

BQA NCQF Qualification Template

DNCQF.FDMD.GD04

Issue No.: 01

QUALIFICATION DEVELOPER		BOTSWANA UNIVERSITY OF AGRICULTURE AND NATURAL RESOURCES					
TITLE		Diploma in Animal Health and Production			NCQF LEVEL		6
FIELD		Field 1: Agriculture and Nature Conservation		SUB-FIELD		Animal Health and Production	
New qualification		√	Review of existing qualification				
SUB-FRAMEWORK		General Education			TVET		Higher Education
QUALIFICATION TYPE		Certificate			Diploma	√	Bachelor
		Bachelor Honours			Master		Doctor
CREDIT VALUE						360	
RATIONALE AND PURPOSE OF THE QUALIFICATION							
<p>Rationale</p> <p>The livestock industry in Botswana is a major contributor to the national economy. Botswana is known worldwide as a producer of grass-fed beef. To sustain livestock productivity, the country requires well-trained manpower in disease control, livestock management and production, as well as processing for quality livestock products. There is also a need to train future farmers. The Diploma in Animal Health and Production (DAH&P) qualification will train middle level manpower who will focus on these vital areas of the livestock industry. Botswana's vision 2036 has human and social development as one of the four pillars. This pillar calls for education and skills development in all sectors, quality education that is outcome based and emphasises technical and vocational skills. Additionally, the Agriculture Human Resource Development (HRDC) plan (2015) recognizes that Agriculture contributes 2% to the gross domestic product (GDP) with the livestock sector accounting for a significant part of the agriculture contribution.</p>							

Agriculture remains the largest single employer in Botswana, at 25 percent. And it is a widely held view that the sector has the greatest potential for growth and employment creation. A vivid example has been the growth in chicken meat and egg production. Botswana is now self-sufficient in both. There is potential for similar success with pig and dairy production. The Agriculture HRD plan reviewed progress made on the implementation of the National Policy on Agricultural Development (NPAD) as reviewed in 2014. The HRD plan identified major challenges in the livestock sector, most notable being stagnation in livestock population since 1979. Consistent with this stagnation is lack of improvements in productivity indicators including birth rates, mortality and offtake rates for cattle, small stock and pigs. Thus continued, even enhanced investment in training cadres with relevant technical skills in animal health and production is imperative. Animal health technicians are required for the implementation of the Agriculture HRDC plan, specifically to improve productivity indicators in the livestock sector. Short-term re-training of the cadre can impart competencies to participate in processing of specific livestock products, such as hides and skins and thus value addition. The HRDC priority occupation list for 2019 has projected a need for veterinary technicians and assistant in the following manner 2019 (30), 2020 (31), 2021(33), 2022(35), 2023(36) and 2028 (46), which indicates an increase in the number of graduates needed by the industry. Graduates of this qualification will be recognised under the Botswana Veterinary Surgeons Act of 2008, and by the World Organisation for Animal Health (OIE), as veterinary paraprofessionals. In addition, the Department of Veterinary Services (DVS), a key stakeholder, fully supports the qualification.

Purpose

The purpose of this qualification is to produce graduates with knowledge, skills and competence to:

- Carry out disease control and prevention.
- Conduct and advise on animal husbandry practices.
- Proffer advice to farmers on the use of drugs, animal health care and welfare, proper nutrition and breeding of livestock.
- Assess animal products and by-products for quality.
- Carry out animal health extension services in communities.
- Demonstrate competency in livestock entrepreneurship and good communication skills as well as ability to work with other people.

ENTRY REQUIREMENTS (including access and inclusion)

Minimum entry requirements for applicants into this qualification shall be:

NCQF level 4, Certificate IV or equivalent, with passes in five subjects, including English, Mathematics and Science.

Candidates who do not meet the above minimum requirements will be considered for entry through Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT).

QUALIFICATION SPECIFICATION

SECTION

B

GRADUATE PROFILE (LEARNING OUTCOMES)

ASSESSMENT CRITERIA

1. Demonstrate practical knowledge and skill on proper animal handling and husbandry practices.

- 1.1 Restrain livestock skillfully by the use of ropes or crush to conduct animal husbandry procedures; branding, castration and dehorning.
- 1.2 Identify tools and equipment used in different types of livestock.
- 1.3 Use husbandry tools and equipment properly.
- 1.4 Demonstrate skill and competences in the execution of husbandry procedures; branding, castration and dehorning.
- 1.5 Apply first aid treatment to animals' injuries resulting from husbandry procedures.

