difficulties in completing work are reported to supervisor, feedback on performance is sought and any required improvements are noted for future action. 4.6. Clean and safe work site is maintained while working.

Variable	**Range**
Materials, tools and equipment	May include, but not limited to: • Lime • Feed • Fertilizer • Sack • Buckets • Weighing balance • loaders and vehicles • Spades, forks, rakes and hoes • Spray equipment

Instructions	May include, but not limited to: • Fish and Fishery Product Quality Assurance Program (FPQAP) • Enterprise policies and procedures • Manufacturer instructions • Material Safety Data Sheets (MSDS) • OHS standards and procedures
PPE	May include, but not limited to: • Plastic boots • Sunhats • Sunglass • Sunscreen creams • Gown • Overalls • Raincoat • Gloves
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Workplace environment and safety handling of materials, tools and equipment • Use of firefighting equipment and industry first aid kits, • Following OHS procedure to control hazard and hazardous materials/substances • Following OHS procedures designated for the task accomplished. • Checking and fulfilling required safety devices before starting operation Apply safe operating procedures regarding: ➢ Electrical safety, ➢ Machinery movement and operation, ➢ Manual and mechanical lifting and shifting, ➢ Working in proximity to others and site visitors • Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment ➢ Using extinguishing fires ➢ First aid application and site evacuation.

Criteria	May include, but not limited to: • Topography • Soil type • Availability of water • Market availability
Fish farming activities	May include, but not limited to: • Pond preparation • Liming • Filling the fish culture with water • Fertilizer application, • Feeding
Sources or types	May include to: • Natural and • Artificial feed
Waste material	May include, but not limited to: • Waste water, chemicals, dead fish, aquatic weeds, pond mud, and broken components • Plant debris • Plastic, metal and paper-based materials • All these wastes will be either disposed according to industry work procedures or recycled or re-used or returned to manufacturer.

Water supply and disposal systems	May include, but not limited to: • Intake structure support screens • Channels, canals, or trenches (can be earthen, concrete or plastic lined) • Roaded banks • Spill ways • Siphon, including reducing diameter pipes • Hose • Pipes (can be metal, pvc, rubber, concrete or polyethylene/ polypropylene) pressure or sewage rating • Sumps • Pumps, bores, windmills • Storage dams or reservoirs • Sediment dams • Sprays • Flow meters, pressure gauges • Float switches, solenoids • Header tank • Settlement tank • Non-return mechanisms • Depth gauges • Sieves, filters or other mechanical, chemical or • Biological treatment structures • Flow control devices (taps, valves, float valves, monks, dykes, weirs, gates)

Farm structure	May include, but not limited to: • Building • Green houses, hot houses, igloo • Fences • Jetties • Parking areas • Moorings • Ramp • Waste holding disposal structures • Water supply and effluent systems, pipes and channels • Tank, pump and blower stands • Tracks, roads and path ways • Soil conservation works • Equipment storage • Shelters and shade cloth • Security systems • Surrounding grounds/gardens

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare and handle materials, tools and equipment for fish farming • Construct or install stock pond, aquarium • Carry out basic fish farming activity
Required Knowledge and Attitudes	Demonstrate knowledge of: • Site selection of fish farm • Types and size of fish culture • Identification of fish farm facilities • Principles and components farm structures • Principles of structural design of pond /cage/ pen/thank • Lime pond, fertilize pond, feeding of fish, • General cleaning and maintenance of equipment and vessel.
Required skills	Demonstrate skills to: • Appropriate use of fish farm tools and equipment • Perform correct liming, fertilizing of pond, water filling procedures,

	• Carry out parts of pond, tank, pen, and cage culture techniques • Perform fish feeding
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit title	**Carryout Beekeeping Operation**
Unit code	**AGR ANP2 07 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to carry out beekeeping operation.

Elements	Performance Criteria
1. Prepare for beekeeping work	1.1. Required ***materials, tools and equipment*** are identified according to lists provided and/or supervisor ***instructions***. 1.2. Checks are conducted on all materials, tools and equipment, and insufficient or faulty items reported to supervisor. 1.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle. 1.4. Suitable ***PPE*** are selected and checked prior to use. 1.5. Work support is provided according to ***OHS*** requirements and supervisor instructions.
2. Undertake beekeeping work	2.1. Instructions and directions provided by supervisor are followed and clarification is sought when necessary. 2.2. ***Beekeeping work*** is undertaken in a safe and environmentally appropriate manner and according to industry guidelines. 2.3. Interactions with other staff, apiary site owners and customers are carried out in a positive and professional manner. 2.4. Problems or difficulties in completing work to required standards or timelines are reported to supervisor.
3. Identify and plant honey bee flora	3.1 Identification of **honeybee flora** for providing nectar and pollen is carried out according to industry requirements 3.2 Bee floral calendar is confirmed in to appropriate beekeeping operations 3.3 A basic nutritional need of honey bee is assessed as required by industry requirements. 3.4 Conditions affecting plants for honey bee is identified accordingly

4. Handle and clean material and equipment	4.1 ***Waste material*** produced during work is handled according to supervisor instructions. 4.2 Materials, tools and equipment are handled and transported according to supervisor instructions and industry guidelines. 4.3 Materials are returned to store or disposed of according to supervisor instructions. 4.4 Tools and equipment are cleaned, maintained and stored according to manufacturer specifications and supervisor instructions. 4.5 Work outcomes and difficulties in completing work are reported to supervisor, feedback on performance is sought and any required improvements are noted for future action.

Variable	**Range**
Materials, tools and equipment	May include, but not limited to: • Development tools and equipment such as traditional hive, transitional and frame hive • Sack • Honey bee feeds • Cooking dish/pot • Embedder/Transformer • First aid kits • Queen excluder • Water sprayer • Wax extractor • Homogenizer • Pollen trap • Solar wax extractor • Fire extinguisher • Detergents • Bee smoker • Hive tool/Chisel • Bee Brushes • Feeder frames • Hive fastening belt • Bowel

	• Buckets • Brooms • Wheelbarrows • Hoses and hose fittings • Ladle • Knives • Casting mould • frame wire, • Spades • Shovel • Forks • Rakes • Hoes • Spray equipment • Cleaning equipment • Stationery • Bin card • Weighing scale • Grinder
Instructions	May include, but not limited to: • Honey bee industry quality assurance program • Industry policies and procedures • Manufacturer instructions • Material Safety Data Sheets (MSDS) • OHS standards and procedures • Specifications • Standard Operating Procedures (SOP) • Verbal directions from manager or supervisor • Work instructions and standards • Work notes.
PPE	May include, but not limited to: • Bee veils • overall (beekeeper suit) • Bee-proof • gloves • Rubber boots/ leather shoes • Sunhat

OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tooling and equipment, • Workplace environment and safety handling of material, • Use of firefighting equipment, industry first aid, • Following OHS procedure to control hazard and hazardous materials/substances • Using gowns, rubber boots of appropriate size, and gloves etc, • Following OHS procedures designated for the task • Checking and fulfilling required safety devices before starting operation Apply safe operating procedures regarding: • Electrical safety, • Machinery movement and operation, • Manual and mechanical lifting and shifting, • Working in proximity to others and site visitors. Apply emergency procedures: • Emergency shutdown and stopping of equipment, • Using extinguishing fires, • First aid application and site evacuation.
Beekeeping work	May include, but not limited to: • Apiary site selection • Prepare apiary site • Identify types of beekeeping system • Beehive Construction • Frame wiring • Melting wax or wax processing • Wax pressing • Comb foundation sheet making and attaching • Handling colony • Fencing • Assembling /disassembling • Making and attaching foundation sheet to frame • Weeding and clearing the site • Identifying and planting honey flora specie • Honey plant production and Protection • Loading and unloading required equipment's

	• Storing • Guarding • Construction of shade and the bed • Prepare the protective equipment's • Prepare and use bee smoker • Attractive baiting material
Honey bee flora	May include, but not limited to: • Native or introduce species including weeds • Plants will comprise those commonly encounter within industry work place
Basic nutritional needs	May include, but not limited to: • Protein, carbohydrate, mineral, fates/lipid, vitamins, and water • Supplementary feeds
Condition affecting plants	May include, but not limited to: • Soil ,Ph., moisture condition etc
Waste material	May include, but not limited to: • Litter and broken components • Plant debris • Plastic, metal and paper-based materials be disposed of according to industry work procedures • Recycled • Returned to manufacturer • Re-used • Comb attacked by wax moth, dead brood
Hazards	May include, but not limited to: • Bee stings • Chemicals and hazardous substances • Dust, noise, airborne and soil-borne micro-organisms • Holes and slippery and uneven surfaces • Incorrect manual handling • Sharp hand tools and equipment • Presence of wildlife • Solar radiation

Evidence Guide

Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Identify obtaining requirements to establish apiary • Identify criteria for apiary site selection. • Identify and prepare materials, tools and accessories for beekeeping activities. • Identify types of bee hives. • Beehive components. • Handling beekeeping materials, tools and equipment/accessories. • Use of beekeeping tools and accessories for beekeeping activates. • Carry out work according to instructions and within the required timelines • Work safely around and with bees • Carry out, wax melting, comb foundation sheet making. • Identify honey bee flora • Recognize the range of honey bee flora specific to the industry, and describe their attributes, main purpose within the industry, specific handling requirements and growth requirements.

Required Knowledge and Attitudes	Demonstrate knowledge of: • Site selection criteria • Appropriate materials, tools and equipment • Hive crops • Maintenance of hive and apiary. • Bee-handling techniques. • Beehive components • Repair and maintenance of buildings, fences, fixtures or fittings. • Safe work practices
Required skills	Demonstrate skills to: • Determine Site Selection Criteria • Prepare materials, tools and equipment for beekeeping work. • Make comb foundation sheet, • Feeding supplementary feeding for bees. • Maintaining hive and apiary. • Carry out work according to instructions and within the

	required timelines. • Assembling beehive components. • Work safely around and with bees. • Undertake beekeeping work. • Handling materials and equipment. • Cleaning up on completion of work.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit Title	**Perform Sericulture Development**
Unit code	**AGR ANP2 08 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to raise sericulture. It requires the ability to prepare and handle materials, tools and equipment for sericulture work activities and clean up on completion of work.

Element	Performance Criteria
1. Identify the morphology and characterize the physiology of silk worms	1.1 All required materials, tools, equipment and ***Personal Protective Equipment (PPE)*** are identified. 1.2 Grain age seed production is implemented and Hibernation of silkworms eggs considerations are identified 1.3 Acid treatment for diapausing eggs activities is carried out 1.4 The life cycle of silkworms is studied at each stage and the morphology of silkworms is identified in accordance with cocoon yield and quality. 1.5 Comparative study of mulberry and non-mulberry silkworms are carried out at different lifecycle stages and digestive and excretory systems are identified 1.6 Silk glands, reproductive system, rrespiratory system and nnervous system are identified
2. Prepare materials, tools and equipment for sericulture development activities	2.1. Required ***materials***, tools and equipment are identified according to lists provided. 2.2. Checks are conducted on all materials, tools and equipment, and insufficient or faulty items are reported to supervisor. 2.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle. 2.4. Suitable PPE are selected and checked prior to use. 2.5. Work support is provided according to ***OHS*** requirements
3. Undertake Sericulture development work	3.1. ***Seri-culture development activities*** are undertaken in a safe and environmentally appropriate manner and according to industry guidelines. 3.2. Interactions with other staff, in Seri-culture development

	areas, owners, stakeholders and customers are carried out in a positive and professional manner. 3.3. Problems or difficulties in completing work to required standards or timelines are reported to supervisor.
4.Treat plant pests, diseases and disorders and carry out post treatment operations	*4.1.* Feed plant pests, diseases and disorders , ddetails of them and ttreatment methods are recognized , recorded and selected in consultation with the supervisor 4.2.Treatments are prepared and applied according to Occupational health and safety and regulatory requirements 4.3. Equipment is cleaned , wastes are disposed and Records are maintained according to industry guidelines
5. Treat moth, pupae, larvae , egg pests , diseases and carry out post treatment operations	5.1. Egg, larvae, pupae and moth pests and diseases, details of them and treatment methods are recognized, recorded and selected. 5.2. Treatments are prepared , applied according to Occupational Health and Safety and regulatory requirements 5.3.Equipment is cleaned , waste is disposed and records are maintained according to industry guidelines
6. Handle and Clean materials, tools and equipment	6.1.***Waste materials*** produced during work are handled according to supervisor instructions. 6.2.Materials, tools and equipment are handled and transported according to industry guidelines. 6.3. Clean and safe work site is maintained while working 6.4.Materials are returned to store or disposable materials are disposed. 6.5.Work outcomes are reported to supervisor, feedback on performance is sought and any required improvements are noted for future action

Variable	**Range**
PPE	May include, but not limited to: • Overalls • Gloves • Safety goggles • Plastic boots/shoes • Sunhats • Nose protector

	• Helmet
Materials	May include, but not limited to: • White birds feather • Local mountages (dried leaves of banana/enset, mango, eucalyptus) • Karika (egg card and egg case) • Disinfecting materials(formalin, bleach, lime) • Nylon string • Plastic tube for watering • Chopsticks • Alcohol • Pegs • Empty sacks • Plastic bag for seedlings • Paper bags • Tissue paper • Cleaning supplies/detergents • Brooms • Log sheet (record book) • Lumber and plywood • Hard card board • Bamboo basket • Markers • Cheese cloth • Black sheet cloth • Bamboo tray • Hand washing tray/towel • Paraffin paper • Foam pad • News paper • Refrigerator • Balance • Brushes • Ruler • Stirrer • Beaker • Petri-dish

	• Dropper • Graduating cylinder • Test tubes • Buckets, • Wheelbarrows • Hoses and hose fittings • Shovel, spades, forks, rakes and hoes • Tray(rearing/feeding and seed) • Modern montage (made of wood, bamboo, collapsible cartoon and plastic) • Rearing and feeding stand • Cleaning net • Pruning scissor and saw • Measuring tape • Thermometer(dry and wet bulb) • Humidity recorder with chart • Hammer, saw, nail • Forceps • Hand lens • Egg counter • Chopping knife and chopping board • Hand sprayer • Hydrometer • Plano-meter • Leaf chamber • Electric heater or charcoal • Ventilator • Foot cleaning tray • Water bath • Centrifuge • Incubator • Microscope • Moth crushing set • Local reeling machine • Cellules • Stop watch • Basin stand

	• Ants well • Feeding basin • Hygrometer • Mounting board • First aid kit • Black paper • Filter paper • Candle box • Pesticide applicators • Killing jar
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tooling and equipment, • Workplace environment and safety handling of material, • First aid kit • Hazard control and hazardous materials and substances. • Using gowns, rubber boots of appropriate size, goggles, gloves etc, • Following OHS procedure designated for the task • Checking and fulfilling required safety devices before starting operation • Apply safe operating procedures regarding: ➢ Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors. • Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment, ➢ First aid application and site evacuation. Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors.
Seri-culture development activities	May include, but not limited to: • Undertake feed plant propagation • Rearing house construction • Preparation for rearing(room/shed and equipment cleaning and disinfecting) • Provide daily care for silk worms • Incubating eggs/drainage • Mate and monitor reproduction of moths

	• Cocoon harvesting and sorting • Reel and spin cocoon to produce silk • Hibernation schedules, temperature and humidity • Schedule of acid treatment and preservation of eggs • Identifying the external body structures of silkworms at different stages • Identifying four stages of silkworms egg, larva, pupa and moth • Collect and record production data
Waste material	May include, but not limited to: • Litter, sick and dead silkworms • Dead pupae • Broken rearing and farm items • Plant debris • Plastic, metal and paper-based materials • Moulted skins

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare materials, tools and equipment • Carry out cocoon harvesting , sorting, daily care for silk worms, • Assist silkworm feed plant propagation • Work safely around and with silkworms • Apply knowledge of silkworm seed techniques, morphology, and physiology • Apply treatments to plant pests, diseases and disorders based on the type, symptom, causal agent and preventive methods • Carryout post treatment operations • Prepare and apply treatments to moth, silkworm and egg pests and diseases • Carry out post treatment operations
Required Knowledge and Attitudes	Demonstrate knowledge of: • Appropriate tools and equipment • Repair and maintenance equipments • Characteristics of silk worm • Silkworm plant feed propagation • Silkworm reproduction cycle.

	• Silk worm handling techniques • Safe work practices. • Recognition of common plant pests, diseases and disorders for a particular enterprise/situation. • Different types of control measures and their principles. • Mode of action of different chemicals. • OHS responsibilities of employees. • Environmental considerations when using chemicals for plant pest, disease and disorder control. • Recognition of common moth, silkworm and egg pests and diseases for a particular enterprise/situation. • Different types of control measures and their principles...
Required skills	Demonstrate skills to: • Undertake cocoon collection ,prepare mountage, treatment of eggs • Undertake repairing and maintenance equipment • Apply preservation of silkworm feed leafs • Undertake chopping of silkworm feeds leafs according to rearing • Apply feeding of silkworm • Using appropriate tools and equipment • Applying silk worm handling techniques • Applying safe work practices • Use appropriate tools and equipment • Apply silkworm feed plant agronomy techniques • Read and interpret chemical labels and manufacturers specifications for setting up equipment, and maintain spray records. • Treat plant pests and diseases & moth, silkworm and egg pests and diseases. • Carry out post treatment operations.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated

	work place setting.

Occupational Standard: Animal Production Level II	
Unit title	**Conduct Crop Residues Treatment and Urea Molasses Block**
Unit code	**AGR ANP2 09 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to conduct crop residues treatment and Urea molasses block making for different types of crop residues and ingredients.

Element	Performance Criteria
1. Determine the type of crop residues	1.1. The types *of* ***crop residues*** that are consumed by different species of ***livestock*** but are less palatable and digestible are identified. 1.2. The amount of crop residues to be treated is determined and prepared. 1.3. Suitable ***personal protective equipment (PPE)*** is selected, used and maintained in accordance with OHS requirements
2. Determine the method of treatment	2.1. The comparative advantage of the different ***types of treatments*** is assessed. 2.2. The appropriate type of treatment that suits the industry requirement is selected 2.3. The appropriate ***ingredients*** used for treatment are prepared
3. Prepare appropriate packing material for treatment	3.1. The type of ***packing materials and equipment*** used for crop residue treatment is determined in relation to the amount of crop residue to be prepared. 3.2. The packing materials and equipment are prepared

4. Complete treatment and store	4.1. Treatment of the crop residue is performed according to the procedures and the industry guideline. 4.2. A clean and safe area is maintained during and on treating of the crop residues in accordance with OHS and industry requirements. 4.3. The treated crop residue is properly stored for a recommended time before use based on the type of treatment and weather condition 4.4. Livestock groups to be fed the treated crop residue are determined according to treatment types. 4.5. A clean and safe area is maintained during and on treating of the crop residues in accordance with OHS and industry requirements. 4.6. The treated crop residue is properly stored for a recommended time before based on the type of treatment weather condition
5. Prepare urea-molasses Block (UMB)	5.1 ***Ingredients*** and materials are prepared according to their requirements. 5.2 Proportion is calculated carefully to meet production plan. 5.3 Mixing procedures are undertaken based on industry guideline. 5.4 Molding, drying and storing are undertaken. 5.5 ***Feeding*** is carried out according to animal species and status. 5.6 Material, tool and equipment are cleaned according to manufacturer's instructions, ***OHS*** and industry guideline.

