

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

SECTION A: QUALIFICATION DETAILS													
<b>QUALIFICATION DEVELOPER (S)</b>		Botswana University of Agriculture and Natural Resources											
<b>TITLE</b>	Bachelor of Science in Agricultural Education										<b>NCQF LEVEL</b>	7	
<b>FIELD</b>	Agriculture and Nature Conservation		<b>SUB-FIELD</b>		Agricultural Education				<b>CREDIT VALUE</b>	512			
New Qualification					√	Review of Existing Qualification							
<b>SUB-FRAMEWORK</b>		General Education			TVET			Higher Education		√			
<b>QUALIFICATION TYPE</b>	Certificate	I	II	√	IV	V	Diploma	Bachelor	or	√			
	Bachelor Honours			Post Graduate Certificate				Post Graduate Diploma					
	Masters					Doctorate/ PhD							
<b>RATIONALE AND PURPOSE OF THE QUALIFICATION</b>													
<p><b>RATIONALE:</b></p> <p>The bulk of the population in African countries depends largely on agriculture for their livelihood. Over the years, this dependence on agriculture has necessitated that the young generation is not only provided with advanced agriculture knowledge and skills to keep pace with technological advancement in agriculture but also helped to acquire positive attitudes towards the field. This noble initiative could not be achieved without trained professionals who could effectively plan, implement, evaluate, and manage agriculture learning programmes in institutions of learning. This, therefore, has necessitated the training of Agricultural Education professionals to carry out the mentioned roles. In Southern Africa, the training of Agricultural Education specialists first started in the Kingdom of Eswatini, then Swaziland, and this is where most of the agriculture education specialists in Botswana received their initial professional training, which, of course, was costly to the government.</p> <p>The need to reduce the costs incurred by the government in training degree holders in Agricultural Education abroad, as well as the need to increase the rate of training teachers and upgrading those with diploma qualifications to match the growing demand for local agriculture teachers, necessitated the establishment of the BSc Agricultural Education qualification in 1995, the programme enrolled its first cohort of students in 1996.</p>													

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

Furthermore, the Agriculture Sector Human Resource Development Plan (HRDC, 2015) identified some skills in agriculture that the Botswana economy still needs, thus necessitating continued training of Agricultural Education specialists who could later impart requisite skills to learners. The need for this qualification was also identified by the needs assessment study (AEE, 2015), which was conducted during the review period of this programme in June 2015. The broad tracer study solicited views from various stakeholders including the graduates of this BSc Agricultural Education Qualification who were currently teaching; their co-teachers who trained elsewhere; supervisors of teachers (i.e. senior teachers, Heads of Department, school heads, deputy head teachers and education officials) as well as farmers and stakeholders from various agriculture-related industries. According to the study (AEE, 2015), 96% per cent of the overall respondents found the qualification still necessary to be offered. 92% held the position that the programme has the opportunity to attract students not only locally but even from most African countries, especially those in the SADC region. This view gains support from the fact that there are very few qualifications of this nature in Africa. This qualification is the second in Africa to that offered by the University of Eswatini.

### **PURPOSE:**

The purpose of this qualification is to produce Agricultural Education specialists who have adequate subject matter knowledge and pedagogical skills to effectively:

- Plan, guide and evaluate learning, as well as manage Agricultural Education learning programmes in institutions of learning.
- Serve as teachers of agriculture in senior secondary schools, instructors at colleges of education, parastatals and non-government organizations, as well as in positions of policy making such as being subject-specific curriculum designers or developers.
- Serve as in-service training officers (Agriculture), Agriculture learning programme inspectors, as well as measurement and testing officers.
- Serve in positions of policy making such as curriculum design, development and evaluation; In-service training (Agriculture); Agriculture learning programme inspectors in the education ministries, as well as measurement and testing officers based at examination commissions.

### **ENTRY REQUIREMENTS (including access and inclusion)**

Admission to this qualification is based on the candidates' completion of or having obtained the following:

- NCQF Level 4, Certificate IV in General Education, for example, BGCSE, or Certificate IV in TVET or their equivalents.
- Recognition of Prior Learning (RPL) with Credit Accumulation and Transfer (CAT) for access will be used for candidates to gain admission into the qualification, following ETP policy which is aligned with National/ BQA policy.