2. Demonstrate in-depth knowledge on animal health, welfare, standards, and practices by providing advice on disease prevention and control methods

- 2.1 Carry out clinical examination of sick animals to recognise diseases.
- 2.2 Collect and submit relevant samples to the National Veterinary Laboratory (NVL)
- 2.3 Carry out treatment, control and prevention of livestock diseases; restricting animal

	<p>movement, disease surveillance and monitoring, as well as vaccination.</p> <p>2.4 Describe different types and forms of drugs and advise farmers on their appropriate use.</p> <p>2.5 Demonstrate the appropriate way of handling, storage and dosage of various drugs of livestock.</p> <p>2.6 Describe how to take good care of farm animals; proper transportation, hobbling, feeding and shelter.</p> <p>2.7 Carry out postmortem examination and submit relevant samples to the NVL.</p> <p>2.8 Assist Veterinary Surgeons in carrying out surgical procedures; caesarian section, spay, circumcision and others.</p>
3. Demonstrate to farmers knowledge of proper livestock feeding and its effects on animal production and quality of products and by-products.	<p>3.1 Demonstrate knowledge of proper feeding practices of livestock according to physiological status.</p> <p>3.2 Design appropriate feeds for different species of livestock.</p> <p>3.3 Evaluate the quality of animal products and by-products.</p>
4. Demonstrate competency on the provision of animal health extension services to the farming communities.	<p>4.1 Disseminate relevant information to farmers on annual extension activities.</p> <p>4.2 Advise on government subsidy schemes intended to assist farmers improve livestock production.</p> <p>4.3 Communicate effectively on new livestock technologies, to improve livestock production.</p>
5. Demonstrate knowledge and skills in livestock entrepreneurship, and soft skills	<p>5.1 Educate farmers on livestock farm record keeping and inventory.</p>

such as communication, team-work and basic accounting.	<p>5.2 Explain basic economics and accounts to farmers as it applies to the running of a successful livestock enterprise.</p> <p>5.3 Demonstrate good communication skills when dealing with different stake holders.</p> <p>5.4 Demonstrate the ability to work as a team member.</p>
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QUALIFICATION STRUCTURE			
SECTION C			
FUNDAMENTAL COMPONENT Subjects / Units / Modules /Courses	Title	Level	Credits
	Mathematics	5	12
	General and Inorganic Chemistry	5	12
	General Physics for life sciences I	5	12
	Biology of Cells	5	12
	Communication and Academic Literacy Skills	5	12
	Computer Skills Fundamentals	5	8
	Physical and Organic Chemistry	5	12
	Biodiversity	5	12
CORE COMPONENT Subjects / Units / Modules /Courses	Agricultural Economics	6	8
	Animal Anatomy and Physiology	6	12
	Introduction to Range Science	6	8
	Biometry I	6	8
	Pharmacology and Toxicology	6	12
	Parasitology	6	12
	Introduction to genetics	6	8
	Agricultural Extension	6	12
	Livestock Feeds and Feeding	6	12
	Reproduction and Obstetrics	6	12
	Non-Infectious Diseases	6	8

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	Food Hygiene and Public Health	6	12
	General Microbiology	6	8
	Industrial Attachment	6	12
	Fodder Production	6	8
	Infectious Diseases	6	12
	Fundamentals of Epidemiology	6	12
	Fundamentals of Surgery	6	12
	Pathology	6	12
	Beef Production	6	8
	Poultry Production	6	12
	Dairy Production	6	12
	Sheep and Goat Production	6	8
	Pig and Rabbit Production	6	12
ELECTIVE COMPONENT Subjects / Units / Modules /Courses	Elective/General Education Course		
	Pet Management	6	8
	Equine Management	6	8
	Food Hygiene and Safety	6	8
	Animal Biotechnology	6	8
	Candidates may take at least two (2) electives. For purposes of this qualification, any of the listed courses may be taken as an elective.		

Rules of combinations, Credit distribution (where applicable):

Rules of Combination

Credit Distribution

Level	Total Credits
5	92
6	268
TOTAL	360

ASSESSMENT AND MODERATION ARRANGEMENTS

Formative assessment

Learners will be subjected to the formative or continuous assessment that will contribute towards the final grade. This contributes 50% of the final mark of the course.

