

## SECTION A

<b>SECTION A</b>						
<b>QUALIFICATION DEVELOPER</b>	Gaborone University College of Law and Professional Studies					
<b>TITLE</b>	Diploma in Agriculture				<b>NCQF LEVEL</b>	6
<b>FIELD</b>	Agriculture and Nature Conservation		<b>SUB-FIELD</b>	Agriculture		
New qualification		✓		Review of existing qualification		
<b>SUB-FRAMEWORK</b>		General Education		TVET		Higher Education
<b>QUALIFICATION TYPE</b>		Certificate		Diploma	✓	Bachelor
		Bachelor Honours		Master		Doctor
<b>CREDIT VALUE</b>					<b>360</b>	
<b>RATIONALE AND PURPOSE OF THE QUALIFICATION</b>						
<p><b>RATIONALE:</b></p> <p>With reference to National Development Plan 11 (NDP 11; 2017 -2023), it was widely expressed that the country's dependence on minerals and cattle farming cannot remain sustainable in a changing global economy. A number of policy initiatives are required in order to locate and operationalize sustainable development as the core of NDP 11. In this context, major programs and projects in key sectors such as mining, agriculture, energy, water, manufacturing and tourism will be subjected to sustainability appraisal, planning and implementation during NDP11 to ensure that social, economic and environmental objectives are maximised and harmonized. Due recognition was given to the fact that crop production and other aspects of agriculture needed proper management. There is need for expertise in production of agricultural products, first and foremost as well as management skills to ensure that skill in production is buttressed on administrative capacity. Essentially, Agriculture has been established to be a critical socio-economic element of national development.</p> <p>Botswana is in a phase of growth regarding the economy and has vast natural land resources upon which the agro-industry is based. The NDP 10 recognizes that "overall agriculture is characterized by low productivity that has been declining over the years. The major challenges include persistent shortage of water, poor grazing conditions mainly due to recurring droughts, poor management practices, low technology use, pests and diseases, and business skills".</p>						

The HRDC Priority Skills (Current and the Future) of March 2019 clearly stated the need for qualifications in the agriculture sector at pages 9 to 10. There is specified need for areas of specialization, technical skills areas and soft skills required. Furthermore, the Ministry of Agriculture and Food Security National Agriculture Investment Plan of 2019 emphasized the need for diversification of the agricultural sector. Maputo Declaration emphasized the critical importance of the agricultural sector in the agricultural transformation, wealth creation, food security and prosperity for all. Furthermore, the Comprehensive Africa Agricultural Development Programme (CAADP - 2003) encouraged governments to grow agriculture to ensure that agriculture contributes at least 10% annual expenditure. Out of the total of over 40 tertiary education and training institutions in Botswana, only one (BUAN) offers qualifications dedicated to agricultural education and training. These underscore the need for more training to ensure that the citizens participate from an informed position in this important sector of the economy.

#### **PURPOSE:**

The Diploma in Agriculture qualification will produce human resource with advanced knowledge and skills in this area of national development and would go a long way in assisting realization of some of the goals of the Vision 2036. The qualification, which covers a broad range of areas such as farm planning, soil management, managing climate risk, organic farming, crop and pasture management, marketing farm produce, to name but a few, was therefore, developed. Most critically, the qualification will include a practical component, thus availing opportunities for practical application of newly acquired knowledge. The Qualification Developer also noted that access in other institutions is limited mainly to school leavers, and there is no scope for post-school youths and adults who are employed and may want to further their careers. In addition to absorbing school leavers, it accommodates adults and gives them the options of pursuing studies by distance or part-time mode.

The purpose of the qualification is to produce graduates who have the technical skills, knowledge and competencies to:

- Conduct animal disease control measures with farmers
- Assess soil types and apply appropriate fertilisers, crop patterns as well as weeds management methods.
- Plan and manage the agricultural production cycle.
- Set up and run a profitable agricultural enterprise.
- Promote agro-based business.
- Advise on appropriate technology and water reticulation system.