Variable	**Range**
Crop residues	May include, but not limited to: • Cereal crop residues • Legume Crop Residues • Different other types of crop residues
Livestock	May include, but not limited to: • Cattle, sheep and goat, equine, camel, swine
PPE	May include, but not limited to: • Plastic boots, over all, glove, hat etc….
Types of treatments	May include, but not limited to: • Physical • Chemical • Biological/ Effective Microorganisms (EMs) treatment

Ingredients	May include, but not limited to: • Molasses, Urea, salts, water, crop residues. • Stock and activated Effective Microorganisms (EMs), bagasse, canetop
Packing materials and equipment	May include, but not limited to: • Sack • Pit/Bunker • Plastic sheet • Weighing balance/scale • Stirrer • Pail • Graduated jug • Water container • Plastic tanker. • Tower silo • Trench silo • Cellar silo

Evidence Guide	
Critical Aspect of Competence	Must demonstrate knowledge and skills to: • Identify locally availabile crop residues to be treated. • Determine the method of treatment. • Prepare appropriate packing material for treatment. • Apply urea treatment for crop residues. • Complete treatment and store. • Urea molasses block preparation
Required knowledge and attitude	Must demonstrate knowledge of: • Preparation of crop residue treatment. • Application of crop residue treatment ingredients. • Storage and feeding methods of treated crop residue. • Fed treated crop residue for livestock. • Knowledge of crop residue treatment. • Storage and feeding methods. • Urea molasses block preparation

Required skills	Demonstrate skills to: • Apply urea teatment method/techniques • Participate in crop residue treatment preparation • Undertake calculation in treating feeds • Work safety • Communicate effectively • Skills in using tools and equipment • Perform urea mollases preparation
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational standard: Animal Production Level II	
Unit Title	**Undertake Quarantine Procedures for Livestock Farm**
Unit code	**AGR ANP2 10 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to undertake quarantine procedures of livestock farm and respond to problem that are designed to reduce the likelihood of pathogenic organisms entering the site.

Element	Performance Criteria
1. Prepare for quarantine site activities	1.1. Personal and/or work vehicles are ensured to be ***decontaminated*** before entering the ***quarantine site***. 1.2. Contact with ***potential contaminants*** is reported according to ***industry requirements***. 1.3. Hands are washed before ***livestock, feed, plant stock or other products*** are handled. 1.4. Appropriate clothing and footwear are put on before commencing work and 'street clothing' is securely stored away from livestock, feed or other products.
2. Carryout quarantine site activities/work	2.1. Chemicals and/or medications are handled and stored appropriately. 2.2. Where relevant to the production activities of the industry, different feed mixes, soils and/or growing media and/or other products are kept separate and appropriately marked according to industry procedures. 2.3. Any cases of ***pest or parasite infestation*** are identified and reported to supervisor. 2.4. Any OHS hazards are identified and appropriate action taken according to industry policy and OHS legislation and codes. 2.5. All ***waste products*** are disposed of according to industry procedures. 2.6. Animal quarantine plans are designed and implemented following the industry guidelines. 2.7. Observations are recorded according to organizational procedures. 2.8. Measures on sick or exposed animals are taken according to organizational and environmental policies.
3. Follow quarantine site procedures	3.1. All visitors are informed of the quarantine procedures and are provided with appropriate clothing and footwear, if required

	by industry procedures. 3.2. Gates and doors are kept locked where required by industry procedures and supervisor instructions. 3.3. Where installed, security fencing is maintained according to supervisor instructions. 3.4. Deliveries to site are checked to ensure that established procedures for vehicle decontamination, unloading and receipt and holding or storage of stock and/or supplies are followed.
4. Respond to quarantine site breach or problem	4.1. The specific problem and its location are identified and reported to supervisor to secure according to industry procedures. 4.2. Quarantine site and location of breach are cleaned and disinfected as required according to the specific nature of the problem and industry procedures. 4.3. Livestock, plant stock and other items suspected of being exposed to contaminants are isolated and monitored for evidence of contamination according to industry procedures. 4.4. Information about the breach or problem is recorded according to industry procedures.

Variable	**Range**
Decontamination	May include, but not limited to: • That all vehicles are driven through a dip of treated solution before entering the site.
Quarantine site	May include, but not limited to: • The whole farm, an apiary, enterprise premises, or part of the premises or industry, such as an isolation area or sick bay. In some cases, the quarantine area may extend beyond the industry boundaries.
Potential contaminants	May include, but not limited to: • Pathogens entering on clothing/footwear, equipment, vehicles or items being delivered to the industry. • Potential contaminants may also enter in foodstuffs, including food for animal, bee or human consumption, vaccines, water or soil, or be brought on to the site by new livestock, bees or pests.
industry requirements	May include, but not limited to: • SOPs, industry quality assurance manual, industry standards and quality assurance programs specific to bio security, production schedules, MSDS, work notes, product labels, manufacturers

	specifications, operators manuals, industry policies and procedures (including waste disposal, recycling and re-use guidelines), OHS procedures, supervisors oral or written instructions, work and routine maintenance plans.
Livestock, feed, plant stock or other products	May include, but not limited to: • Livestock, feed, plant stock or other products include any animals, plants, prepared stock feed and stock feed ingredients, fish; all hive products and the beehive itself.
pest or parasite infestation	may include: • Vertebrate and invertebrate pests, wild birds in sheds or housing, dogs, cats, feral animals, wildlife, parasites of honeybees, or feral or managed bees carrying parasites.
Waste products	May include, but not limited to: • Feed spills, unused/expired vaccine, and biological matter, such as semen, embryos, tissue samples, plant cuttings, dead birds, manures, used beekeeping equipment, dead bees, and used chemicals and pest strips. Other items may include beehives, materials and hive products.

Evidence Guide	
Critical Aspect of Competence	Must demonstrate skills and knowledge to: • Undertake quarantine procedures • Report any breaches of quarantine site
Required Knowledge and Attitudes	Demonstrate knowledge of: • Industry site quarantine policy and procedures • Reporting procedures for alleged breaches of site quarantine procedures • Consequences of breaching site quarantine procedures
Required skills	Demonstrate skills to: • Interpret site quarantine procedures • Apply quarantine procedures • Communicate with visitors to the industry about site quarantine procedures.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test

	• Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard : Animal production Level II	
Unit Title	**Apply Agricultural Extension service for Rural development**
Unit Code	**AGR ANP2 11 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to promote the use of digital technology agricultural extension, understand adult learning, Integrated gender agricultural extension and Recognize Indigenous Knowledge

Element	Performance Criteria
1. Promote the use of digital technology in Agricultural Extension	1.1 The ***use of Digital technology in Agricultural extension*** is introduced to familiarize its importance 1.2 ***Skills in using digital technology*** is built to strengthen agricultural extension services 1.3 The ***role of digital technologies in agricultural extension*** services is understood to enhance agricultural development.
2. Understand Adult Learning	2.1 The ***concept of adult learning*** is understood to bring behavioural changes 2.2 ***Principles of Adult learning*** is determined for the implementation of extension services 2.3 The ***importance of Adult learning*** in Agricultural Extension is understood to enhance agricultural extension services 2.4 ***Adult learning methods*** are understood to enhance the knowledge and skills of extension beneficiaries 2.5 ***The role of adult learning*** is understood to allow farmers develop knowledge and skills
3. Integrate Gender in Agricultural Extension	3.1 The ***concept of gender*** is understood to provide inclusive agricultural extension services 3.2 Gender awareness and sensitization is created to increase the contribution of gender in agricultural development 3.3 The ***role of gender in agriculture*** is determined to enhance

	agricultural development. ***3.4 Gender mainstreaming*** is implemented for effective outcome of extension services
4. Recognize Indigenous Knowledge	4.1. The ***concept of indigenous knowledge*** is understood to strengthen the service of agricultural extension 4.2. ***Characters of indigenous knowledge*** are understood to promote local experience 4.3. ***Exchange of indigenous knowledge*** is promoted to enhance community development 4.4. The ***importance of indigenous knowledge*** is understood to facilitate its contribution to the development processes. 4.5. The ***controversial issues of the debate on indigenous knowledge*** are further studied to propose the urgent need, to document, learn, preserve, and exchange indigenous knowledge

Variable	**Range**
Use of Digital technology in Agricultural extension	May include but not limited to: • Define Digital Technology • Evolution and progress of digital technologies • Digital technology for Agricultural Extension • Tools for digital technology • Utilization of digital technologies
Skills in using digital technology	May include but not limited to: • Demonstrate digital technologies • Practice digital technologies • Apply digital technologies • Maintain and manage digital technologies

Role of digital technologies in agricultural extension	May include but not limited to: • Provide diverse knowledge to beneficiaries • Supply Efficient information products • Provide technology-related advice • provide location-specific market information • enhance technology adoption in agriculture
Concept of adult learning	May include but not limited to: • Adult learning theories • Characteristics • Adult learning approaches • Purpose of Adult learn • Adult learning practices
Principles of Adult learning	May include but not limited to: • Self-directed • Experiential • Problem-centered • Motivated to learn • Learner oriented • Practice Oriented • looks for help and mentorship • Open for modern ways of learning • Choose how to learn
Importance of Adult learning	May include but not limited to; • Increase effective participation in decision making • Improves individuals' technology utilization • Enhances working efficiency, • Keep up with the growing economic competition • Self-improvement • Financial growth and benefit
Adult learning methods	May include but not limited to: • Visual Aids • Audio • Print Media • Tactile • Interactive

The role of adult learning	May include but not limited to: • Behavioral change • Enhance to acquire new skills and knowledge • Access disadvantaged groups • Promote Participatory decision making
Concept of gender	May include but not limited to: • Definition of Gender • Historical development of Gender • Importance of Gender • Gender awareness and sensitization
Role of gender in agriculture	May include but not limited to: • Women's contribution in Agricultural Production • Women's participations in rural labor market • Women's participation in Agricultural Extension • Gender difference in rural labor markets • Impact of gender role in Agricultural Extension services
Gender mainstreaming	May include but not limited to: • Understanding of gender equality • Mainstreaming strategy • Steps of gender mainstreaming
Concept of indigenous knowledge	May include but not limited to: • Definition of Indigenous knowledge • Historical development of indigenous knowledge • Importance of indigenous knowledge for development processes
Characters of indigenous knowledge	May include but not limited to: • Experiences • its compatibility with indigenous environment and culture • insufficient knowledge of rural people • combination of culture, belief and religion
Exchange of indigenous knowledge	May include but not limited to: • Recognition and identification • Validation of indigenous knowledge • Recording and document indigenous knowledge • Storage in retrievable repositories • Dissemination of indigenous knowledge • Utilization of indigenous knowledge

Importance of indigenous knowledge	May include but not limited to: • Problem solving strategies • Important component of global knowledge • Resource in the development processes • Understanding of local conditions • Increase responsiveness of client • Enhance cross cultural understanding
Controversial issues of the debate on indigenous knowledge	May include but not limited to: • Discrimination, • Exploitation, • Dispossession • Miss-Used And • Miss- Appropriation

Evidence Guide	
Critical Aspects of Competence	Demonstrate knowledge attitude and skill to: • Use of Digital technology in Agricultural extension • Applies the role of digital technologies in agricultural extension • Implements Adult learning methods • Implements Gender mainstreaming • Facilitates the Exchange of indigenous knowledge • Understands the controversial issues of the debate on indigenous knowledge
Required Knowledge and Attitudes	Demonstrates knowledge of - • Understands concept of adult learning • Recognize the Principles of Adult learning • Appreciates the importance of Adult learning • Understands the concept of gender • Understands the concept of indigenous knowledge • Understand the Characters of indigenous knowledge • Appreciates the importance of indigenous knowledge • Understands the controversial issues of the debate on indigenous knowledge
Required Skills	Demonstrates skills:

	• Demonstrates the use of Digital technology in Agricultural extension • Applies the role of digital technologies in agricultural extension • Implements the Adult learning methods • Understands and implements the role of adult learning • Understands and implement the role of gender in agriculture • Implements Gender mainstreaming • Facilitates the Exchange of indigenous knowledge
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and Occupational health and safety (OHS) practices.
Methods of Assessment	Competence may be assessed through: • Written Test, Interview, Quiz, Practical assignment • Observation and Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level II	
Unit Title	**Prevent and Eliminate MUDA**
Unit Code	**AGR ANP2 12 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her workplace by applying scientific problem-solving techniques and tools to enhance quality, productivity and other kaizen elements on continual basis It covers responsibility for the day-to-day operation of the work and ensures Kaizen Elements are continuously improved and institutionalized.

Element	Performance Criteria
1. Prepare for work.	1.1. Work instructions are used to determine job requirements, including method, material and equipment. 1.2. Job specifications are read and interpreted following working manual. 1.3. ***OHS requirements***, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work. 1.4. Appropriate material is selected for work. 1.5. ***Safety equipment and tools*** are identified and checked for safe and effective operation.
2. Identify MUDA and problem	2.1 Plan of MUDA and problem identification is prepared and implemented. 2.2 Causes and effects of MUDA are discussed. 2.3 All possible problems related to the process /Kaizen elements are listed using ***statistical tools and techniques***. 2.4 All possible problems related to kaizen elements are identified and listed on Visual Management Board/Kaizen Board. 2.5 ***Tools and techniques*** are used to draw and analyze current situation of the work place. 2.6 Wastes/MUDA are identified and measured based on ***relevant procedures***. 2.7 Identified and measured wastes are reported to relevant personnel.
3. Analyze causes of a problem.	3.1 All possible causes of a problem are listed. 3.2 Cause relationships are analyzed using***4M1E***. 3.3 Causes of the problems are identified. 3.4 The root cause which is most directly related to the problem is selected.

	3.5 All possible ways are listed using ***creative idea generation*** to eliminate the most critical root cause. 3.6 The suggested solutions are carefully tested and evaluated for potential complications. 3.7 Detailed summaries of the action plan are prepared to implement the suggested solution.
4. Eliminate MUDA and Assess effectiveness of the solution.	4.1. Plan of MUDA elimination is prepared and implemented by ***medium KPT*** members. 4.2. Necessary attitude and the ***ten basic principles*** for improvement are adopted to eliminate waste/MUDA. 4.3. Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS. 4.4. Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements. 4.5. ***Tangible and intangible results*** are identified. 4.6. Tangible results are compared with targets using ***various types of diagrams***. 4.7. Improvements gained by elimination of waste/MUDA are reported to relevant bodies.
5. Prevent occurrence of wastes and sustain operation.	5.1. Plan of MUDA prevention is prepared and implemented. 5.2. Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared. 5.3. Occurrences of wastes/MUDA are prevented by using ***visual and auditory control methods***. 5.4. Waste-free workplace is created using ***5W and 1H***sheet. 5.5. The completion of required operation is done in accordance with standard procedures and practices. 5.6. The updating of standard procedures and practices is facilitated. 5.7. The capability of the work team that aligns with the requirements of the procedure is ensured and trained on the new ***Standard Operating Procedures (SOPs)***.

Variable	**Range**
OHS requirements	May include, but not limited to: • legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid,

	hazard control and hazardous materials and substances. • PPE are to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	May include, but not limited to: • Dust masks/goggles • Glove • Working cloth • First aid and • Safety shoes
Statistical tools and techniques	May include, but not limited to: • 7 QC tools May include, but not limited to: ➢ Stratification ➢ Pareto Diagram ➢ Cause and Effect Diagram ➢ Check Sheet ➢ Control Chart/Graph ➢ Histogram and Scatter Diagram • QC techniques May include, but not limited to: ➢ Brain storming ➢ Why analysis ➢ What if analysis ➢ 5W1H
Tools and techniques	May include, but not limited to: • Plant Layout • Process flow • Other Analysis tools • Do time study by work element • Measure Travel distance • Take a photo of workplace • Measure Total steps • Make list of items/products, who produces them and who uses them & those in warehouses, storages etc.

	• Focal points to Check and find out existing problems • 5S • Layout improvement • Brainstorming • Andon • U-line • In-lining • Unification • Multi-process handling &Multi-skilled operators • A.B. control (Two point control) • Cell production line • TPM (Total Productive Maintenance)
Relevant procedures	May include, but not limited to: • Make waste visible • Be conscious of the waste • Be accountable for the waste and measure the waste.
4M1E	May include, but not limited to: • Man • Machine • Method Material and Environment
Creative idea generation	May include, but not limited to: • Brainstorming • Exploring and examining ideas in varied ways • Elaborating and extrapolating • Conceptualizing
Medium KPT	May include, but not limited to: • 5S • 4M (Machine, Method, Material and Man) • 4p (Policy, Procedures, People and Plant) • PDCA cycle Basics of IE tools and techniques
The ten basic principles for improvement	May include, but not limited to: • Throw out all of your fixed ideas about how to do things. • Think of how the new method will work- not how it won. • Don't accept excuses. Totally deny the status quo. • Don't seek perfection. A 5o percent implementation rate is fine as long as it's done on the spot.

	• Correct mistakes the moment they are found. • Don't spend a lot of money on improvements. • Problems give you a chance to use your brain. • Ask "why?" At least five times until you find the ultimate cause. • Ten people's ideas are better than one person's. • Improvement knows no limits.
Tangible and intangible results	May include, but not limited to: • Tangible result may include quantifiable data • Intangible result may include qualitative data
various types of diagrams.	May include, but not limited to: • Line graph • Bar graph • Pie-chart • Scatter diagrams • Affinity diagrams
Visual and auditory control methods	May include, but not limited to: • Red Tagging • Sign boards • Outlining • Add ones • Kanban, etc.
5W and 1H	May include, but not limited to: • Who • What • Where • When • Why and • How
Standard Operating Procedures (SOPs).	May include, but not limited to: • The customer demands • The most efficient work routine (steps) • The cycle times required to complete work elements • All process quality checks required to minimize defects/errors • The exact amount of work in process required

Evidence Guide	
Critical Aspects of Competence	Demonstrate knowledge and skills to: • Discuss why wastes occur in the workplace

	• Discuss causes and effects of wastes/MUDA in the workplace • Analyze the current situation of the workplace by using appropriate tools and techniques • Identify, measure, eliminate and prevent occurrence of wastes by using appropriate tools and techniques • Use 5W and 1H sheet to prevent • Detect non-conforming products/services in the work area • Apply effective problem-solving approaches/strategies. • Implement and monitor improved practices and procedures • Apply statistical quality control tools and techniques.
Required Knowledge and Attitudes	Demonstrate knowledge of: • Targets of customers and manufacturer/service provider • Traditional and kaizen thinking of price setting • Kaizen thinking in relation to targets of manufacturer/service provider and customer • value • The three categories of operations • the 3“MU” • wastes occur in the workplace • The 7 types of MUDA • QC story/PDCA cycle/ • QC story/ Problem solving steps • QCC techniques • 7 QC tools • The Benefits of identifying and eliminating waste • Causes and effects of 7 MUDA • Procedures to identify MUDA • Necessary attitude and the ten basic principles for improvement • Procedures to eliminate MUDA • Prevention of wastes • Methods of waste prevention • Definition and purpose of standardization • Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement • Methods of visual and auditory control • TPM concept and its pillars. • Relevant OHS and environment requirements • Method and Lines of communication

	• Methods of making/recommending improvements. • Reporting procedures • Workplace procedures associated with the candidate's regular technical duties • organizational structure of the enterprise
Required skills	Demonstrate skills to: • Draw & analyze current situation of the work place • Use measurement apparatus (stop watch, tape, etc.) • Calculate volume and area • Apply statistical analysis tools • Use and follow checklists to identify, measure and eliminate wastes/MUDA • Identify and measure wastes/MUDA in accordance with OHS and procedures • Use tools and techniques to eliminate wastes/MUDA in accordance with OHS procedure. • Apply 5W and 1H sheet • Update and use standard procedures for completion of required operation • Apply Visual Management Board/Kaizen Board. • Detect non-conforming products or services in the work area • Work with others • Read and interpret documents • Observe situations • Solve problems • Communicate information • Gather evidence by using different means • Report activities and results using report formats • Implement and monitor improved practices and procedures
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Level III

Occupational Standard: Animal Production Level III	
Unit Title	**Conduct Dairy Cattle Production**
Unit code	**AGR ANP3 01 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to determine dairy cattle production and productivity, dairy cattle feed and management practices, apply breeding management of dairy cattle to support the industry and farming community.