Summative assessment

Learners will be required to undergo a written final examination for each course, which will also contribute towards the final mark for the course, which constitutes the remaining 50% of the overall mark.

Moderation

There will be internal and external moderation, carried out by qualified professionals registered and accredited by BQA as Assessors and Moderators

RECOGNITION OF PRIOR LEARNING (if applicable)

Candidates may apply for Recognition of Prior Learning or Credit Accumulation Transfer, but they are required to provide relevant evidence of such training. In addition, such candidates may have to undergo appropriate formal assessment for the award of credits towards the qualification in accordance with applicable institutional RPL policy and relevant national policy framework. The implementation of RPL shall also be consistent with requirements, if any, prescribed for the field of study by relevant national, regional, or international professional bodies.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Vertical Progression

Holders of the qualification who wish to further their studies at NCQF level 7, may pursue the following:

- i. Bachelor of Science in Animal Science
- ii. Bachelor of Veterinary Biomedical Science
- iii. Bachelor of Veterinary Science (NCQF level 8)
- iv. And other allied qualifications

Horizontal Progression

Holders of the qualifications can also consider pursuing related qualification (at NCQF level 6) such as:

- i. Diploma in Agriculture
- ii. Diploma in Poultry
- iii. Diploma in Dairy
- iv. Diploma in Meat Processing
- v. Diploma in Leather Technology, for purposes of multi-skilling to meet the demands of the dynamic industry.

Employment Pathways

Holders of the qualification will have requisite competencies and attributes to work as:

- Professionals in line Ministries
- Farm Managers
- Cooperative Development Advisors
- Advisors in Non-Governmental Organisations
- Consultants in various Organisations
- Programmes and Projects Implementers
- Self-employed Entrepreneurs

QUALIFICATION AWARD AND CERTIFICATION

Learners shall be awarded Diploma in Animal Health and Production qualification after obtaining the required total of 360 credits. The Education Training Provider (ETP) shall issue a certificate of the Diploma in Animal Health and Production to those candidates who have been awarded the qualification.

REGIONAL AND INTERNATIONAL COMPARABILITY

There is regional and international comparability that was done.

Regionally

University of South Africa (UNISA) offers a qualification of Diploma in Animal Health, at NCQF level 6 with an identical credit load.

Similarities

UNISA offers similar courses, which are approved by the South African Qualification Authority (SAQA) as is the case with the requirement of BQA for the proposed qualification, and both have a total of 360

credits. The qualification generally compares well with the UNISA qualification since both qualify Veterinary Technicians at NQF level 6, with knowledge and skill in animal health to provide basic animal health care, disease control, and entrepreneurship in livestock farming. The graduates are also recognized by their respective Veterinary Councils.

Differences

It is compulsory for learners to register with the South African Veterinary Council (SAVC), without which they are not allowed to proceed. The University emphasises on pre-requisites for some course modules and appears to go a bit in-depth with modules like Animal Diseases and Epidemiology, unlike this qualification. The University also offers some modules, such as Management, Zoo technology and Environmental Awareness, which are not offered by this qualification.

Sokoine University of Agriculture (SUA) in Tanzania which offers a qualification of Diploma in Tropical Animal Health and Production, with similar courses and a duration of 2 years.

Similarities

This qualification generally compares well with the SUA qualification as both train Veterinary Paraprofessionals with knowledge and skill in animal health to provide basic animal health care, disease control, and assist with business skills in livestock farming. The exit-level outcomes are similar in scope for both qualifications.

Differences

The university has not provided course modules offered and total credits, for comparison.

Internationally

There is a similar qualification of Diploma in Animal Health and Production offered by **University Putra Malaysia (UPM)** in Malaysia, with a slightly longer duration but lower credit load.

Similarities

This qualification generally compares well with the UPM qualification as both train Animal Health Technicians with knowledge and skill in animal health to provide basic animal health care, disease control, and entrepreneurship skills in livestock farming.

Differences

The main difference observed with UPM is that they offer a qualification which runs for 3 years whereas this qualification has a duration of 2.5 years. The proposed qualification has a credit load of 360 credits whilst UPM offers one with 112 total credits, which appears lower.

REVIEW PERIOD

The qualification shall be reviewed every 5 years.