<b>ENTRY REQUIREMENTS (including access and inclusion)</b>	
<p>Minimum entry requirements at year one is: NCQF Level 4 Certificate IV</p> <p>RPL and CAT will be considered where the candidates may not meet the minimum entry requirement. RPL will apply according to individual institutional policies.</p>	
<b>QUALIFICATION SPECIFICATION: SECTION B</b>	
<b>GRADUATE PROFILE</b>	<b>ASSESSMENT CRITERIA</b>
1. Demonstrate fundamental competencies within the agricultural environment.	<p>1.1. Apply communication skills in an agricultural environment.</p> <p>1.2. Apply mathematical calculations within the agricultural environment.</p> <p>1.3. Develop a data collection plan in the agricultural sector.</p> <p>1.4. Integrate sustainable systems thinking into planning and management processes.</p>
2. Apply agribusiness aspects that impact on Agricultural supply chains.	<p>2.1. Control an agricultural input chain.</p> <p>2.2. Develop a strategic plan for agri-processing activities.</p> <p>2.3. Describe the integration of the marketing component as a part of the total agri-business.</p> <p>2.4. Analyses and interpret financial information in an agro-business organisation.</p> <p>2.5. Demonstrate the ability to optimize and integrate farming systems.</p>
3. Demonstrate knowledge on Agricultural practices.	<p>3.1. Ensure sound utilization of agricultural resources.</p> <p>3.2 Analyse the process of optimisation of water quality in an agricultural production system.</p> <p>3.3. Develop, implement and optimize a management system for food safety and quality practices in an agricultural supply chain.</p> <p>3.4. Incorporate an understanding of the importance of natural resource management in relation to agricultural practices.</p> <p>3.5. Design a natural resource management plan of the farm in</p>

	<p>relation to local government structures and policies.</p> <p>3.6. Assist in determining the most appropriate and sustainable land-use for different parts of the land.</p> <p>3.7. Supervise the implementation and maintenance of the selected infrastructure and maintain the most appropriate land-use on a farm by continuously assessing the natural resource base.</p>
4. Apply skills in relation to Animal production.	<p>4.1. Evaluate and manage animals according to specific criteria related to anatomical, physiological, physical and biochemical systems.</p> <p>4.2. Develop and implement health care, prevention and treatment procedures.</p> <p>4.3. Develop a strategic animal nutrition plan.</p> <p>4.4. Apply an advanced breeding and selection practices and to integrate these practices into a breeding management programme.</p> <p>4.5. Guide and direct others during the harvesting of animal products.</p> <p>4.6. Demonstrate the ability to meaningfully and purposefully dissect animals.</p>
5. Demonstrate an understanding of the skills and knowledge in crop and plant production.	<p>5.1 Describe the basic biochemistry involved in the physiological processes of a plant.</p> <p>5.2 Develop a soil fertility and plant nutrition plan.</p> <p>5.3 Propagate plants in any production system.</p> <p>5.4. Implement and co-ordinate different harvesting plans .</p> <p>5.1 Identify, monitor and control pests.</p> <p>5.6. Monitor beneficially arthropods, plant disease symptoms and weeds in a responsible manner by applying Integrated Pest Management Principles to conserve the environment.</p> <p>5.7. Develop a plant manipulation management plan and manage its</p>

	implementation to maximize growth and yield.
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QUALIFICATION STRUCTURE: SECTION C			
FUNDAMENTAL COMPONENT Subjects / Units / Modules /Courses	Title	Level	Credits
	Agriculture in Southern Africa	6	15
	Quantitative Methods	5	10
	Introduction to Communication and Technology	5	10
	Entrepreneurship	5	10
CORE COMPONENT Subjects / Units / Modules /Courses			
	Soil Constitution, Fertility and Conservation	6	15
	Sustainable Environments	6	15
	Dry-land Crop Management	6	15
	Livestock Management	7	20
	Agricultural Economics	7	20
	Bookkeeping for the Smallholder	6	15
	Agricultural Engineering	7	20
	Market Gardening	6	15
	Marketing Farm Produce	6	15
	Feeding Livestock	6	15
	Farm Management	7	20
	Crop Production Plan	6	15
	Management of Pastures	6	15
	Industrial Attachment	6	60
ELECTIVE COMPONENT Subjects / Units / Modules /Courses	<b>Choose 1</b>		
	Animal Health Care	6	20
	Agronomy	6	20
	Organic Agriculture	6	20
	Total		360
Rules of combinations, Credit distribution			
<ul style="list-style-type: none"> <li>There are 3 Level 5 Components (35 Credits), 12 Level 6 Components (205 Credits) and 5 Level 7 Components (120 Credits).</li> <li>This qualification has 4 Fundamental components = 50 Credits</li> </ul>			

- There are 15 Core components = 290 Credits
- There are 3 Elective components of 20 credits each = 20 credits, learners choose only one (1)
- Total Credits are **360 Credits**

## **ASSESSMENT AND MODERATION ARRANGEMENTS**

### **Assessment**

All assessments leading to the Diploma in Public Health will be based on learning outcomes associated with the following assessment criteria.