Element	Performance Criteria
1. Determine dairy cattle production and productivity	1.1 Types of ***dairy production systems*** are identified and managed according industry guide line 1.2 Productivity and economic importance of dairy cattle are described 1.3 Dairy cattle ***selection criteria*** are identified and described 1.4 Dairy cattle production status is analysis according to industry requirements. 1.5 Animals culling operation are performed that do not fit within the established ideal range are identified, and record is made for culling operation
2. Dairy cattle feed and management practices	2.1 digestion system of dairy cattle are identified 2.2 Feed sources for dairy cattle are described 2.3 nutrient requirement of dairy cattle are recognized 2.4 **F*eeding plan*** is prepared and formulated to ***different class of dairy cattle***. 2.5 Feeding strategies of dairy cattle are described 2.6 ***Dairy cattle body condition scoring*** is undertaken and recorded according to industry standards requirements. 2.7 ***Facilities and equipment*** for dairy animal needed to provide care are identified, selected and prepared 2.8 New born animals management practices are performed 2.9 Heifers management practices are performed 2.10 Lactating, pregnant and dry cow management practices are performed according to standards

	2.11 ***Hygiene, health and environmental requirements*** are identified and maintained according to industry and legislative requirements. 2.12 ***Record keeping*** is carried out for dairy cattle in line with industry requirements.
3. Apply Breeding management of dairy cattle	3.1. Common dairy cattle breeds are identified 3.2. Reproductive organ and mammary gland of dairy cattle are recognize 3.3. Estrus synchronization and heat ***detection*** procedures are carried out according to established industry practice. 3.4. Mating areas are secure and provide according to established industry practice. 3.5. Mating procedures and handling techniques that minimize stress and discomfort to dairy meet ***OHS requirements*** are used. 3.6. Common ***Reproduction index*** or fertility indicators are Identified

Variable	**Range**
Dairy cattle	May include, but not limited to: • Dairy animals covered by this unit title include different breeds of dairy cattle.
Record keeping	May include, but not limited to: • Date of conception, parturition date, amount and type of feeds consumed, lactation, etc.
OHS hazards	May include, but not limited to: • Moving and handling dairy animals and machinery, solar radiation, dust, and other hazardous substances (i.e. Veterinary chemicals).
Reproduction index or fertility indicators	May include but not limited to:- • Age at first calving • Calving interval • Fertility • puberty
Dairy production systems	May include, but not limited to: • Pastoral,

	• Agro-pastoral, • Mixed crop-livestock farming, • Urban and Peri-urban dairy farming and • Specialized intensive dairy farming systems
selection criteria	May include but not limited to:- • Physical character • Production character • Reproduction character
Feeding plan	May include, but not limited to: • Seasonal supplementary feeding pattern, • Fodder conservation plan, • Feed purchases, • Drought reserves, • Minimum livestock condition levels, • Production requirements, and • Target weights, • Amount and type of feed and feed supplements, • Feeding frequency and rates, • Feeding methods and procedures, • Weed control strategy, • Reporting and recording requirements.
Different class of dairy cattle	May include but not limited to: • Calf • Heifer • Lactating • Pregnant • Dry
Heat Detection	May include, but not limited to: • Observation of clinical signs, backpressure test, or other recognized tests.
OHS requirements	May include, but not limited to: • Identifying hazards and assessing and reporting risks, and implementing safe systems and procedures for: • Handling of dairy animals aimed to prevent injury and illness including zoo noses control • Manual handling, application and storage of hazardous substances (drenches, vaccines) • Outdoor work including protection from solar radiation, and

	dust • Appropriate use of personal protective clothing and equipment.
Facilities, materials and supplies	May include, but not limited to: • Shelter of correct size and requirements to suit type of animals, • Appropriate ventilation and temperature controls (blinds, shutters, registers, poly socks), • Provision of a clean, dry, warm and draught free environment, • Suitable shedding, pens, slatted wire/flooring, deep litter, washable troughs, Materials may include, but not limited to: • Feed and water buckets, bails, teats, troughs, drums, racks or rings for roughage, troughs or bins for concentrates, milk transporting systems, water troughs or drinkers. Natural or additional shelters in paddock. • Hygiene and cleaning materials, house rearing facilities, paddock rearing facilities, weaning equipment and facilities, weighing equipment/scales and facilities, adequate effluent treatment and disposal facilities, cleaning equipment.
Hygiene, health and environmental requirements	May include, but not limited to: • Standard Operating Procedures (SOPs), • Industry standards, production schedules, • Material safety data sheets, • Work notes, • Product labels, • Manufacturers specifications, • Operators manuals, • Enterprise policies and procedures (including waste disposal, recycling and re-use guidelines), • OHS procedures, • Supervisors oral or written instructions, • Work and routine maintenance plans. • Common disease of dairy cattle

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • Carry out dairy cattle body condition scoring • Organize record keeping in dairy farm

	• Detect signs of heat • Feed and monitor health and condition of newborn according to industry, animal nutrition and animal welfare requirements.
Required Knowledge and Attitudes	Demonstrate knowledge of: • Digestion, reproductive organ and mammary gland of dairy cattle • Production systems of dairy cattle • Preparation of facilities, equipment and supplies • Oestrus synchronization methods • Awareness of enterprise and legislative requirements with regard to animal welfare, workplace safety. • Dairy Cattle care • Health and condition of newborn according to enterprise, animal nutrition and animal welfare requirements.
Required skills	Demonstrate skills to: • Perform in maintaining records of dairy animals • Perform dairy cattle body condition scoring • Assess and provide appropriate nutritional and environmental requirements for different class of dairy cattle. • Observe heat detection
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit title	**Undertake Milk Handling and Processing**
Unit code	**AGR ANP3 02 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Undertake milking operation, preservation and process milk in to different products and clean up materials, tools and equipment up on completion of work.

Elements	Performance Criteria
1. Undertake milking operation and Preservation	1.1. Required materials, tools and equipment are prepared and used. 1.2. Hygiene and sanitation of working area and equipment are carried out in relation to industry requirement milking operation 1.3. Milk composition are recognized according to standards 1.4. Milking procedure, Milking schedule and ***milking methods*** are conducted according to industry guideline. 1.5. Milk quality test is undertaken to meet production plan according to industry requirements.
2. Process milk into different products	2.1. ***Types of milk products*** to be processed are determined based on the industry requirements. 2.2. Whole milk processing ***ingredients*** are prepared according to industry guidelines. 2.3. Milk is processed into different types of products according to industry requirement and guidelines 2.4. Milk and milk Product is preserved using different ***methods of preservation.***
3. Clean up on completion of work	3.1. The processed milk and milk by products are properly stored until transporting. 3.2. Reusable materials are returned to store and disposable are disposed according to OHS instructions. 3.3. Tools and equipment are cleaned, maintained and stored according to manufacturer's specifications and work instructions. 3.4. All waste products are disposed of according to industry procedures.

	3.5. Work outcomes are reported to the supervisor.

Variable	Range
Cooling system	May include, but not limited to: • Cold water • Shed • Refrigerator
Boiling equipment	May include, but not limited to: • Boiler, boiling dish, pan, pasteurizer
Types of milk products	May include, but not limited to: • Cream, yoghurt, butter, cheese/cottage cheese, whey
Equipment and materials	May include, but not limited to: • Jar • Pail • Milk can • Cream separator • Churner • Refrigerator • Pasteurizer, • Homogenizer, • Weighing scale, • Ladle • Cooking dish • Cooking jar • Table • Graduated jug • Milking machine • Strip cup, etc.
Ingredients	May include, but not limited to: • Salt • Flavoring agents • Starter culture
milking methods	May include but not limited to: • Hand milking • Machine milking
PPE	May include but not limited to:

	• Overall • Gloves • Boots
Methods of preservation	May include, but not limited to: • Cooling • Salting • Pasteurization • Homogenization • Standardization • Sterilization

Evidence Guide	
Critical Aspect of Competence	Must demonstrate knowledge and skills competence to: • Follow milking procedures • Undertake milking and milk quality test • Preserve milk • Convert milk into different products • Clean up on completion of milk and milk by products processing work
Required Knowledge and Attitudes	Demonstrate knowledge of: • Milk and milk products • Milk preservation techniques • Milk processing methods • Milk composition and constitute • Knowledge in handling milk and milk products • Usage of tools and equipment • Regular check-up and repair of tools and equipment • Apply values according to industry or instruction.
Required skills	Demonstrate skills to: • Apply milking ability • Milking procedure • Work safety • Use tools and equipment • Undertake milk quality test • Undertake milk preservation and milk process in different products and by-products • Communicate effectively

Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Perform Apiculture production**
Unit code	**AGR ANP3 03 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to perform beekeeping operation to establish and monitor queen rearing and re-queen honey bee, manipulate honey bee brood, manage honey bee swarm, remove and extract honey crops and prevent and control pests and diseases in beekeeping activities.

Element	Performance Criteria
1. Identify species and races of honey bee	1.1. History, advantages and **species of honey bees** are described 1.2. **Races of honey bees** are described 1.3. **Duties of honey bee** are described
2. Identify requirements for queen rearing and re-queen honey bee	2.1 In all beekeeping activity tools, equipment, ***PPE*** and other requirements needed to rear queen bees are obtained and confirmed as being in good repair and serviceable for use. 2.2 ***Breeding stock*** is selected from productive healthy stock according to established ***breeding program criteria***. 2.3 Day-old larvae from the breeder queen bee are selected for grafting and transferred from worker cells into queen cell cups. 2.4 Adequate numbers of nurse bees are confirmed as being present in cell raising colonies. 2.5 Grafted cells are placed into cell starting colonies and then into cell finishing colonies 2.6 Ripe queen cells are transferred into the nucleus 10-11 days after grafting, confirm the availability of drones during mating and record the work. 2.7 ***Vigor of the current queen is assessed*** accordingly. 2.8 Colony is monitored for ***signs*** that indicate queen replacement is necessary work. 2.9 Replacement queens according to industry criteria and any escort worker bees are stored in appropriate conditions and monitoring until re-queening is undertaken. 2.10 Queen bee has been raised from a nucleus colony and re-queen according to code of practice

	2.11 Hive is monitored for acceptance by egg laying and adequate level of hatching according to industry requirements.
3. Prepare Honey Bee Brood to Manipulate	3.1. Tools and equipment required are selected to manipulate brood and ensure serviceability prior to use. 3.2. Any site quarantine or other bio security protocols in force are observed. 3.3. ***Hazard and Risks*** to colony, including to brood and queen bee, are identified and actions are taken to minimize likelihood and consequences of risks. 3.4. ***Hive inspection*** is conducted according to industry procedures 3.5. Hive and colony are monitored after manipulation process and appropriate action is taken if needed. 3.6. Work area are Cleaned and disposed of waste materials according to workplace waste management and biosecurity procedures
4. Manage honey bee swarm and swarming behavior	4.1. All equipment required to collect a swarm of honey bees are obtained and confirmed as being in good repair and serviceable for use. 4.2. All procedure of catching and collecting swarm are undertaken. 4.3. Work are Conducted according to quarantine regulations and biosecurity codes of practice. 4.4. Swarm from apiary is quarantined and monitored hive health according to biosecurity procedures. 4.5. Egg laying performance of queen is monitored and determined if re-queening is required according to workplace procedures. 4.6. Honey bee colony is monitored and for signs that swarming may occur. 4.7. ***Options for controlling*** **swarming** behavior is Consider, selected and implemented the best option 4.8. Colony swarming behavior has been assessed, managed and monitor to ensure that further management options 4.9. Risks associated with catching and collecting bees are identified and actions are taken to minimize likelihood and

	consequences of risks.
5. Remove honey crops from hive and extract	5.1. All ***tools and equipment*** required to remove a honey crop from a hive are obtained and confirmed as being in good repair and serviceable for use and Risk minimizing. 5.2. Ripeness of honey and factors affecting quantity and quality of honey is determined and monitored to ensure that the honey is mature enough to be harvested. 5.3. Time and location of planned honey removal takes into account potential contaminants, impact on the colony and quality and type of honey to be obtained. 5.4. Range of suitable ***methods for removing bees*** and how much honey to remove is used. 5.5. Honey harvesting procedures are undertaken. 5.6. Honey-filled frames are transported to extracting facility. 5.7. Ripen honey comb are stored in a pest and bee protected environment to prevent robbing, damage and contamination according to workplace procedures 5.8. Honey –filled combs are extracted, ***purified*** and moisture content of honey is checked and stored in suitable containers to keep its quality and customer requirements. 5.9. Reference sample of honey is taken, correctly labeled and stored according to industry, food safety and quality assurance requirements.
6. Assess pest and disease of honeybee	6.1 Bee hive is inspected for signs of ***diseases*** and ***pests/enemies*** are notified as required by legislation and appropriate action is taken. 6.2 Adult bees and brood combs are observed for signs of disease and, where notifiable disease is present, appropriate authorities are informed as required by legislation and appropriate action is taken. 6.3 Flight paths around hive entrance are observed for signs of poor or irregular flight patterns, and for dead or dying bees at hive entrance. 6.4 Biosecurity measures are implemented according to industry

	biosecurity plans and instructions from appropriate authority. 6.5 Results of inspections and any remedial action taken are recorded and used as the basis for future beekeeping operations.

Variable	Range
Species of honey bee	May include, but not limited to: • Apismellifera • Apiscerena (Oriental honeybee) • Apis florae (dwarf honeybee) • Apisdorsata (giant honeybee) • Apisandreniformis or the black dwarf honeybee • Apiskoschevnikovi • Apislaboriosa • Apisnigrocincta • Apisnuluensis • Stingless bees
Races of honey bees	May include, but not limited to: • African Honeybee races • Ethiopian honeybee races • European Honeybee races
Duties of honey bee casts	May include, but not limited to: • Queen bee duties • Worker bee duties • Drone bee duties
Breeding stock	May include, but not limited to: • The desired stock to breed • A colony with good characteristics • The mother stock used to produce production queens with desired traits • Instrumentally inseminated stock • Stock mated in an isolated area or select tested • Stock selected according to established breeding program criteria.
Breeding program criteria	May include, but not limited to: • Temperament • Mite tolerance

	• Disease resistance • Honey production • Availability of queen candy • Micro-climate around cage • Status of hive being re-queened should be checked to make sure it is queen-less
Assessing vigor of current queen	May include, but not limited to: • Colony strength • Queen health status • brood pattern
Signs of queen replacement	May include, but not limited to: • Aggressiveness • Drone laying queens • Poor disease resistance • Poor performances by workers • Queens older than 12-18 months • Swarming • Overcrowding • Presences of swarming cells
Hazards and Risks	May include, but not limited to: • Aggravation of Nosema disease • Chilling of adult bees and brood • Manipulating combs during extreme cold weather • Replacing combs in incorrect sequence • Introduction of disease when frames are swapped from one hive to another • Killing of queen bee by crushing when frames are being removed. • Contamination of honey with dust • Lower quality product through discolorations and contamination with dislodged brood and larvae when • Removing honey from a brood nest.
Hive inspection	May include, but not limited to: • External inspection • Internal Inspection
Options for Controlling swarming colony	May include, but not limited to: • Artificially swarming colony by removing part of colony • Make a new nucleus colony

	• Manipulating brood box • Moving colony to a honey flow • Providing beeswax foundation for bees to build worker comb • Removing capped brood and bees and introducing them into weaker hives • Re-queening colony with a young queen from a strain of bees known to be less likely to swarm
Materials, Tools and equipment	May include, but not limited to: • Bee blower • Bee brush • Butterfly entrances fitted to escape boards • Escape boards • Fresh water • Loading equipment • Means of transport for honey-filled frames to extracting facility • Wheelbarrow • Queen excluders • Spare boxes • Smoker • Honey extractor • Honey Presser • Honey Containers • Uncapping fork • Honey filtering cloth • Uncapping table • Honey Scrapper • Honey melter • Homogenizer • Refractometr • Bee blower • Honey strainer • Queen rearing equipment • Tarpaulins or other waterproof coverings.
Methods for removing bees	May include, but not limited to: • Bee blowers • Escape boards • Removing the super and letting bees walk or fly out

	• Shaking and brushing.
Diseases	May include, but not limited to: • Diseases affecting brood and adult bees: • American foulbrood • European foulbrood • Sac brood • Other viral diseases like Nosema and Chalk brood
Pests /enemies	May include, but not limited to: • Ants and spiders • Bee-eating birds • Cane toads • European wasps • Mice • Small hive beetles • Wax moths • Acarine • Braula coeca • Tropilaelaps • Varroa
purified	May include, but not limited to: • Include dead bees • Broken wax • Left over feeds • Propolis and • Pollen and broods
OHS hazards	May include, but not limited to: • Bee stings • Fire • Use of incorrect techniques of handling. • Wind
Collect swarm	May include, but not limited to: • Beekeepers can increase numbers of hives in their apiary • Obtain worker bees to repair damaged combs and draw foundation • Remove swarms in urban areas that represent a public nuisance
Type of swarm	May include, but not limited to: • Abscond swarming • Migrate swarming

	• Reproductive swarming

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Monitor conditions to ensure optimum time for re-queening operations • Select and use appropriate personal protective equipment • Compile with apiary biosecurity and quarantine procedures during the inspection activities: • Open hives, remove frames and set aside with minimal disturbance to brood and queen • Catch swarm of honey bees and relocate it safely • Perform honey harvest activities according to food safety, quarantine and biosecurity procedures • Determine the ripeness of nectar, honey and volume of honey comb and its readiness for harvest • Determine the factors affecting quality and quantity of honey and planned the time and location to harvest • handle comb filled with honey to prevent contamination and maintain quality • Select and use appropriate method to remove ripe honey comb from hives and loaded and secured for transport • Use safe handling and loading techniques • Transport and stored ripe honey comb in a pest and bee secure environment protected from damage and contamination • Identify honey bee pests/enemies and diseases • Applying knowledge of food safety regulation when handling frames and honey or other hive products for human consumption
Required Knowledge and Attitudes	Demonstrate knowledge of: • Bees races and species • Splitting and nucleus development (nucs) • Basic principles of inheritance of bee characteristics, the health, pests, queen cell production • Factors to consider when identifying and removing old queen and introducing new queen and re-queening • Transferring procedures

	• Swarming, season of swarming and Types of swarming • Methods of obtain colony of honey bees • Hive crops • Indicators for honey harvesting time • Natural processes for queen replacement(include swarming, Supersedure, Emergency queen replacement) • Hazards and risks for re-queening operations • Selection criteria for new queen bee introduced into hive. • Principles and practices of removing honey filled frames from hives • Impact on colony, type of honey and apiary site on the quality of honey, planning and timing of removal • Methods of removing bees from ripe honey comb and supers(including: fume boards, brushing, blowers, escape boards) • Indicators of ripe honey nectar and adequately filled cells • Honey quality and factors that impact on quality • Potential contaminants of ripe honey and the effect on honey quality • Biosecurity considerations, including: • Pests and diseases that occur in honey bees • Signs of pests and diseases in swarms
Required skills	Demonstrate skills to: • Carry out grafting • Recognizing diseases, pests and disorders and taking appropriate action • Manipulate honey bee colonies to increasing honey production • Manipulate honey bee colonies to swarm control • Prepare colony for re-queening and queen rearing • Open hives and remove and reposition frames safely • Collect a swarm of honey bee • Transferring of colony • Inspection of honey bee colony • Under take suppering and reducing • Extract honey • Distinguish between honey cells and brood cells

	• Carry out record keeping
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Carryout Camel Production**
Unit Code	**AGR ANP3 04 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to raise camels that needs application to develop production plan, select camel for milk production, identify for reproduction requirements and undertake handling and husbandry operation of camel production activities.

Element	Performance Criteria
1. Develop production plan for camel	1.1. ***Camel types*** are selected according to production requirement 1.2. ***Camel Production factors*** & production objectives are defined. 1.3. ***Resource requirements*** are identified 1.4. Production risks and strategies to address them are identified. 1.5. ***Feed requirements*** are determined for each age/sex/category and physiological condition of camel herds. 1.6. ***Feeding strategies*** including grazing, browsing management where appropriate are determined and feeding programs are developed for each camel herd category. 1.7. Production plan is prepared incorporating a calendar of operations for the enterprise production cycle. 1.8. Appropriate physical and financial record keeping system is established to provide data for the analysis of Camel Production performance.
2. Select camel for milk production	2.1. ***Criteria*** for selection are determined 2.2. ***Culling and replacement practices*** are determined 2.3. Milking sheds; yard and ***equipment*** are prepared for milking operations 2.4. Existing and potential ***hazards*** are identified and reported to the supervisor according to ***OHS*** and industry requirements 2.5. Lactating camel is handled as required to having maximum production.
3. Identify Camel reproduction requirements	3.1. Sign of puberty and sexual maturity is identified according to physiology and age of camel.

	3.2. Sign of rutting and behavioral change and type of mating system and different physiological condition of camel are identified. 3.3. ***Factors*** decide breeding season is identified based on the management system. 3.4. ***Condition*** of camels selected for mating is accurately determined and body scores are recorded according to recognized industry practices. 3.5. Camels are checked for signs of infection or other reason not to proceed with the planned mating and remedial action is taken as appropriate. 3.6. ***Receptive*** females are identified according to industry practice. 3.7. Mating procedures and handling techniques that minimize stress and discomfort to camels and meet OHS and camel welfare requirements are used. 3.8. Field mating is supervised and, when required***, intervention*** is undertaken. 3.9. ***Pregnancy testing*** is undertaken. 3.10. ***Records*** of mating are recorded accurately, legibly and according to industry requirements. 3.11. Abnormal, normal and difficultness are identified to maximize husbandry and routine activity according to industry manual.
4. Undertake camel raising work	4.1. Instructions and directions provided by supervisor are followed and clarification is sought when necessary. 4.2. ***Raising activities*** are undertaken in a safe and environmentally appropriate manner and according to industry guidelines
5. Handle and clean material and equipment	*5.1*. Waste material produced during work is handled properly. 5.2. Materials, tools and ***equipment are handled*** and transported according to instruction 5.3. Clean and safe work site is maintained while working. 5.4. Materials are returned to store or disposable materials are disposed of according to the instruction. 5.5. Tools and equipment are cleaned, maintained and stored properly. 5.6. Work outcomes and problems are reported to supervisor, feedback on performance is sought and any required

	improvements are noted for future action.

Variable	Range
Camel types	May include, but not limited to: • Dromedary-one humped-which occur in Ethiopia. • Bacteria-two humped
Camel production factors	May include, but not limited to: • Land size • Climate • Availability of foundation stock • Accessibility to in put • Market
Resource requirements	May include, but not limited to: • Production facilities and other infrastructure, management labor resources, and capital requirements.
Feed requirements	May include, but not limited to: • Age and stage of production • Birth to a week-colostrum's-adlibitum daily • 1 week to 3 week-whole milk or replacer-one quarter daily. • 3 weeks to 9 or 18 months-whole milk and leaves-less than 5oocc daily. • Dry pregnant-free grazing • Milking camel-free grazing and supplementary feed in: ➢ Sex ➢ Category ➢ Grazing poor- supplementary millet: 8.9 kg straw, ➢ Grazing none- 13.3 kg of straw • Trotting camel: ➢ Grazing good- 4.5 kg watering a day and salt • Walking camel: ➢ Grazing good- no grain but some salt • Trekking camel: ➢ Grazing variable- 2.27-4.5 kg grain per day and salt • Riding camel: ➢ Grazing is available, 2.27 kg grain per day • At rest: ➢ Grazing is available, 3.6 kg grain per day
Feeding strategy	May include, but not limited to:

	• Browsing and grazing • Providing supplementary feed (crop residue, concentrate, and others.)
Criteria	May include, but not limited to: • Size, age, breed, teeth for age and deformity, general appearance and condition, colors, temperament, disease susceptibility, percentage deformity, sex growth rate, body weight, breeding history, growth rate, milk production and milk quality.
Culling and replacement practices	May include, but not limited to: • Age, size, fertility history, conformation, skeletal faults, temperament, body weight and color, milk yield, growth rate, feed conversion rate, and chronic disorders. • Culling rates will vary according to the production profile of the herd, affordability and availability of replacement stock and other factors.
Equipments	May include, but not limited to: • Feed resource • Detergents • Weighting scale • Coiled meter • Pack saddle • Ridding saddle • Plough equipment • Camel cart • Site hobble ,sisal, plastic or leather rope • Calf muzzle rope • Halters • Elastrator/Emasculator • Thermometer • Knapsack sprayers. • Restraining rope • Storing cans • Milk buckets • Tattoo pliers • Syringes • Shovel • Wheel barrow

	• Mineral boxes • Milking pails • Milk pasteurizer • Milk homogenizer • Ear tags, branding iron
Hazards	May include, but not limited to: • Camel movement and handling, damaged yards, obstacles, uneven ground, and mechanical malfunctions including exposure to moving parts and hydraulics. • Moving machinery and vehicles • Noise • Slippery roads • Cold weather
OHS	May include, but not limited to: • The operation and maintenance of equipment • Camel handling including zoonosis control • The protection against electrical hazards • Handling hot water and protection from scalds • Outdoor work including protection from dust and solar radiation • Use of relevant personal protective equipment. • Identifying hazards, and assessing and reporting risks • Safe livestock handling systems and procedures, including controlling zoo noses. • Safe manual handling systems and procedures • Safe systems and procedures for applying and storing • Hazardous substances such as: drenches; vaccines • Safe systems and procedures for handling veterinary equipment such as: ➢ Syringes ➢ Needles.
Factors	May include, but not limited to: • Regular movement • Opportunistic movement
Condition	Include: • Age; condition scoring; physical observation, and pregnancy status or lactation

Receptive	May include, but not limited to: • Receptive females will sit in the cushy position • Non-receptive females may spit and run away or refuse to sit in the Cush position, becoming agitated.
Intervention	May include, but not limited to: • Checking for an intact hymen • Guiding and/or helping to position male correctly • Expert veterinary advice.
pregnancy testing	May include, but not limited to: • Palpation, spit offs • Ultrasound, urine test
Records	May include, but not limited to: • Camel numbers, details of administered preventative health treatments and outcomes, conformation, temperament and performance details, milk yield, bodyweight and condition scoring and any observed abnormalities.
Raising activities	May include, but not limited to: • Extensive production: ➢ Let camel for browsing ➢ Conserving and providing of crop residues for camel. ➢ Assist breeding operation ➢ Assist parturition ➢ Take care of calf ➢ Castration.(if necessary) ➢ Provide water ➢ Milking and handling of milk ➢ Training camel for different purpose. (draft, riding, traction) ➢ Inspecting health statutes of camel and identifying main camel disease. ➢ Forage development for camel. ➢ Provide the supplementary feed according to age groups and production status. ➢ Keep basic records • Intensive production: ➢ Operate milking and handling equipment on daily basis. ➢ Perform routine servicing on milk and milk handling equipment. ➢ Record milk.

	➢ Handle camel • Fattening: ➢ Identifying the age of camel ➢ Observing the body conformation ➢ Checking the health of camel • Draught camels: ➢ Restrain camel for training ➢ Train camel for riding ➢ Train camel for baggage ➢ Train camel for ploughing land ➢ Handle equipment • Maintain sanitation: ➢ Clean and sanitize equipment. ➢ Clean inside and outside live stock facilities. ➢ Operate manure handling and storage equipment. • Caring for calves: ➢ Rear new born calf to weaning ➢ Service and maintain calf rearing facilities. ➢ Tag and identifying calves. ➢ Perform castration. • Assist breeding operation: ➢ Assist calving ➢ Detect animal in heat • Feeding the camel: ➢ Supply adequate water and perform routine water service. ➢ Operate the feeding system and carryout feeding routine. Record keeping:
Handling equipment	May include, but not limited to: • Crush/bail, gates, pens, and loading ramps drenching and spraying equipment • Leg ropes, halters and lead • Scales/ heart girth meter
Behavioral characteristics	Maybe observed include: • Characteristics of dominance • Composition of the herd • Characteristics during rutting • Spitting, kicking and making noises such as humming
Procedures to control and sort	May include, but not limited to: • Allowing a reasonable amount of time for camels to complete

	movement • Appropriate use of handling equipment with minimum force • Use of positive and calming techniques to foster the physical and mental wellbeing of camels.
Restraint procedures	May include, but not limited to: • Safe and humane handling techniques • Use of camel industry-accepted restraint equipment.
Abnormal Camel behavior	May include, but not limited to: • Abnormal behavior due to cold stress and dehydration • Eye discharge and crying • Head rubbing • Infections • Lameness • Separation from the herd • Unusual rising and falling

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Develop feeding plan for camel • Determine criteria for performance selection • Monitor condition of female and male camel • Recognize ovulation, supervise mating • Identify, sort, move and control camels for handling and husbandry operations • prepare, clean and handle materials and equipment • Perform milking procedure, castration, feeding and restraining
Required Knowledge and Attitudes	Demonstrate knowledge of: • Camel husbandry and management practices • Whole farm planning processes. • Selection criteria • Managing lactating camel • Anatomy and physiology of male and female camel reproductive systems • Female and male body conditioning through nutrition programs • Pregnancy testing techniques, and ovulation • Camel behavioral characteristics and movement in handling areas • Classes of camels and their basic nutritional and welfare

	requirements • Production system of camel • Feed types • Work standards
Underpinning skill	Demonstrate skills to: • Develop selection criteria for production program • Record performance information • Carry out accurately scoring camel condition • Carrying out typical basic camel husbandry tasks (milking, harnessing, camel training, mating, restraining, feeding, castration, health care) • Feed and provide adequate clean water to camels • Recognize abnormal behavior and signs of ill health in camels using enterprise camel identification systems • Handle techniques and restraint methods. • Use material according to work activities • Clean material, work site and safe disposing of wastes
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Conduct Sheep and Goat Production**
Unit Code	**AGR ANP3 05 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to conduct sheep and goat production that required determine sheep and goat production and productivity, Perform Breeding management of sheep and goat, Identify feed and feeding of sheep and goats and Identify sheep and goat housing and facilities.

Element	Performance Criteria
1. Determine sheep and goat production and productivity	1.1 Types of ***sheep and goat production systems*** are identified and managed according industry guide line 1.2 Productivity and economic importance of sheep and goat are described 1.3 sheep and goat selection criteria are identified and described 1.4 Sheep and goat production status is analysis according to industry requirements. 1.5 Sheep and goat culling operation are performed
2. Perform Breeding management of sheep and goat	2.1 Common sheep and goat breeds are identified 2.2 Reproductive organ of sheep and goat are recognize 2.3 Common Reproduction index are identified 2.4 Estrus inducement and detection procedures are carried out according to established industry practice. 2.5 ***Breeding methods*** of sheep and goat are carried out 2.6 Pregnancy diagnosis techniques are applied at earliest opportunities to identify suitable action and condition of animals. 2.7 Sign of parturition is identified and reported potential problems to supervisor or Animal health practitioner 2.8 Ewes and Doe are prepared and assisted during giving birth 2.9 new born lamps and kids are cared according to industry operation standards 2.10 ***Contingency measures*** are prepared and implemented as required.
3. Identify feed and feeding of sheep and	***3.1*** Normal Feeding behaviors and Digestive systems of sheep and goat are identified and aligned

goats	***3.2 Feed and feed supplements*** source are identified and confirmed against the **industry feeding plan and local condition** ***3.3 Nutritional requirements*** of sheep and goat are identified and confirmed ***3.4 Feeding strategies*** are monitored and abnormalities are recorded and reported ***3.5 Procedures*** to minimize feed wastage and spoilage are implemented in line with industry requirements. ***3.6*** Sheep and goat body condition score are assessed and determined ***3.7 Condition and security*** of paddocks are monitored and maintained in line with industry requirements.
4. Identify sheep and goat housing and facilities	4.1 Appropriate site is selected according to sheep and goat production ***site selection criteria***. 4.2 Sheep and goat production site is prepared. 4.3 ***Requirements for sheep and goat housing*** is assessed and clarified according to industry objectives 4.4 Sheep and goat house building materials are assessed and prepared in relation to the industry requirements 4.5 Sheep and goat housing is confirmed within industry budgetary constraints 4.6 ***Facilities*** are assessed and determined according to ***industry*** objectives

Variable	**Range**
Sheep and goat Production system	May include, but not limited to: • Small holder • Small scale commercial producers • Large scale commercial producers • Based agro ecology such as high land, low land and mid altitude
Site selection criteria	May include, but not limited to: • Topography, adequacy of water, feed source and soil type are assessed • Distance from neighboring residence and direction of prevailing wind are identified
Requirements for sheep	May include, but not limited to:

and goat housing	• Lay out • Design • Spacing • House orientation
Nutritional requirements	May include, but not limited to: • Based on age class, Production stage , Health condition, Environmental factors etc that can be identified from authoritative and reliable sources such as vets, books, supervisors, other farmers, government departments and feed suppliers.
Oestrus inducement detection	May include, but not limited to: • Observation of clinical signs, backpressure test, or other recognized tests.
OHS requirements	May include, but not limited to: • Safe sheep and goat handling systems and procedures including zoon sis control • Identify hazards • Assess and report risks, and safe manual handling systems and procedures • Safe systems and procedures for the application and storage of hazardous substances (drenches, vaccines • The handling of veterinary equipment (syringes, needles, vaccines), and the appropriate use of personal protective equipment.
Breeding methods	May include, but not limited to: • Natural • Artificial insemination
Hygiene procedures	May include, but not limited to: • Sterile equipment and clean work sites are essential to the insemination process. Cleaning of pen as required.
Predators	May include, but not limited: • Fox, Tiger, Hyena, Dogs (domestic and wild)
Measures	May include, but not limited to: • Shooting, trapping, poisoning, fencing, spot or neon lighting, and guard dogs. Safety considerations may include the minimization of risk and danger to non-predatory animals, livestock, humans and the environment including the safe laying of traps, secure fencing, and the safe use of firearms and

	poisons.
Preventative health treatments	May include, but not limited to: • Vaccinations, drenching, and diet adjustment.
industry requirements	May include, but not limited to: • An estimate in relation to numbers of sheep and goat to be handled/accommodated • An assessment of the need for portability • The types of sheep and goat holding operations to be conducted. It may also include an assessment of hazards to health and safety associated with existing facilities for the purpose of eliminating hazards. • Standard operating procedures, industry standards, • Production schedules • Material Safety Data Sheets • Work notes • Product labels • Manufacturers specifications • Operators manuals • Enterprise policies and procedures (including waste disposal • Recycling and re-use guidelines) • OHS procedures • Supervisors oral or written instructions • Work and routine maintenance plans
Contingency measures	May include, but not limited to: • Emergency procedures in the event of adverse weather Conditions, difficulties in birth giving requiring veterinarian assistance, and moving into furrowing or delivering facilities few days prior to due date.
Nutritional requirements	May include, but not limited to: • The breed, weight and condition of the animals, stage of pregnancy, lactation requirements, and season /climactic conditions.
Feeding strategies	May include: • Feed processing • Feed quality and quantity checking • Feeding practices • Adjusting grazing

	• Supplementary feeding • Destocking • Adjustment of animal management • Early weaning and creep feeding • Development and effective utilization of feed resources
Feed and feed supplements .	May include, but not limited to: • Hay, grain, predetermined rations, trace elements, vitamins and sources of nutrients including silage, paddock feed, grain legumes, mineral blocks, protein meals, calcium and other nutrient supplements, and specific purpose feeds
Feeding plan	May include, but not limited to: • Target weights, amount and type of feed and feed supplements, feeding frequency and rates, feeding methods and procedures, weed control strategy, supervisors instructions, reporting and recording requirements.
Local conditions	May include, but not limited to: • Paddock conditions including availability, quality and quantity of water and feed supplies, and weather conditions.
Procedures	May include, but not limited to: • The accurate measurement of feed quantities, the use of precise measurement devices and apparatus, and the accurate determination of animal feed requirements.
Condition and security	May include, but not limited to: • Weather protection (wind, rain, snow, heat) and the availability of feed and water supplies. Other factors may include the provision of "lamb/kid proof" water troughs, paddocks that are suitable to the size of flock, adequate shelter and housing, and safe fencing and yards.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Perform site selection. • Facilitate mating and assist parturition. • Identify and provide animal nutritional needs.
Required Knowledge and Attitudes	Demonstrate knowledge of: • Site selection • Creating awareness of industry and legislative requirements with regard to animal welfare, workplace safety.

	• Care of sheep and goats during the late stages of pregnancy • Husbandry procedures and implementing measures for the safeguard of newborn animals
Required skills	Demonstrate skills to: • Assess and provide appropriate nutritional and environmental requirements for pregnant sheep/goats. • Monitor the space requirements of pregnant sheep/goats during latest stage of pregnancy. • Assist pregnant sheep/goat • Assist sheep/goat during parturition and mating • Communicate within the workplace • Apply docking, tags etc • Record and report accidents and incidents • Maintain records of sheep and goats.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Carryout Aquaculture and Fishery Production**
Unit Code	**AGR ANP3 06 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to perform aquaculture and fishery production that required Identify body parts of fish, Prepare facilities and Undertake fish stock selection and handling, Under take management and monitoring water quality, Practices Feed and feeding of fish, Undertake Harvesting and Handling of Fish Stocks and Control and prevent common disease and parasite of fish

Element	Performance Criteria
1. Identify body parts of fish	1.1 Fish body location, structure and function are recognized. 1.2 Fish dissection is practiced. 1.3 Fish sex is identified.
2. Prepare facilities and Undertake fish stock selection and handling	2.1 Labor and ***resource requirements*** for ***fish stock handling activity*** are confirmed with senior personnel and arranged. 2.2 Suitable **material, tools and equipment** are selected and checked prior to use. 2.3 Ponds, pens, cages and tanks are prepared. 2.4 Stock ***selection criteria*** are undertaken according to stock culture and production plans. 2.5 Kinds of **culture systems** are determined based on stocking density, level of input and management 2.6 Factors which could place the health of stock at risk during handling are identified and plans are made to minimize risk and disease problem.
3. Under take management and monitoring water quality	3.1. Advanced water quality management, ***routine water quality and environmental parameters*** to be measured are identified. 3.2. ***Repairs and calibrations*** are made in accordance with industry procedures and manufacturer's instructions 3.3. Operational guidelines to achieve desired handling objectives are planned and communicated effectively to staff.
4. Practices Feed and feeding of fish	4.1 Fish species ***feeding habits*** are determined 4.2 ***Fish feed sources*** are assessed.