#### 1. Formative assessment

The outcomes of each module in the qualification will be assessed through continuous assessments comprised of assignments, test and mock examination which will all contribute to 40%.

#### 2. Summative assessment

Final assessment will be conducted on completion of the modules. All the outcomes of the modules will be assessed in the final written examination and there shall be an industrial attachment will contribute to 60% summative assessment.

### **Moderation**

Assessments and moderation for the modules of the qualification will undergo internal and external moderation and all assessors internal and external will be BQA accredited or approved by relevant professional bodies.

## **RECOGNITION OF PRIOR LEARNING**

There shall be provision for awarding of the qualification (Diploma level 6 in Agriculture) through recognition of prior learning (RPL) and CAT in line with the national RPL and CAT Policies.

## **PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)**

This qualification articulates vertically with inter alia:

- Bachelor of Science in Animal Science
- Bachelor of Science in Agriculture
- Bachelor of Science in Crop Science
- Bachelor of Science in Soil Science
- Bachelor of Science in Range Science
- Bachelor of Engineering in Agricultural Mechanisation.

- Bachelor of Science in Food Science and Technology

For horizontal learning pathways the learner may progress to:

- Diploma in Animal Health
- Diploma in Forestry and Range ecology

For employment pathways, the qualification allows a successful learner to follow a career in occupations such as:

- Farm manager
- Poultry production manager
- Farmer
- Agro Business owner
- Agricultural Extension Officer
- Animal production manager

#### **QUALIFICATION AWARD AND CERTIFICATION**

Upon successful completion the candidate will be awarded a qualification of Diploma in Agriculture NCQF Level 6 Certificate. Total minimum credits required for the award of this qualification is 360. Certificates will be issued.

#### **REGIONAL AND INTERNATIONAL COMPARABILITY**

To establish comparability, benchmarking was conducted on two similar qualifications regionally and internationally. The benchmarking was looking at the title of the qualification, entry requirements, credits allocation, NQF level at country of origin and either exit level outcomes or modules (see comparability matrix attached).

##### ***University of Malta, Malta Diploma in Agriculture***

Although total credits for this qualification is 60 and the NQF level is not indicated (country of origin does not have NQF), looking at the type of qualification and the entry requirement (Secondary Education Certificate Level which is equivalent to NCQF Level 4), when mapped into NCQF it equates to the proposed qualification. However, the qualification is more inclined agricultural biochemistry and biotechnology, agricultural laboratory, anatomy and physiology of animals and farm crops while the proposed qualification is general agriculture with modules such as Farm Management, Soil Constitution, Fertility and Conservation, Livestock Management Sustainable Environments, Crop Production Plan, Management of Pastures and business related modules. The proposed qualification has included generic skills like Entrepreneurial Skills and Introduction to Information Technology.

***Elsenburg Agricultural Training Institute, South Africa Diploma in Agriculture***

NQF level of this qualification is NQF Level 6 in which it equates to NCQF Level 6 of the proposed qualification when mapped into the NCQF. The entry requirement is Higher Certificate in Agriculture (NQF 5) whereas the proposed qualification allows for minimum entry which is at NCQF Level 5. However, CAT for entry will be considered for the proposed qualification. Some modules stated for this qualification such as Animal production & Vegetable production/Agronomy compare similarly to the proposed qualification though the proposed qualification has included generic skills like Entrepreneurial Skills and Introduction to Information Technology which the above qualification does not have.

**Comparability statement:** A comparison of the proposed qualification with the above shows that the qualification learning outcomes/core modules compares favourably with other qualifications of similar nature from other institutions. Moreover, the proposed qualification has an attachment module which the above qualifications do not have.

**REVIEW PERIOD**

The qualification will be reviewed every 5 years.