	4.3 Fish species nutritional requirements are identified 4.4 Feeds are selected, sampled, analyzed, computed and recorded based on daily feed ration 4.5 Fish are fed based on appropriate ***feeding methods*** and ***Principles of feeding***
5. Undertake Harvesting and Handling of Fish Stocks	5.1 Pond and cages are seined. 5.2 Cages are lifted. 5.3 Fish harvesting and processing methods are determined 5.4 The infected pond is marked and protected from being harvested.
6. Control and prevent common disease and parasite of fish	6.1 ***Common fish disease***s are identified and their symptoms are recognized. 6.2 Disease prevention and control measures relevant to fish production are recognized and infected tools and equipment are isolated and disinfected. 6.3 The outbreak is reported for further assistance 6.4 Data or record sheets/books are collected for use.

Variable	**Range**
Resource requirements	May include, but not limited to:- • Vessels • Vehicles • Trucks • Trailers • Cranes • load shifting equipment • Handling equipment • Holding and transport equipment
fish stock handling activity	May include, but not limited to: • Weighing and measuring • Counting • Transport • Processing

	• Sampling for health assessment of stock • Grading • Sorting • Anaesthesia
Selection criteria	May include, but not limited to: • Healthy aspects, • Production purpose • Market demand and high price • Environment adaptations aspects • Fish seed availability
Routine water quality and environmental parameters	May include, but not limited to: • Dissolved oxygen • Hardness • Ammonia • Nitrite • Nitrate • Carbon dioxide • Alkalinity • Temperature • Salinity • Ph • Turbidity • Weather, rain, wind • Tides, water flow • Organisms in surrounding environment
material, tools and equipment	May include, but not limited to: • Boots • helmets • Sunglass • Sunhats • sunscreen creams • Gown • Overalls • raincoat • gloves • Waders • Life saver jacket

	• Polyethylene bag • Stocking materials (fry, fingerlings, egg, larvae) • Fishing nets • Ice box • Refrigerator • Measuring board • Various needles • Knives • Thermometer • pH meter • Dissolved oxygen meter • Conductivity meter • Secchi desk • Ammonia and Nitrate Test Kits • Plankton nets • Benthic sampler
Repairs and calibrations	May include, but not limited to: • Adjustment of equipment or other settings for calibration • Replacement of electronic parts, covers, probes
Fish feed resources	May include but not limited: • Natural food • Artificial feeds
Feeding methods	May include but not limited: • Manual feeding • Automatic feeding
feeding habits	May include not limited: - • Carnivores • Omnivores • Herbivores
Principles of feeding	May include but not limited: • Time • Place • Quantity • Quality • Nutritional requirement • Body weight • Feeding rate

Common fish disease	May include, but not limited to: • Environmental disease • Fugal disease • Bacterial disease • Viral disease • Protozoal disease • Crustacean disease
Advanced water quality parameters	May include but not limited: • Like temperature, transparency, turbidity, water colour, carbon dioxide, Ph of water, alkalinity, hardness, un-ionized ammonia, nitrite, nitrate, primary productivity, plankton population etc • Dissolved or suspended solids or wastes • Ozone • Soil ph • Clay content of soil herbicides, heavy metals • Biological oxygen demand, bacterial • Natural feeds • Sediments • Chlorophyll • Phosphorus (total and orthophosphate)
Labor requirements	May include, but not limited to: • Skilled handling workers, • unskilled labourers • Plant, equipment, vehicle or vessel operators • Specialized equipment operators • Transport operators
Fish species stocking Criteria	May include but not limited: • Fast growing • Market demand and high price • Ability to counter diseases • No competition for food • Not predatory in nature • Fish seed easily available
Good quality fish seed	May include but not limited: • Survival will be good • Diseases will not easily attack these fish seed and fingerlings • Production of fish will be good and high • Better profit will be obtained

Culture systems	May include but not limited: • Extensive • Semi-intensive • Intensive • Integrated
Pre and Post-stocking Management	May include but not limited: • Stocking rate • Predator and disease control • Liming pond • Fertilization pond • Harvesting and post-harvest operation
Feeding Rate	May include but not limited: • The percentage of the body weight of the fish to be fed
Aquarium installation	May include, but not limited to: • Setting the necessary materials and equipment according to manufacture guideline, such as fish tank or glass, bowl tank, water tank etc

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Apply water quality tests procedures and water sampling techniques • Apply fish catching • Apply fertilizer for grow-out algea • Stock fingerlings • Perform feeding operations • Perform common identification of disease • Harvest the stocks
Required Knowledge and Attitudes	Demonstrate knowledge of: • Stock behavior and biological requirements • Biology and chemistry of water bodies • Basic and advanced water quality parameters • Codes and regulations: comply with fisheries and environmental

	laws, rules and regulations • Categories or types of culture stock • Plan and write procedures fish activities • Assess risk and economic impact • Identify normal/abnormal stock behaviour and environmental condition • Recognize common fish diseases • Basic processing • Parts of fish/anatomy • Methods of fish harvesting
Required skills	Demonstrate skills to: • Operate and maintain basic water quality test equipment • record monitoring information • Perform correct fish stocking procedures • Perform growth of natural food • Perform feeding of fish • Compute ration • Apply water quality test parameters • Identify sex
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Perform Poultry Production**
Unit Code	**AGR ANP3 07 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to perform poultry production that required in Identify poultry production systems and their requirements, Identify and select poultry breed and breeding, Plan poultry house construction and facilities, Feed and Manage different classes of poultry and Prevent and control common poultry diseases.

Element	Performance Criteria
1. Identify poultry production systems and their requirements	1.1. Poultry ***production systems*** are identified and characterized to meet ***production plan*** 1.2. Requirements in each production Systems are identified 1.3. Suitable and feasible production system that is helpful to achieve pre-determined farm objective and in line with environmental legislations is recommended.
2. Identify and select poultry breed and breeding	2.1. Common ***poultry breeds*** are identified and characterized. 2.2. Appropriate breeds Criteria for selection are decided based on the pre-determined farm objectives and standard 2.3. Poultry mating methods are identified
3. Plan poultry house construction and facilities	3.1. Appropriate site is selected for poultry house establishment according to industry requirements 3.2. ***Types of poultry house*** are identified and determined. 3.3. ***Requirements for poultry house construction*** are identified according to industry requirements 3.4. Space required for different poultry classes is determined according to industry requirements 3.5. Farm lay out and chickens' houses are planned according to farm objectives and standards 3.6. Farm design are selected and constructed according to industry requirements 3.7. ***Facilities*** are identified and ways to obtain them are decided

	according to industry requirements
4. Feed and Manage different classes of poultry	4.1. Digestion systems structure and function of poultry are identified and compared to the other livestock 4.2. Types and sources of poultry feeds are recognized 4.3. ***Routine poultry management activities*** are identified, recognized and carried out according to industry standards. 4.4. Ration formulation for different ***classes of poultry*** are prepared 4.5. Prepare and provide feed and water timely according to industry standards 4.6. chicken ***feeding systems*** are determined
5. Prevent and control common poultry diseases	5.1 **Common poultry diseases** are identified according to the symptoms 5.2 Routine ***vaccination program*** are determined and followed for common poultry diseases according to the guideline ***Farm Bio-security*** activities are determined according to the standards

Variable	Range
Production systems	May include, but not limited to: • Extensive (Traditional Family Poultry) • Semi-Intensive (Improved Family Poultry) and • Intensive (Specialized Poultry Production)
Production plan	May include, but not limited to: • Egg • Meat • Dual purpose
Common Poultry breeds	May include, but not limited to: • Chicken • Ducks • Geese • Turkey • Quails
Chicken types	May includes:- • Improved • Indigenous/local

Types of poultry house	May include, but not limited to: • One side open chicken house • Chicken house with guard • All side closed chicken house • House with deep pit
Requirements for Poultry house construction	May include, but not limited to: • Timber, off-cuts, iron sheath, cements, thatch grass,etc
Facilities	May include, but not limited to: • Feederers • Waterer • Floor space • Roosts • Nests • Bedding materials • Thermometer • Hygrometer • Heater • Cooler • House orientation • Lightening • Ventilation • Incubators etc…
Routine poultry management activities	May include, but not limited to: • Feeding • Watering • Lightening • Flock health condition follow up • Debeaking • Culling unproductive birds • isolating the diseased ones • House and equipment cleaning • Egg collection, sorting and storing • Pasting or Wound management • De-toeing • Vaccination and other health measures • Culling
Feed stuffs	May include, but not limited to:

	• Roughage • Concentrate
classes of birds/chickens	May includes but not limited to: • Chickens • Grower • pullets • layers • broilers
feeding systems	May include, but not limited to: • wet- mash systems • dry-all mash sister • pellets or crumble • dry mash with scratch • green food system • restricted or control system
Common poultry disease	May include, but not limited to: • Viral disease • Bacterial disease • Fungal disease • Parasites disease • Metabolic disease
Vaccination program	May include, but not limited to: • Creating immunity and prevention • Vaccines should be used as a part of a disease prevention programme that important to prevent disease and not necessarily the routine use of vaccines
Farm bio security	May include, but not limited to: • A set of measures to protect a property from the entry and spread of pests and diseases

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Perform feeding, watering, vaccination, debeaking activities • Identify poultry breed • Identify poultry production system • Formulate poultry rations • Prevent and control common poultry diseases
Required Knowledge and	Demonstrates knowledge of:

Under knowledge	• Poultry production systems • Criteria for selection of poultry for different products • requirements for poultry house construction and facilities • Nutrient requirements for different poultry classes • Nutritional values of different feed stuffs • Reproductive and digestive systems of poultry • Common poultry diseases and parasites
Required skills	Demonstrate skills to: • Select poultry breed for specific production (egg, meat, dual) • Identify egg laying hens • Classify fertile and non-fertile eggs • Select suitable site for poultry house construction • Plan poultry house and farm layout • Perform routine poultry management activities • Formulate ration for different poultry classes • Coordinate and monitor on farm activities
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Undertake Livestock Fattening**
Unit Code	**AGR ANP3 08 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Undertake Livestock Fattening that able to Prepare for livestock fattening, to Select livestock for fattening Carryout fattening, Feed and Feeding for fattening animals and Monitor performance of feedlots to aid farming community and enterprises.

Element	Performance Criteria
1. Prepare for livestock fattening	1.1. Required materials, tools and equipment are identified and checked for their functionality. 1.2. House and housing facilities are prepared according to industry guideline. 1.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle.
2. Select livestock for fattening	2.1 ***Criteria*** for livestock selection are identified and clarified from production and marketing information and supervisor or management instructions. 2.2 Decide the length of fattening period according to feeding and profitability. 2.3 ***Existing and potential hazards*** in the workplace are recognized and risk is assessed and controlled in line with OHS and environmental management requirements 2.4 Organizational plans and management are consulted regarding the breeds, ***classes*** and numbers of ***livestock*** to be obtained for feed letting.
3 Carryout fattening	3.1 . Decide ***systems of fattening*** depend on feed resource and preferred farm fattening system. 3.2 Purchased livestock are inspected on delivery to the organization for health (de-worming and vaccination) 3.3 Weight gain is planned according to age, availability of feed resource and feeding condition of livestock.

	3.4 ***Routine activities*** are performed according to work situation to minimize different risk facing during fattening period.
4 . Feed and Feeding for fattening animals	4.1 ***Nutritional requirement*** of fattening animals are identified from information available and class of livestock. 4.2 ***Ingredients*** are identified, treated, measured and blended in the specified ratios and quantities from instructions and obtained from storage locations. 4.3 .Feed physical quality, quantity and type are checked on their arrival to the shed. 4.4 .Feed is stored according to organizational procedures and standards. 4.5 .***Method(s) of feeding*** to livestock is identified from production plan and confirmed with supplier of ingredients and other expert advice. 4.6 .Livestock is fed at scheduled time, type, rate and frequency according to organization plans and procedures and the codes of welfare. 4.7 Throughout the feeding process, adequate and clean water is provided.
5.Monitor performance of feedlots	5.1 Shed hygiene is monitored and maintained according to the organization practices and relevant regulations 5.2 The hygiene and health of the ***livestock*** are ***monitored*** and any ***reaction to a change in feed*** or schedules is noted and reported upon. 5.3 Any change in production levels as a direct result of changes to feed types, ingredients or schedules is monitored and reported upon. 5.4 Advice is given to operational staff during the feeding operation when requested, or when the need is observed. 5.5 All waste materials and substances are removed from the site and stored, or disposed of responsibly. 5.6 ***Record keeping*** are collated and stored according to the requirements of the organization

Variable	Range
PPE	May include, but not limited to: • Boots, overalls, gloves, protective eyewear, hearing protection, respirator or face mask, and sun protection (sun hat, sunscreen).
OHS requirements	May include, but not limited to: • Handling livestock including zoo noses control • Operating handling equipment • Hazard and risk control • Manual handling • Handling, application and storage of hazardous substances • Outdoor work including protection from solar radiation, dust and noise • The appropriate use and maintenance of personal protective equipment • Tattooing and branding livestock • Using slap brands or tattoos, and back fat testing.
Criteria	May include, but not limited to: • Size, age, breed, teeth for age and deformity, general appearance and condition, colors, temperament, disease susceptibility, percentage deformity, sex growth rate, body weight, breeding history, growth rate, health and nourished.
Existing and potential hazards	May include, but not limited to: • Livestock movement and handling, solar radiation, organic and other dusts, excessive noise, moving machinery and vehicles.
Classes	May include, but not limited to: • Classes of cattle may include finishing steer calves, yearling steers, two-year-old, and growing steers • Classes of sheep • Classes of goat.
Livestock	May include, but not limited to: • Beef cattle are the most commonly fattening animals, but the unit may cover shaded sheep or goats. • The categories and classes of cattle may include breed or breed cross, age, sex, condition, or lactation, • Finishing steer calves, yearling steers; two-year-olds, growing steers, dry/pregnant mature cows, and cows nursing calves.
System of fattening	May include, but not limited to: • Grass fattening/Extensive system/ranching • Semi-intensive system

	• Intensive system
Routine activities	May include, but not limited to: • Feeding • Watering • Cleaning • Recording • Monitoring hygiene and health • Identification/ear tagging/ • Dehorning • Deworming • Vaccination • Castration • Hoof trimming
Ingredients	May include, but not limited to: • Prepared and formulated proprietary rations, whole grains, protein additives, and/or vitamins and minerals. • Require rodent control, dust management, no rat or bird faecal contamination of feeds or raw ingredients, and feed not being wet
Method(s) of feeding	May include, but not limited to: • Self feeding • Hand feeding
Nutrition requirement	May include, but not limited to: • Estimation of metabolisable energy, • Feed conversion efficiency versus growth rate, • Economic analysis of cost of gain and net, • Level of management, • Return per head in terms of feed conversion, • Level of use of concentrate, • Animal health programs, and stock turnover rate.
Cleaning	May include, but not limited to: • Identifying cleaning agents/chemicals/equipment, mixing • Chemicals and cleaning agents
Livestock monitoring	May include, but not limited to: • Protein percentage, fat percentage, calcium, dates of formulation and feed changes, dates of supplying various rations to livestock, correlating mortality/livestock behavior to ration, and measuring body weight gains. Feed monitoring must

	be undertaken with herd health monitoring when investigating reasons for poor performance.
reaction to a change in feed	May include, but not limited to: • Development of wet faeces, • Feed time increases, • Body weight gain drops, • Mortality increases, and Whole grains seen in faeces.
Record keeping	May include, but not limited to: • All feeds and nutrition used, weight gain, individual and herd health record, breeds and classes of the animals in feedlot, and the associated costs and revenues should be recorded appropriately.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills competence to: • Determine criteria for performance selection • Determine fattening schedule • Treat and mix quality ingredients in required proportion and fed accordingly • Minimize outbreaks of disease through the effective use of hygiene procedures • Carry out procedures followed during fattening
Required Knowledge and Attitudes	Demonstrate knowledge of: • Feeds and feeding in fattening process • Environmental codes of practice with regard to livestock fattening • Organizational selection criteria for fattening • Organizational fattening operation and management plans • Sound management practices and processes to minimize noise, odours and debris from the fattening operations • Organization and industry guidelines for the preparation of feed and mixes • Feed raw ingredients - grains, meals and roughages, vitamins, minerals and premix formulations
Required skills	Demonstrate skills to: • Carry out selection criteria for fattening program • Record performance information

	• Recognise livestock abnormalities. • Apply selecting feed ingredients, mixing feed, feeding and watering • Determine schedule for feedlots
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational standard: Livestock Production Level III	
Unit title	**Perform Artificial Insemination for Livestock**
Unit code	**AGR ANP3 09 0322**
Unit descriptor	This competence standard requires the application of knowledge and skills to prepare animals for insemination, undertake artificial insemination work, perform insemination, clean materials and equipment, disposal of Wastes and record of data after completion of the work.

Element	Performance criteria
1. Prepare animals for insemination	1.1. Detail case history of the animal came for the service is addressed form the owner. 1.2. Animals intended for insemination are restrained and correctly identified for insemination according to the supervisor/ industry guide lines. 1.3. The animal body condition and body frame (in particular pelvic cavity) for its capacity to hold the foetus is considered 1.4. Its physiological status and cardinal signs of heat are addressed through rectal palpation and visual inspection. 1.5. Timing of insemination process is scheduled to ensure availability of ***resource*** and personnel requirements. 1.6. ***Estruses synchronization*** is carried out according to the industry code of practice. 1.7. ***Animals in heat*** are identified and prepared for insemination according to the ***industry guide lines***.
2. Undertake artificial insemination work	2.1. The required ***materials, tools and equipment*** are used according to the industry guidelines. 2.2. ***Artificial insemination activities*** are undertaken in a safe and environmentally appropriate manner according to the industry guidelines. 2.3. Semen is properly ***handled*** and periodically top-upped during storage, distribution and at field levels according to the industry guidelines.
3. Perform insemination procedures	3.1. The necessary materials and equipment are prepared for insemination according to industry code of practice. 3.2. ***Personal protective clothes and equipment*** are used

	according to the industry guidelines. 3.3. The semen is selected and thawed according to accepted industry practices. 3.4. Work is done according to occupational health and safety ***(OHS)*** requirements and workplace information. 3.5. Insemination is carried out maintaining all the ***veterinary sanitation procedures.***
4. Record data and clean up on completion of work	1. Insemination and breeding data are recorded and ***AI efficiency*** is ***evaluated*** according to the industry requirements. 2. Work area is cleaned and maintained according to the industry guidelines. 3. Materials and equipment to be reused are cleaned and returned to safe and appropriate place. 4. ***Wastes*** are disposed off according to recommended hygiene standards and environmental policy.

Variables	**Range**
Resource	May include but not limited to: • Artificial insemination bags, liquid nitrogen, liquid nitrogen containers, vehicles(motorcycles), helmet, and others,
oestrus synchronization	May include but not limited to: • Hormone, made estrus at the same time for different female animals
Animals in heat	May include but not limited to: • Female animals with observed heat signs and are ready to be inseminated according to the industry guide lines.
industry guide lines	May include but not limited to: • Industry Standard operating procedures (sops), work notes, legislations, and or verbal communications.
Materials, tools and equipment	May include but not limited to: • Gloves • insemination gun • Containers • Thermos flask • Scissors • Canister • Towel or tissue paper • Forceps

	• AI kit bag • Thermometer • AI certificate • Case recording book • Semen straw • Liquid nitrogen • Ai sheath
Artificial insemination activities	May include but not limited to: • Semen collection • Semen handling • Restraining method • Insemination procedure
Handling	May include but not limited to: • Keep the germ plasm alive and keep its fertility during storage, transport at field level. • Topping up the semen with liquid nitrogen and thawing with appropriate temperature according to the industry guidelines.
Personal protective clothes and equipment	May include but not limited to: • Boots • Overalls • Gloves • Sun protection (sun hat, sunscreen).
OHS	May include but not limited to: • Safe animal handling systems and procedures including zoo noses control, Identify hazards, assess and report risks. • Safe manual handling systems and procedures. • Safe systems and procedures for outdoor work including protection from solar radiation. • Appropriate use of personal protective equipment.
Veterinary sanitation procedures	May include but not limited to: • Washing and hygienic preparation of the vulva area, disinfection and cleaning of AI equipment, • preventing zoon sis and venereal diseases by wearing gloves and other appropriate protective materials according to the industry guidelines.
evaluating AI efficiency	May include but not limited to: • None return rate, number of services per conception, pregnancy

	rate, calving rate, calving interval. • These parameters in turn may indicate the breeding efficiency of the animal, the efficiency and ability of the inseminator, and the fertility and quality of the semen.
Wastes	May include but not limited to: • Gloves, insemination sheath and other packing materials.

Evidence Guide	
Critical aspects of competence	Must demonstrate knowledge and skills to: • Detect heat, maintain all insemination procedures and veterinary sanitation so as to optimize conception, • Record data after completion of the work. • Requires the ability to handle animals humanely and safely. • Sterilize equipment after each insemination to control disease transmission • Prepare hygienic worksite prior and after AI procedures
Required Knowledge and Attitudes	Demonstrate knowledge of: • Anatomy and physiology of reproductive organ of animals. • Basic breeding principles, including the estrus cycle and heat signs and its significance. • Pregnancy testing • Nutrition, animal health and abnormalities in relation to reproduction. • Semen handling including thawing techniques • Preparation requirements for artificial insemination of animals • Animal movement and behavioural characteristics • Handling techniques, restraint methods and when to use them. • Industry identification system for animals • Personal protective equipment and when and how it should be used • Diseases that have a potential to transmit to humans and or animals through semen • Relevant legislation, regulations and codes of practice with regard artificial insemination, workplace OHS and animal welfare
Required skill	Demonstrate skills to: • Perform Sterilize equipment and prepare hygienic worksite prior and after insemination procedures.

	• Identify animals on heat through observation and palpation for correct insemination timing. • Handle semen properly. • Inseminate animals • Employ safe work practices. • Clean up work site and safely dispose off waste. • Communicate effectively with other team members. • Record and report reproductive data.
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: 5.3 Interview / Written Test 5.4 Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level III	
Unit Title	**Design Livestock Farmstead Structure and Facilities**
Unit Code	**AGR ANP3 10 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to identify and incorporate both livestock needs and industry objectives into an efficient and cost-effective design through advising on site selection, determine requirements and prepare brief layout with respect to livestock farmstead structure and facilities.

Element	Performance Criteria
1. Undertake a site suitability analysis	1.1. Location of new or existing site is inspected and ***physical elements and features*** of the site are recorded for assessment of suitability. 1.2. Legal requirements and constraints on development processes are identified. 1.3. Surveys to be undertaken are specified and tolerances determined according to ***industry requirements***. 1.4. Site preparation requirements are assessed and determined according to enterprise policies and site parameters.
2. Prepare a brief layout	2.1. Options to modify existing facilities or establish alternative handling operations are assessed. 2.2. OHS codes of practice and enterprise quality assurance requirements are identified and incorporated into the plan. 2.3. Brief layout is prepared and consultation is undertaken to establish agreement on options and approaches for development.
3. Determine requirements	3.1. Requirements for ***livestock handling*** and/or accommodation ***facilities*** are assessed and clarified according to industry objectives. 3.2. Cost structures and timelines are negotiated and confirmed within enterprise budgetary constraints. 3.3. Plans are obtained for livestock handling facilities from a variety of sources and are assessed in relation to industry

	requirements.
4. Develop a final plan	4.1. Recommendations are prepared based on the analysis of data and industry instructions. 4.2. Authorizations and approvals required for implementation of the plans are obtained. 4.3. Detailed ***plan*** is produced with consideration for safety, environmental implications and meeting industry objectives. 4.4. Plans are modified appropriate to the individual site and reflect enterprise objectives as required

Variable	**Range**
Physical elements and features	May include, but not limited to: • Soil • Topography • Existing vegetation • Climatic factors (Temperature (low land, midland and high land), wind direction, humidity…) • Accessibility • Availability water and Environmental impact
Industry requirements	May include, but not limited to: • An estimate in relation to numbers of livestock to be handled/accommodated, • An assessment of the need for portability • The types of livestock holding operations to be conducted. • It may also include an assessment of hazards to health and safety associated with existing facilities for the purpose of eliminating hazards • Standard Operating Procedures (SOPs), • Industry standards, production schedules, • Work notes and plans, • Manufacturers specifications, • Operators manuals, • Enterprise policies and procedures (including waste disposal, recycling and re-use guidelines), and • Manager's oral or written instructions.

Livestock	May include, but not limited to: • Sheep, goats, equine, pigs, poultry, camel and cattle.
Livestock handling facilities	May include, but not limited to: • Fixed and portable yards • Drafting gates, • Animal dips, • Laneways, gates, • Crutching and shearing machinery, • Mule sing and marking cradles, • Loading ramps, • Races, pens, • Showers, • Fencing, • Shearing and crutching sheds, • Animal handling equipment (crush, rope, ...) • Drying sheds, • Intensive production sheds and pens, • Cages and milking sheds.
Plan	May include, but not limited to: • Information is relevant and precise and clearly communicates development works to be undertaken. • It applies appropriate construction and engineering principles according to industry standards, and any notes and specifications are included to assist in plan interpretation. • It may also include any difficulties or issues faced, recommendations for future work, results, and cost estimates and data analysis. • Cost estimates may include items in Bill of Quantities, labor, and machinery and equipment.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Calculate number of livestock accommodated • Determine requirements for livestock accommodation and handling facilities • Describe physical elements and features
Required Knowledge and Attitudes	Demonstrate knowledge of: • Site selection criteria

	• Livestock behavior and design interactions • Cost alternatives/estimation • Livestock handling and/or accommodation facilities and their requirements • Industry and legislative requirements for the planning and establishment of livestock handling facilities • Codes of practice with regard to environmental protection
Required skills	Demonstrate skills to: • Estimate and measure dimensions, and calculate establishment costing • Calculate number of livestock handled • Evaluate and recommend alternative options • Identify appropriate safe workplace procedures for livestock and personnel • Regularly access industry information databases to maintain currency with industry developments • Communicate effectively in both verbal and written form to discuss, • Advise and receive feedback from the enterprise
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal production Level III	
Unit Title	**Apply Digital Technology in Agriculture.**
Unit Code	**AGR ANP3 11 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Understand the Concept of digital technology, apply Digital technologies among rural population and recording and documentation system.

Element	Performance Criteria
1. Understand the Concept of digital technology	1.1. ***Digital technologies*** are understood to apply digital technology. 1.2. ***Importance of digital technologies*** are understood in agricultural sector 1.3. ***Role of digital technologies*** in agriculture is identified to enhance agricultural development. 1.4. ***Principles of Agricultural technology*** are identified to apply in the agricultural sector 1.5 Mobile/Smart phones and template functions are understood to collect data and use in the reporting system
2. Apply Digital technologies among rural population and farmers	2.1. Require ***tools and equipment*** are identified and coordinated to apply digital technologies 2.2. Digital technology ***infrastructures*** are identified to implement in agricultural development 2.3. Digital technology skills are developed among the rural population 2.4. Digital ***Agri-preneurial*** skill is developed for agricultural transformation. 2.5. ***Digital technology communication tools are*** used to collect data and reporting system 2.6. Digital technologies, tools and ***techniques*** are used to deliver digital education 2.7. Implementation of digital technologies is promoted to enhance productivity
3. Recording and documentation	3.1. ***Data collecting formats*** are developed based on the needs 3.2. ***Data collection methodologies*** are identified and selected based on the intended objectives 3.3. Collected data are organized, analyzed and interpreted based on the intended objectives 3.4. Organized, analyzed and interpreted data are documented and reported 3.5. Feedbacks are collected from the relevant stakeholders

Variable	Range

Digital technologies	May include, but not limited to: • Internet • Computer • Smart phone • Tablet • GPS • Web browser
Importance of digital technologies	May include, but not limited to: • Sharing and searching information • Collect data • Enable storage of massive information • Time saving • Cost minimizing • Data accuracy and reliability • Data centralizing and administration • Improve collaboration • Enhance creativity • Enhances work accuracy
Role of digital technologies	May include, but not limited to: • Create connectivity between operations • Facilitate communication in agricultural sectors • Globalize communication • Strengthen market linkage
Principles of Agricultural technology	May include, but not limited to: • Design with user • Understand the existing ecosystem • Design for scale • Build for sustainability • Data driving • Reuse and improve • Address privacy and security • Collaborative
tools and equipment	May include, but not limited to: • Chargers • Computer • Smart phone • Tablet • I pad • GIS

	• Website • Online resources • Digital programs
infrastructures	May include, but not limited to: • Telecommunications utilities • Electricity power • Server • Information and communication Technologies • Mobiles Phones • Computers systems
Agri-preneurial	May include, but not limited to: • Online marketing • Online Learning
Digital technology communication tools	May include, but not limited to: • Smart phone • Cell phone • Email • Telegram • SMS • What's APP
technique	May include, but not limited to: • Video chat • Virtual meeting • E-learning • Email • Video conference
Data collecting formats	May include, but not limited to: • Google sheet • Templates • Ex-cell • Google drive storage
Data collection methodologies	May include, but not limited to: • Interview • Questionnaire • Surveying • Focus group discussion (FGD) • Case study

Evidence guide

Critical aspects of competence	Demonstrate knowledge and skills on: • Understand the basic digital technologies. • Use mobile/Smart phones and template to collect data and reporting the data • Understand the basic digital technology communication tools. • Identify the require tools and equipment to apply digital technologies • Apply digital technology • Understand the basic virtual meeting.
Required knowledge and attitude	Demonstrate knowledge on: • Understand the basic digital technology communication tools. • Understand the basic digital technologies. • New or upgraded technology performance • Environmental considerations • Appropriate performance evaluation.
Required skills	Demonstrate skills to: • Use Digital technology communication to collect data and report system • Use digital technologies applications • Use software applications (word processing, spread sheets, data base management • Apply skills for accessing and using spreadsheets and databases • Literacy skills for data analysis and interpretation • Determine and confirm digital technology communication tools**.**
Resources implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of assessment	Competence may be assessed through: • Interview/written test • Observation/demonstration with oral questioning
Context of assessment	Competence may be assessed in the work place or in a simulated work place setting.

Level IV

Occupational Standard: Animal Production Level IV	
Unit Title	**Develop Animal Feed Plan and Conduct Ration Formulation**
Unit Code	**AGR ANP4 01 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to determine livestock condition and nutritional requirements, determine supplementary feeding program, develop and monitor animal feeding plans.

Element	Performance Criteria
1. Assess livestock condition and nutritional requirements	1.1. ***Livestock condition*** is assessed and recorded according to industry standards and ***industry requirements***. 1.2. ***Animal production status*** is identified and assessed according to *industry* requirements. 1.3. Livestock nutritional requirements and the nutritional value of pasture and feedstuffs are identified and Analysis
2. Assess pasture feed	2.1. ***Grazing management strategy*** are Determined to ensure the sustainable stocking capacity of pasture 2.2. quantity and quality of pasture are Monitored to ensure continual and consistent supply of nutrients to livestock
3. Determine supplementary feeding program	3.1 Types of supplementary feed are identified and determined for all classes of animal. 3.2 Economic basis to ***supplementary feeding system*** is determined according to industry requirements. 3.3 Supplementary feeding program is determined to satisfy deficiencies in pasture feed or animal condition. 3.4 Supplementary feeding is provided to maintain livestock body weights, condition or lactation requirements.
4. Develop animal feeding plans	4.1 ***Feeding plan*** is developed and reviewed to ensure it remains responsive to changing conditions. 4.2 Suitable ***feed conservation*** methods are identified and carried out in preparation for ***abnormal conditions***. 4.3 A system of feeding options are selected that supplies the appropriate amount of feed to the herd/flock to meet condition and growth needs, and that meets production requirements of the business. 4.4 A ***feed budget*** is prepared according to the selected system of

	feeding. 4.5 Data is documented for continual assessment and effective management planning.
5. Apply ration formulation techniques	5.1 Scales and containers to be used for measurements are calibrated according to the manufacturer's instructions. 5.2 ***Ingredients*** are identified from instructions and obtained from storage locations. 5.3 Ingredients are measured in the specified ratios and quantities. 5.4 Ingredients are blended adequately and ***hygienically*** in the manner specified and using the appropriate equipment. 5.5 Where ***milling*** is required, it is done in the manner specified and using the appropriate equipment. 5.6 ***Methods of ration balancing*** are identified according to enterprise requirements

Variable	**Range**
Livestock condition	May include, but not limited to: • Animal condition by weighing • Condition scoring • Lactation stage • Milk yield and Animal Market Reporting System (LMRS).
Industry requirements	May include, but not limited to: • Standard Operating Procedures (SOPs) • Industry standards • Production schedules • Work notes and plans • Product labels • Manufacturers specifications • Operators manuals • Enterprise policies and procedures (including waste disposal • Recycling and re-use guidelines), and managers oral or written instructions.
Animal production status	May include, but not limited to: • Stage of pregnancy • Stage of Lactation

	• Dry • Amount of work done (draught animals) • New-born, and weaner • Furthermore, it may also include broiler, egg laying and dual purpose poultry.
Essential requirements	May include, but not limited to: • Energy, protein, vitamins, water and minerals. • Essential requirements may vary due to live weight and body condition, mating, lactation and milking, growth, weather conditions/wind chill, sex and age of animal, energy concentration of feeds, distance walked for feed, water or shade, pasture digestibility, and disease/health status.
Grazing management strategy	May include but not limited to:- • Grazing systems • Livestock production objectives • Grazing pressure • Stocking rate
Supplementary Feeding system	May include, but not limited to: • For the nutritional deficiencies occurred due to seasonal differences • Drought or production objective and others.
Production targets	May include, but not limited to: • Growth rates, • Sale weights • Milk production • The growth/weight of calves • Lambs and/or kids, and the pregnancy status of dairy cows and heifers.
feeding plans	May include, but not limited to: • Production objectives • Method of feeding • Nutritional requirements of different class of animals • Problems associated with purchasing feeds • Matching feed supply and demand, and • Feed ration formulation and treatment strategy.
Feed conservation	May include, but not limited to: • Storing and wisely used of supplementary and preserved feeds
abnormal conditions	May include, but not limited to:

	• Destruction of fodder caused by fire, flood, drought, frost, insects, hail and snow.
Feed budget	May include, but not limited to: • Aspects of the local area and of the industry, including delivery patterns, area of operation (climate, geography, etc.), pasture growth rates and seasonal variation, market availability and price of feeds.
Methods of ration balancing	May include, but not limited to: • Pearson square • Algebraic equation • Trial and error method • Computer
Ingredients	May include, but not limited to: • The mix might consist of prepared and formulated proprietary rations • Liquid feeds, • Whole grains • Industrial product and by product • Protein additives, and/or vitamins and minerals.
Hygienically	May include, but not limited to: • This will require rodent control • Dust management, no rat or bird faecal contamination of feeds or raw ingredients, and feed not being wet.
Milling	May include, but not limited to: • Hammer milling and roller milling.
OHS	May include, but not limited to: • The safe operation and maintenance of machinery and • Equipment, hydraulics and guarding of exposed moving parts • The operation of tractors and other vehicles • Manual handling especially when handling and loading seed • Working around dams, channels and other water sources • Storage, handling and transportation of hazardous • Substances (petroleum products, pesticides and • Anhydrous ammonia) • Protection from hazardous noise and organic and other dusts • Outdoor work including protection from solar radiation • Use of relevant personal protective equipment • Livestock handling including zoo noses control

	• Manual handling including lifting and carrying • Machinery and vehicle safety when feeding out • Feed materials handling systems and procedures to • Reduce risk associated with organic dusts • Use of relevant personal protective equipment.
Feed sources	May include, but not limited to : • Roughage: such as grass and hay • Concentrates: mineral/supplements, grain etc… • Other such as water,
Cost benefit analysis	May include, but not limited to: • Considered in terms of all impacts on the performance of the business, and must include animal welfare, environmental, and OHS issues, as well as the financial ones.
Feeding methods	May include, but not limited to: • Staged introduction of grain feeding, feeding grain on the ground or in troughs • Access to water • Allowing adequate time to change over feedstuffs • Ad lib feeding • Restriction of movement • Gradual introduction to feedstuffs, and strip grazing.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Carry out nutritional requirements of animal • Develop supplementary feeding programs • Assess nutritional values of pasture and supplementary feeds • Apply safe workplace and environmentally responsible practices • Predict seasonal pasture production for the area • Estimate the feed value of a standing pasture at different times of the year • Calculate the feed demand for different types of livestock and production phases • Match feed supply and demand • Assess feeding plan alternatives

	• Develop and document a feeding plan
Required Knowledge and Attitudes	Demonstrate knowledge of: • Principles of animal feeding • Nutrient requirements of animal • Nutritive value of different feedstuffs • Seasonal ingredient variations • Nutritional value of different feedstuffs • Assessment procedures to ascertain livestock condition • Methods of assessing pastures quality and quantity • Pasture livestock carrying capacity • Supplementary feeding strategies • Change in nutritional requirements during late pregnancy and lactation
Required skills	Demonstrate skills to: • Calculate ration formulation of feeds • Collect data and record to assess feeding plan alternatives • communicate written and oral information, and prepare reports for the understanding of staff and management • Estimate feed quantity to meet animal requirements, • Calculate data and manage budgets • Undertake a variety of raw ingredients • Identify Nutritional value of different feedstuffs • Develop Supplementary feeding strategies
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Develop and Manage Rangeland**
Unit code	**AGR ANP4 02 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to identify rangeland values, facilitate rangeland development and management program and assess rangeland condition and trend.

Element	Performance Criteria
1. Identify rangeland values	1.1. ***Characteristics*** of ***rangeland*** environment are determined according to enterprise objectives. 1.2. The ***importance of range land*** is analyzed according to enterprise objectives 1.3. Nutritive value of range land is assessed to determine appropriate fertilizer program.
2. Facilitate rangeland development and management program	2.1. ***Rangeland development program*** is implemented and ***carrying capacity*** and ***stocking density*** is monitored according to ***industry requirements***. 2.2. ***Grazing strategy*** may be carried out to reduce or eradicate areas of weed infestation where planned. 2.3. Processes to minimize waste and soil degradation are introduced and implemented according to environmental standards. 2.4. ***Principle of rangeland*** management is applied according to environmental standards.
3. Assess rangeland condition and trend	3.1. Soil structure and erosion are monitored and necessary changes to cultural practices and drainage are determined 3.2. ***Rangeland uses and stakeholders*** are assessed according to industry requirements. 3.3. Analogy to human health of rangeland condition is identified according to industry requirements. 3.4. Assessment of ***rangeland trend*** is carried out to meet industry requirements. 3.5. ***Rangeland assessing approach*** is determined according to

	industry requirements. 3.6. Feed surpluses and deficiencies are identified and appropriate action taken according to enterprise requirements. 3.7. Pasture maturity is assessed to meet marketing and production targets.

Variable	**Range**
Characteristics	May include, but not limited to: • Soil • Climate • Topography • Type of plantation, etc.
Rangeland	May include, but not limited to: • Natural grazing land • Bushy areas • Biodiversity • Vegetation • Forests
Importance of range land	May include, but not limited to: • Grazing • Home for wildlife • Environment sustainability • For wood • Construction, etc.
Rangeland development program	May include, but not limited to: • Area closure • Bush control • Forage development
Carrying capacity	May refer to: • the maximum number of animals in an area of land that can support at low production time
Socking density	May refer to:: • the number of animals per unit area of land at a point in time
*i*ndustry requirements	May include, but not limited to: • Standard operation procedures(SOP) • Industry standards • Total Quality Management standards • Product labels • Manufacturers specifications • Operators manuals

	• Enterprise policies and procedures (including waste disposal • Recycling and re-use), and reporting requirements
Grazing strategy	May include, but not limited to: • Paddock • Rotational • Cut and carry system • Deferred, etc.
Principles of rangeland	May include, but not limited to: • Rangeland and pastoralism • Plant and animal interaction • Stocking density • Carrying capacity, etc.
Rangeland uses and stakeholders	May include, but not limited to: • People practicing traditional and commercial pastoralism • Those conserving landscape • Miners, customers and hunters • Tourists • NGO • Government land manager • Policy maker, etc.
Rangeland trend	May include, but not limited to: • Plant vigo • Condition of soil • Plant residue • Plant composition, etc.
Rangeland assessing approach	May include, but not limited to: • Target site, habitat type, etc.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Apply range land assessment approach • Calculate range land stocking density and carrying capacity • Assess rangeland condition and trend
Required Knowledge and Attitudes	Demonstrate knowledge of: • Rangeland management principle • Rangeland development strategy • Characteristics of rangeland • Land and soil conditions • rangeland species and growing requirements • Effects of nutrients of soil types • Environmental protection strategies

	• Infestation patterns for different types of weed • Relevant codes of practice, legislation and regulations
Required skills	Demonstrate skills to: • Apply rangeland assessment approach • Work with rangeland stakeholders • Measure and assess quantities and quality of rangeland • Apply environmental protection strategies in land use • Predict patterns of weed infestation
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Undertake Livestock Breeding**
Unit Code	**AGR ANP4 03 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to develop and implement a livestock breeding program that requires skills and knowledge to assess breeding requirements, select livestock for breeding, facilitate natural breeding, monitor and evaluate breeding program to meet the breeding aims of the industry.

Element	Performance Criteria
1. Assess breeding requirements	1.1. ***Breeding requirements*** are assessed and clarified according to the industry objectives. 1.2. ***Resources*** to support breeding requirements are identified and arranged. 1.3. ***Breeding options*** are selected to optimize results and consistency according to the industry objectives. 1.4. Particular livestock mating plan is determined according to supervisor instructions or the industry procedures 1.5. Economic assessments are undertaken to establish the feasibility of the breeding objectives. 1.6. ***Breeding program*** is formulated to meet the industry objectives, and is sufficiently flexible to accommodate contingencies.
2. Select livestock for breeding	2.1. ***Selection criteria*** are determined for the visual and objective methods of selecting ***livestock***. 2.2. ***Culling and replacement practice*s** are established to maintain the appropriate size and ratios of livestock. 2.3. Selected livestock are checked and monitored to ensure condition and welfare status is according to breeding program requirements.
3. Facilitate natural breeding	3.1. Particular livestock mating plan is determined according to supervisor instructions or the industry procedures. 3.2. Paddocks or yards are selected and stocked to appropriate levels.

	3.3. ***Heat detection*** is carried out. 3.4. Mating areas are secure and provide for access during joining. 3.5. Natural mating is carried out, when required, according to recognized industry codes of practice
4. Monitor breeding program	4.1. Implementation of the breeding program is monitored for efficiency and effectiveness. 4.2. Pregnancy diagnosis is conducted through rectal palpation or different techniques according to the industry requirements 4.3. Changes necessary to achieve breeding aims are prioritized and implemented according to breeding program requirements. 4.4. Allocated resources are monitored and controlled within the industry budgetary constraints. 4.5. Safe workplace and ***environmentally responsible*** practices are maintained according to ***OHS*** and ***industry requirements.*** 4.6. Relevant ***legislative requirements*** associated with livestock production are observed and complied with.
5. Evaluate breeding program	5.1 Breeding program processes and outcomes are reviewed and evaluated against the industry objectives. 5.2 Performance of facilities, resources and equipment are evaluated for effectiveness and efficiency. 5.3 Effectiveness of selection and mating criteria is evaluated for contribution to achievement of breeding aims 5.4 ***Relevant information*** is documented for continual assessment to inform future practice.

Variable	**Range**
Breeding requirements	May include, but not limited to: • An assessment of the industry breeding and production records to identify property potentials.
Resources	May include, but not limited to: • Human resources • Facilities and equipment including recording systems, personal protective equipment • Monitoring technology for breeding, pesticides, weighing and testing equipment.

Breeding options	May include, but not limited to: • Decision to straight breed or cross breed, to arrange natural mating.
Breeding program	May include, but not limited to: • Breed • The method of breeding • Joining procedures, and • Culling and replacement instructions.
Selection criteria	May include, but not limited to: • Animals farmed and production/breeding strategies. • Objective and subjective criteria may include size, age, breed, teeth for age and deformity, general appearance and condition, color, temperament, disease susceptibility, flesh color, percentage deformity, percentage mal-pigmentation, sex growth rate, body weight, breeding history, growth rate, milk production and milk quality, style and character of wool/fiber, color of fleece and greasy fleece weight.
Livestock	May include, but not limited to: • Beef and dairy cattle, pigs, horses, goats and sheep, poultry, fish.
Culling and replacement practices	May include, but not limited to: • Animals farmed and production/breeding strategies including age, size, fertility history, conformation, skeletal faults, temperament, body weight, mean wool/fiber diameter, presence of modulated wools/fibers, low fleece yield or weight, fleece rot, pigmentation, body strike and color, body weight, butter fat/milk yield, growth rate, and chronic disorders.
Heat detection	May include, but not limited to: • Observation of clinical signs, • backpressure test, • Cervical and vaginal discharge • Sniffing • Bellowing • Restlessness • Frequent urination • Other recognized tests.
Environmentally responsible	May include, but not limited to: • Negative environmental impacts may result from high density

	livestock activity, particularly in holding or confined areas, causing increased run-off flows, loss of ground cover, soil disturbance, pugging, dust problems, weed seeds in animal manure, and contamination of ground and surface water supplies. • Consideration may also be given to the safe use and disposal of veterinarian chemicals and livestock residues.
OHS	May include, but not limited to: • Maintenance of hygienic and hazard-free facilities and equipment • Handling livestock • Handling of hazardous substances • Manual handling, including lifting and carrying • Outdoor work including protection from solar radiation • Appropriate use of personal protective equipment.
industry requirements	May include, but not limited to: • SOP, industry standards, total quality management standards, product labels, manufacturers specifications, MSDS, operators manuals, industry policies and procedures (including waste disposal, recycling and re-use), and reporting requirements.
Legislative requirements	May include, but not limited to: • Animal welfare act, • OHS legislation, • Environmental protection act, and legislation, regulations and codes of practice with regard to the breeding livestock and the transfer of genetic materials.
Relevant information	• Are details of joined livestock, • Health and condition status of livestock • Details of administered preventative health treatments, • Details of culled and replaced livestock.
Materials and equipment	May include, but not limited to: • Rope • Disease testing kits • Heart girth • Gloves • Towel or tissue paper • Soap

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Assess breeding option (Natural) • Select livestock for breeding(local, cross or exotic breed) • Monitor and facilitate breeding methods(natural)
Required Knowledge and Attitudes	Demonstrate knowledge of: • Basic selection of livestock for breeding • Heat detection, arranging matting facilities • Economic assessment of production characteristics • Evaluation of costs and benefits of alternative strategies
Required skills	Demonstrate skills to: • Plan and schedule resources • Communicate in verbal and written form including the preparation of plans, document and maintain records, and report writing for the understanding of staff and management • Calculate resources and costing of program • Identify Breed characters of livestock • Carry out heat detection signs • Handle livestock safely and humanely
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Conduct Poultry Hatchery Activities**
Unit Code	**AGR ANP4 04 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude to perform hatchery operation that required hatchery house construction and fulfilling facilities, Prepare materials, tools and equipment, undertake hatchery operations monitor review and improve hatchery performance.

Element	Performance Criteria
1. Hatchery house construction and fulfilling facilities	3.1. ***Appropriate site*** is selected for hatchery house establishment according to industry requirements 3.2. Requirements for hatchery house construction and internal facilities are identified according to industry requirements 3.3. Hatchery house construction design and layout are planed according to farm objectives and standards
2. Prepare materials, tools and equipment	2.1. Required ***materials, tools and equipment*** are identified according to lists provided. 2.2. Checks are conducted on all materials, tools and equipment, and insufficient or faulty items are reported to supervisor. 2.3. Correct manual handling techniques are used when loading and unloading materials to minimize damage to self, others, load and vehicle.
3. undertake hatchery operations	3.1. Types and parts of incubators are identified 3.2. Eggs are collected, selected, candled, cleaned and setting in the incubator according to instruction 3.3. ***Routine incubator management activities*** are performed according to ***instructions***
4. Monitor, review and improve hatchery performance	4.1. The progress of hatchery production plan is reviewed regularly with management. 4.2. Physical and financial records are maintained for analysis and evaluation of hatchery performance. 4.3. Information on innovations is obtained and assessed to determine relevance and possible application. 4.4. Relevant innovations are tested to determine suitability and

	adaptability to individual circumstances, their benefit/cost assessed, and outcomes reported to the management team.

Variable	**Range**
Appropriate site	May include, but not limited to: • Access roads • Access of facilities • Market availability
Materials, tools and equipment	May include, but not limited to: • Heater • Electric lamps • Incubator • Weighing scale • Egg trays • Infrared bulb • Egg grader/Candler • Curtains • Water • Thermometer • Generator • Hygrometer • Brooding house
Routine incubator management activities	May include, but not limited to: • Controlling temperature • Checking humidity • Adjusting ventilation • Turning egg tray • opening and switching light • Eggs are transferred from setter to Hatcher prior to hatching day • Periodic egg candling
Instructions	• Enterprise policies and procedures • Manufacturer instructions • Material Safety Data Sheets (MSDS) • OHS standards and procedures • Specifications for tools, equipment and materials • Standard Operating Procedures (SOP)

	• Verbal directions from manager or supervisor • Work instructions and standards • Work notes.
PPE	May include, but not limited to: • Overalls • Gloves • plastic boots/shoes
OHS	May include, but not limited to: • Using of relevant protective clothing and equipment, • Use of tooling and equipment, • Workplace environment and safety handling of material, • First aid kit • Hazard control and hazardous materials and substances. • Using gowns, rubber boots of appropriate size, gloves etc, • Following OHS procedure designated for the task • Checking and fulfilling required safety devices before starting operation • Apply safe operating procedures regarding: ➢ Electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors. • Apply emergency procedures: ➢ Emergency shutdown and stopping of equipment, ➢ First aid application and site evacuation. electrical safety, ➢ Machinery movement and operation, ➢ Working in proximity to others and site visitors.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare materials, tools and equipment • Conduct incubator management activities • Perform egg candling • Identify facilities used in hatchery house

Required Knowledge and Attitudes	Demonstrate knowledge of: • Requirements, methods and procedures for handling, unloading, storing, transferring and turning eggs • Types, uses, cleaning, maintenance and storage of machinery, equipment and tools used in incubating operations • Range, effects and impacts of environmental parameters on incubating eggs • Types, handling, use and disposal of fumigating agents, work health and safety and environmental practices for these agents • Relevant environmental and sustainability requirements, and procedures for disposal and management of wastes and debris • Relevant documentation and records that are required
Required skills	Demonstrate skills to: • Collecting and store eggs • Monitor and operate setter • Transfer eggs to Hatcher • Fumigate setter or Hatcher • Monitor and operate Hatcher • Complete hygiene and administration activities • Candling eggs
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Handle and Process Animal Products and By-Products**
Unit Code	**AGR ANP4 05 0322**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to identify animal products and by products, determine animal product and by product handling systems, install and operate animal products and by products handling equipment.

Element	Performance Criteria
1. Identify animal products and by products handling and processing requirements	1.1. Available animal products and by products handling system are compared to design requirements and suitable systems. 1.2. Maximum peak flow of ***animal products and by products*** delivery is measured and recorded. 1.3. Relevant legislation including OHS and ***human health requirements*** are identified and compliance targets established. 1.4. ***Materials and equipment selection*** is carried out to meet the product requirements for animal products and by products collection routines
2. Determine animal product and by product handling and processing systems	2.1. Available animal products handling and processing systems are identified and analysed in line with product requirements for quality and quantity. 2.2. Components of the on-farm animal products and by products handling systems requirements are identified to meet ***standard industry guidelines*** and herd and animal products factory needs. 2.3. ***Slaughtering procedure*** is performed and processed meat distributed to butchers and export according to meat quality and hygiene required standards 2.4. Products and By products are received and stored following storage procedures. 2.5. Stock balance control is ensured for safe processing activities based on guideline
3. Install and operate animal products and	3.1. Plate cooler and other components of the pre-cooling system are installed in line with established system design and

by products handling equipment	industry standards. 3.2. Refrigeration system is installed to meet design specifications. 3.3. ***Commissioning tests*** are completed as required to ensure that the operation of all elements of the handling systems system complies with performance targets and animal products and by products supply quality standards. 3.4. ***Routine maintenance program*** requirements are completed in line with manufacturers' recommendations. 3.5. Animal by-product is stored and restocked and cleaning work area performed.

Variable	**Range**
Animal products and by products	May include, but not limited to: • Milk and milk products • Meat • Honey • Egg and silk • Fillet, and others
Human health requirements	May include, but not limited to: • All operations concerned with the human food chain need to undertake reasonable duty of care with regard to human health. • Health legislation will provide guidance for the design and construction of animal product handling facilities.
Materials and equipment selection	May include, but not limited to include: • Selection needs to consider animal products and by products entry temperature as well as other critical design considerations such as the refrigeration system for specific animal products and by products and the type of product must be taken into consideration.
PPE	May include, but not limited to: • Boots • Sunhats • Sunglass • Gown • Overalls • Raincoat • Gloves

Standard industry Guidelines	May include, but not limited to include: • The need to reduce animal products and by products within specified period • Preferred temperature ranges for cooling water • Construction standards in line with industry minimum standard recommendations. • Standards for animal products and by product sing system installation are provided in the
Slaughter procedure	May include, but not limited to: • Penning animal (lairage) • Stunning and Bleeding
OHS hazards	May include, but not limited to: • OHS hazards include: hazards of plant and machines, hot water, noise, electrical and ergonomic hazards. • An awareness of the human health issues associated with the operation of cooling towers should also be considered.
Commissioning test	May include, but not limited to: • A mandatory requirement by the animal products factory to provide both the animal products farmer and the manufacturer of the operating efficiency of the system.
Routine maintenance program	May include, but not limited to: • Service and cleaning of fans and fins on refrigeration units together with the checking and replacement of drive belts, the servicing of compressors and ensuring correct thermostat settings and operation.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Prepare and handle animal products and by-products • Perform tests on animal products handling • Operate equipment to handle animal products and by products
Required Knowledge and Attitudes	Demonstrate knowledge of: • On-farm animal products and by products handling systems. • Basic principles of animal products and by products, processing, packaging, storage and preservation techniques. • Animal products and by products quality • Animal products and by products handling systems • Relevant legislation relating to animal products and by products

	handling systems • Applicable human health standards requirements
Required skills	Demonstrate skills to: • Select and implement the best animal products handling systems (processing, packaging, and storage and preservation techniques) • Recognise and rectify operational faults in animal products and by products handling systems • Apply tests on animal products handling equipment and materials • Undertake installation and repair of handling equipment • Apply post harvest management systems • Communicate and coordinate the working groups effectively and efficiently.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Develop Integrated Farm Production Systems**
Unit Code	**AGR ANP4 06 0318**
Unit Descriptor	This unit covers the knowledge, skills and attitude required to develop a pasture and crop program, implement pasture and crop management program, monitor crop/pasture growth and fodder production, develop livestock integrated farming and review production level to support farm community and industry.

Element	Performance Criteria
1. Develop integrated farm production plan	1.1. Livestock-crop integration ***technologies*** are identified according to need of industry. 1.2. Chicken-fish integrated farming is determined according to ***production plan*** 1.3. Plant varieties and livestock are selected that are best suited to climate, seasonal conditions and marketing goals according to industry objectives. 1.4. Budgetary constraints are identified and maintained according to industry requirements.
2. Implement pasture and crop management program	2.1. ***Pasture*** and ***crop*** program is implemented according to industry requirements. 2.2. Strategic grazing is carried out, where necessary, to reduce or eradicate areas of weed infestation, where planned. 2.3. Pasture and crop management practices are determined appropriate to crop/pasture type and applied accordingly. 2.4. Processes to minimise waste and soil degradation are introduced and implemented according to environmental standards.
3. Monitor crop/pasture growth and fodder production	3.1 Longer term trends in weed, pest and disease incidence are determined and any necessary changes to control measures are monitored according to industry requirements. 3.2 Soil structure and erosion are monitored and necessary changes to cultural practices, grazing management and drainage are determined according to production objectives.

	3.3 Irrigation and drainage systems are checked and scheduled regularly and maintained, according to guideline. 3.4 Grazing management is monitored to ensure high pasture and livestock production levels according to industry requirements 3.5 Crop/pasture maturity is monitored and harvesting is undertaken to meet marketing and production targets.
4. Review production level	4.1. Pasture and crop yields are monitored and evaluated against forecast production levels according to industry requirements. 4.2. Grazing and cropping programs are evaluated for efficiency and effectiveness, and documented for future best practice. 4.3. Evaluation of production performance of each industry is undertaken and documented for use in reviewing and revising management program.

Variable	**Range**
Technologies	May include, but not limited to: • Integrated crop-livestock • Crop residue and soil management • Dung and urine use and recycling of nutrients • Cropping pattern, livestock and nutrient • Agro-forestry and soil fertility
Production plan	May include, but not limited to: • Accommodation demand for food • Utilization of limited resource • Conservation of environment • Reduction of environmental risk • Diversification of family food resource • Increment of employment opportunity • Productivity and sustainability
Pasture	May include, but not limited to: • All unimproved and improved rangelands used for grazing • Temperate and tropical pastures • Crop stubble • Shrubs and trees • Residues that may be used for stock feed
Crop	May include, but not limited to:

	• Agricultural broad acre crops (wheat and coarse grains) • Grain legumes • Oilseeds • Sugar • Intensive fruit and vegetable crops • Field and tree crops • Vines • Hay crops

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Carry out production plan of integrated farm • Undertake cost-benefit analysis of integrated farm • Explain environmental implication of integrated farm
Required Knowledge and Attitudes	Demonstrate knowledge of: • Importance of integrated farm • Land and soil conditions • Effects of nutrients of soil types • Financial analysis techniques • Environmental protection strategies • Cultivation requirements for different types of crop • Infestation patterns for different types of weeds, pest, disease • Different methods of integrated farm managements practices
Required skills	Demonstrate skills to: • Measure and assess quantities feed and fertilizer • Apply environmental protection strategies in land use • Assess financial strategies and prepare budgets • Use oral communication skills/language competence • Use numeracy skills to estimate, manage ,calculate and record complex workplace measures
Resources Implication	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Collect, Manage, Analyse and Interpret Data**
Unit Code	**AGR ANP4 07 0322**
Unit Description	This unit covers knowledge, skills and attitude required to record and organize collected data, present data in tables, charts and graphs, analyse, interpret and give feed back to the stakeholder based on the finding.

Element	Performance Criteria
1. Record and organize data	1.1. ***History record sheets*** are prepared. 1.2. Information is recorded and organized in a format suitable for analysis, interpretation and reporting in accordance with ***industry requirements***. 1.3. Information held by the service unit is assessed for accuracy and relevance in line with industry requirements. 1.4. Typing or transcriptional errors in data are rectified using industry procedures 1.5. Methods of collecting data are made reliable and efficient use of resources in accordance with organizational requirements. 1.6. ***Business equipment*** is used to access, organize and monitor data in accordance with organizational requirements. 1.7. Information is updated, modified, maintained and stored in accordance with organizational requirements.
2. Present data in tables, charts and graphs	2.1. Data are presented accurately in tables and charts using given formats and scales. 2.2. Obvious features and trends in data are recognized and reported
3. Analyse and interpret data	3.1. Objectives of analysis are clearly defined and consistent with industry requirements. 3.2. Methods of ***data analysis*** are made reliable and suitable to research purposes. 3.3. Assumptions used in analyses are made clear, justified and consistent with industry objectives.

	3.4. Conclusions are supported by evidence and contributed to the achievement of business objectives.
4. Report data	4.1. Data are prepared in an appropriate format, style and structure using suitable business technology. 4.2. Structure and format of reports are made clear and conform to industry requirements. 4.3. Findings are reported and distributed in accordance with industry requirements. 4.4. Feedback and comments on suitability and sufficiency of findings is obtained in accordance with enterprise requirements.

Variable	**Range**
History record sheets	May include, but not limited to: • Owner name • Owner address • Date • Type of service given • Possible clinical signs observed for the intended service • Appointment date for further action • Etc
Industry requirements	May include, but not limited to: • Quality assurance and/or procedures manuals, bio security • Requirements, animal welfare, procedures for updating records, OHS policies, procedures and programs, service plans, systems and processes, and defined resource parameters.
Business equipment	May include, but not limited to: • Photocopier, computer, internet, software programs, fax machine and telephone systems.
Data analysis	May include, but not limited to: • Feedback on results, review of previous data and service figures, peer review, data sampling and statistical analysis.

Evidence Guide

Critical Aspects of Competence	Must demonstrate knowledge and skills to • Record and organize service data • Analyze, interpret and present data • Report and distributes finding • Obtain feedback and comments on suitability and sufficiency of findings.
Required Knowledge and Attitude	Demonstrate knowledge of: • The relevant legislation, industry and enterprise codes of practice and quality assurance procedures that impact on intensive service • Industry record keeping and recording practices • Industry guidelines and procedures relating to collection, analysis and maintenance of service data • Methods to collect and analyze service data • Data management systems and methods • Business equipment • Principles of report writing and data presentation
Required Skills	Demonstrate skills to: • Collect and organize service data • Performing simple calculations • Preparing and interpreting straightforward tables, graphs and charts • Applying calculations in the workplace • Coding, recording and checking data accurately • Analyze and interpret data • Present and report data
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Animal Production Level IV	
Unit Title	**Facilitate Animal Health Program**
Unit code	**AGR ANP4 08 0322**
Unit descriptor	This unit covers the knowledge, skills and attitude required to identify and report sick animal, facilitate livestock diseases prevention and control program, assess common animal disease and carryout post treatment activities to assist veterinarian.

Element	Performance Criteria
1. Identify and report sick animals	1.1. Regular observations are taken to assess animals' health according to the requirements of the organization. 1.2. Work plan of animal health program is prepared and implemented according to the industry guidelines. 1.3. Animal health status is recorded and reported in accordance with ***industry requirements***. 1.4. OHS ***hazards*** are identified, risk assessed and suitable controls are implemented. 1.5. Animals are safely handled and restrained without causing harm or injury to animals or handler. 1.6. Withdrawal periods are checked and treated animals are identified to ensure isolation from non-treated animals.
2. Assess common animal disease	2.1. ***Animals*** affected by ***infection*** or ***parasites*** are identified and the type and severity of infestation or infection is determined. 2.2. Animals affected by ***metabolic disease*** or ***protozoa*** are identified and the type and severity of infestation is determined. 2.3. ***Equipment and materials*** required for the treatment of animals are identified to manufacturer's specifications and enterprise requirements. 2.4. Treatment site is prepared to industry standards according to industry requirements.
3. Facilitate livestock disease prevention and control program	3.1. Vaccination programs of animals are prepared and implemented in accordance with industry requirements. 3.2. Animal disease outbreak is reported to a veterinarian.

	3.3. Routine prevention procedures for disease or parasite infestation are safely carried out. 3.4. Vaccinated and non-vaccinated animals are identified and recorded.
4. Carryout post treatment activities	4.1. Animal's health and condition are monitored post- treatment and abnormalities reported according to industry requirements. 4.2. ***Environmental implications*** associated with the treatment of animals are identified, assessed and controlled according to industry requirements. 4.3. Equipment and worksite are cleaned and waste, including ***animals' residues***, is disposed of according to OHS and industry requirements. 4.4. ***Relevant information*** is documented according to industry requirements.

Variable	**Range**
industry requirements	May include, but not limited to: • SOP • Industry standards, production schedules • Material Safety Data Sheets • Work notes and plans • Product labels • Manufacturers specifications • Operators manuals • Industry policies and, and reporting procedures • Animal handling systems and procedure including zoo, noses control • Manual handling including lifting and carrying • Outdoor work, including protection from solar radiation • The use and handling of veterinary chemicals • The use of personal protective equipment
Hazards	May include, but not limited to: • Animals movement and handling • Exposure to hazardous noise • Dust and solar radiation and veterinarian chemicals, and

	zoonotic diseases
Animals	May include, but not limited to: • Cattle, sheep, goat, equines, swine, poultry,
Infections	May include, but not limited to: • Black leg, anthrax, tetanus, pasteurellosis, tuberculosis, salmonellosis, brucellosis, mastitis, lumpy skin disease, rabies, foot and mouth disease, African horse sickness, new casle disease, infectious bursa disease, or Gumboro, Markes disease, Fowl box, sheep pox, infectious coryza, Fowl cholera etc.
Parasites	May include, but not limited to: • Endo parasites and • Ecto parasites
Metabolic disease	May include, but not limited to: • Hypocalcaemia/milk fever, bloat/rumen tympany, ketosis, etc.
Protozoa	May include, but not limited to: • Trypanosomiasis, coccidiosis, etc.
Equipment and materials	May include, but not limited to: • Syringes, antibiotics and vaccines, drench guns, overhead gantry, yards, drenches, scales, races, gates, backpacks, faeces collection plastic bags, plastic globes, sample jars, portable coolers, kits, water pump, temporary yards, sharpening stone, tanks. • Preparation may include the calibration of equipment to check accuracy of dose rates.
Environmental implications	May include, but not limited to: • Negative environmental impacts may result from the unsafe use and disposal of veterinarian chemicals (dipping, jetting, parasite control) and any consequent residual chemicals. • Impacts may also result from high concentrations of animals on ground cover causing run-off flows, loss of ground cover, soil disturbance, pugging, dust problems, weed seeds in animals manure, contamination of ground and surface water supplies, and odors.
Animals residues	May include, but not limited to: • Fly blown fleece • Maggots and chemical residues.
Relevant information	May include, but not limited to: • Details of equipment and materials used

	• The performance of equipment • Faults and malfunctions • Number of treated livestock and details of treatment • Any tests carried out and results • Evaluation of treatment effectiveness and observed abnormalities or behavior in livestock.

Evidence Guide	
Critical Aspects of Competence	Must demonstrate knowledge and skills to: • Identify sick animals • Prevent and control common disease and parasite • Recognize and remedy livestock sickness within veterinarian guidelines • Plan an annual program of preventative health treatments
Required Knowledge and Attitudes	Demonstrate knowledge of: • Storage conditions for a range of veterinary chemicals • Animal diseases prevention and control mechanisms • Zoonoses diseases and mode of transmission • Environmental controls and codes of practice applicable to the organization including bio-security • Sound management practices and processes to minimize noise, odors, and debris from the livestock operations • Relevant legislation and regulations relating to waste and environment management, and animal health • Vaccination program and procedures identification and prescribed treatments for infections and infestations • Animals health and nutritional requirements • Types of parasite infestation and their symptoms • Withdrawal period for treated animals • Animals handling and restraint techniques
Required skills	Demonstrate skills to: • Detect possibility of disease through parameters such as behaviour or length of time required to eat food • Recognize abnormal physiological and behavioral signs in livestock • Undertake coordination of personnel for animal disease prevention and control • Communicate effectively with staff, contractors and suppliers • Select and apply chemicals appropriately to treat infections and infestations • Provide care and humanely handle animals • Clean environments • Identify the symptoms of parasite infestation

	• Calculate animal's numbers and measure treatment dosage and rates under supervision.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational standard : Animal Production Level IV	
Unit Title	**Develop value chain analysis**
Unit Code	**AGR ANP4 09 0322**
Unit Descriptor	This unit covers the knowledge, skills, and attitude needed to Understand value chain ,Identify concepts of value chain ideas Develop the value chain and Upgraded value addition

Elements	**Performance Criteria**
1. Understand concepts of value chain	1.1 ***Concept of value chain*** are understood. 1.2 Value chain scopes are understood and identified. 1.3 ***Principle of value chain*** are understood and identified. 1.4 Value chain ***characteristic*** are understood and identified. 1.5 Value chain ***Importance*** are discussed and understood. 1.6 ***Concept of value addition*** are understood and determined.
2.Identify Value chain analysis	2.1 ***Dimension*** and ***structures*** of Value chain are identified and interpreted 2.2 ***Value chain actors*** are identified according to the objective and interest or need of chain actors 2.3 ***Value chain maps*** are illustrated for different ***agricultural products*** 2.4 Value chain techniques for **value addition** are identified and analyzed 2.5 ***Contract farming*** system is established to promote value chain.
3.Develop value chain	3.1 Value chain ***parameter***s are analyzed to compare the gaps between the existing and the benchmark. 3.2 ***Constraints and gaps*** are collected, analyzed and ranked according to the priority used to develop value chain 3.3 ***Steps of value chain*** development are identified 3.4 Value Chain ***selection techniques*** are identified to develop value chain 3.5 Potential ***interventions*** for value chain development are identified
4. Upgrade value addition	4.1 ***Environmental considerations*** are understood to upgrade value addition development 4.2 Value chain actors are identified for ***Value addition*** 4.3 Value chain is ***upgraded*** for agricultural products to measure performance of value chain development 4.4 Custemer feedbacks are collected, organized and documented to improve

	Custemer satisfaction

Variable	Range
Concept value chain	May include, but not limited to • Market oriented products • General Principle • Value chain actor • Mapping • Value addition
Principles of value chain	May include, but not limited to • Value chain mapping • Identifying the distribution of benefits of actors • Examining the role of upgrading • Governance in the value chain
Characteristic	May include, but not limited to • Inbound logistic • Operation • Out bound logistic • Marketing • Sales • Services
Importance	May include, but not limited to • Simple and better way to identify gaps and technologies. • Increases efficiency and systemic competitiveness of local enterprise • Primary targets involvement between local sector and sub sector • Reduces production costs and improves profitability • Improves customer satisfaction by providing quality product and service
Dimension	May include, but not limited to • Sourcing of Inputs and supplies • Production capacity and technology • End-markets and trade • Governance of value chains
Structures	May include, but not limited to • Input sector: • Farm/production sector: • Product sector

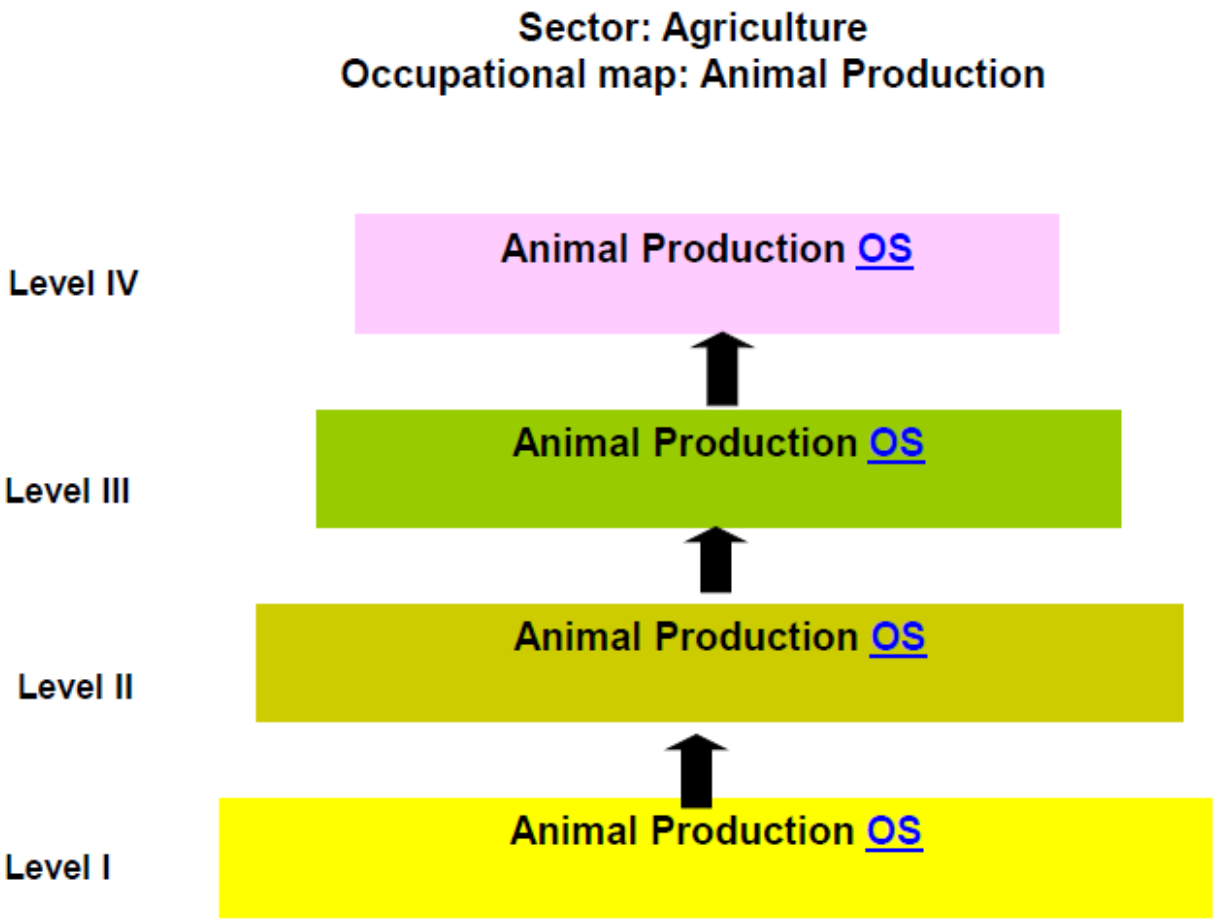
Value chain actors	May include, but not limited to • Farmers, • Traders, • Processors, • Transporters • Wholesalers • Retailers and final consumers
Agricultural sectors	May include, but not limited to • Crop farming • Forestry • Livestock • Fisher and aquaculture • Agricultural cooperative • Agricultural extension service
Parameters	May include, but not limited to • Yield • Quality • Cost • Time
Technology constraints	May include, but not limited to • Marketability • Profitability • Capability and Usefulness • Functionality • Import Substitution • Feasibility • Adaptability • Potential Impact to the MSE • Woman Empowerment • Employment
Steps of value chain	May include, but not limited to • Value chain selection • Data collection • Value chain mapping • Value analysis • Gap identification • Prioritizing constraints

	• Technology identification & categorization
Selection technique	May include, but not limited to • Integration economic • Environmental • Social • Institutional
Environmental considerations .	May include , but not limited to: • Sustainability of the land use system for production and processing • Sources of energy • Efficiency of energy use • Greenhouse gas emissions • Water use efficiency and possibilities of contamination • Quantity and character of chemicals being used • Waste production and management
Value addition	May include, but are not limited to: • measured against its contribution to the customer • Technical benefits/features • Location benefits/features • Aesthetic benefits/features • Information benefits/features
Contract farming	May include, but are not limited to: • Agreement between buyer and seller • Farmer and processing making firm for production • Supple of agricultural product
Upgraded	May include, but are not limited to: • Farm crop • Milk and Milk Products • Meat and Meat Products • Poultry Products • Fish and Fish Products • Honey and Honey Products

Evidence Guide	
Critical Aspects of Competence	A Candidate must demonstrate the ability to: • Understand concept of value chain

	• Identify Value chain actors • Apply techniques for value addition • Understand selection technique to develop value chain • Identify potential interventions to value chain analysis • Evaluate value chain addition • Contract farming system is established to promote value chain • Describe value chain upgraded and identify environmental issues for value chain development
Required Knowledge and Attitude	A candidate must demonstrate the knowledge and attitude to : • Understand concepts of value chain • Understand and Recognize characteristic of value chain • Understand dimension and structures of value chain • Identify principles of value chain for agricultural production • Identify value chain actors and Illustrate value chain mapping in agricultural product • Identify value chain analysis improve vale chain development • Understand the Bench mark analyze to develop value chain analysis • Observe environmental issue to upgrade Value chain • Determine value chain upgrade and focus on Value chain addition
Required Skills	A candidate must demonstrate the Skills to : • Identify concepts of value chain • Recognize and describe characteristic of value chain • Describe dimension and structures of value chain • Apply principles of value chain for agricultural production • Classify value chain actors and Illustrate value chain mapping in agricultural sector • Analyze the Bench mark to develop value chain analysis • Apply value addition and determine value chain upgrade development value chain analysis • Contract farming system is established to promote value chain • Describe value chain upgraded and identify environmental issues for value chain development
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview/Written Test • Observation/Demonstration with Oral Questioning

Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.



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