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

<b>SECTION B QUALIFICATION SPECIFICATION</b>	
<b>GRADUATE PROFILE (LEARNING OUTCOMES)</b>	<b>ASSESSMENT CRITERIA</b>
<p>1. Demonstrate specialized in-depth knowledge in Agriculture, including understanding of theory, concepts, practice and skills involved in:</p> <ul style="list-style-type: none"> <li>➤ Crop and animal production.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Demonstrate a deep understanding of the anatomy and physiology of plants and animals</li> <li>➤ Describe, and adequately crop and animal husbandry practices</li> <li>➤ Demonstrate understanding of regulations governing agricultural operations and associated services</li> </ul>
<ul style="list-style-type: none"> <li>➤ Factors influencing agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Describe, adequately, the environmental, adaphic and any emerging factors affecting crop and animal production and how they could be manipulated to enhance agricultural production</li> </ul>
<ul style="list-style-type: none"> <li>➤ Agricultural Engineering;</li> </ul>	<ul style="list-style-type: none"> <li>➤ Demonstrate understanding of various engineering concepts and skills necessary for agricultural production</li> </ul>
<ul style="list-style-type: none"> <li>➤ Agricultural Economics;</li> </ul>	<ul style="list-style-type: none"> <li>➤ Adequately describe factors of production</li> <li>➤ Apply economic principles and models into promoting production in agriculture</li> <li>➤ Apply entrepreneurial knowledge and skills to effectively and efficiently manage agricultural enterprises e.g. record keeping etc</li> </ul>
<ul style="list-style-type: none"> <li>➤ Agricultural Extension;</li> </ul>	<ul style="list-style-type: none"> <li>➤ Adequately explain and ensure adoption of new technologies by farmers</li> <li>➤ Adequately explain agricultural theories and concepts helping to understand aspects of agriculture</li> <li>➤ Apply theories and concepts to address agriculture related problems</li> <li>➤ Demonstrate knowledge of technological advancements aimed at promoting production in various agricultural enterprises</li> </ul>
<p>2. Carry out agriculture operations and processes that require application of specialized basic and</p>	<p>Find out if candidates could:</p>

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

<p>applied research skills necessary to to solve agriculture related problems</p>	<ul style="list-style-type: none"> <li>➤ Demonstrate skills involved in growing crops and rearing animals.</li> <li>➤ Skillfully use tools and implements used in agricultural production</li> <li>➤ Skillfully operate agricultural machinery to enhance production</li> <li>➤ Skillfully design structures meant to enhance production</li> <li>➤ Apply entrepreneurial skills to effectively and efficiently manage agricultural enterprises e.g. record keeping etc</li> </ul>
<p>3. Apply a range of agricultural concepts and principles to guide advanced agricultural practice (planning, actual operation and evaluation) under different settings and situations as well as generate solutions to even unpredictable and complex agriculture related problems;</p>	<ul style="list-style-type: none"> <li>➤ Effectively apply economic concepts and principles to guide effective and efficient agricultural production</li> <li>➤ Effectively conduct surveys and field trials to solve agriculture related problems</li> </ul>
<p>Demonstrate considerable ethical standards, responsibility and accountability for their own agriculture work output and for others within the field of agriculture.</p>	<ul style="list-style-type: none"> <li>➤ are humane when dealing with animals;</li> <li>➤ are responsible and accountable for their own agricultural enterprises e.g. timely feeding, observing cleanliness etc.</li> </ul>
<p>4. Demonstrate specialized in-depth knowledge in:</p> <ul style="list-style-type: none"> <li>➤ Education (pedagogy &amp; andragogy),</li> </ul>	<ul style="list-style-type: none"> <li>➤ Show evidence of rich learning of education theories, concepts, principles and laws governing the art of teaching and learning.</li> <li>➤ Describe how the education theories, concepts, principles and laws shape the teaching practice.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Educational leadership and management as well as</li> </ul>	<ul style="list-style-type: none"> <li>➤ Demonstrate understanding of theories and principles governing educational leadership and management</li> </ul>
<ul style="list-style-type: none"> <li>➤ Educational research.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Demonstrate knowledge of educational research meant to solve education related problems</li> </ul>
<p>5. Carry out educational operations and processes that require application of specialized basic and applied educational skills (drawn from pedagogy, andragogy, management and leadership of educational institutions as well as educational research) that are necessary to solve education related problems.</p>	<ul style="list-style-type: none"> <li>➤ Adequately describe the preparation, implementation and evaluation of instructions</li> <li>➤ Describe effective management of students in class</li> <li>➤ Demonstrate understanding of the effectiveness of various teaching methods /approaches and associated paraphernalia for specific situations</li> <li>➤ Discuss the development of valid and reliable test instruments</li> </ul>
<p>6. Apply a range of educational laws, principles, and theories to: guide teaching practice (planning, actual teaching and evaluation); enhance learning</p>	

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

<p>by differing learners under different settings and situations; generate solutions to even unpredictable and complex learners' related problems; as well as</p>	<ul style="list-style-type: none"> <li>➤ plan, teach and evaluate instructions through the guidance of educational laws, principles, concepts and theories.</li> <li>➤ effectively manage students with various capabilities in class</li> <li>➤ appropriately select teaching methods /approaches and associated paraphernalia for specific situations</li> <li>➤ develop valid and reliable test instruments.</li> </ul>
<p>Demonstrate considerable ethical standards, responsibility and accountability for their own education work output and for others within the education fraternity.</p>	<ul style="list-style-type: none"> <li>➤ apply psychological principles to offer students the psychological, emotional, or physical support they may need.</li> <li>➤ uphold teaching ethics and standards when dealing with students, colleagues, and other stakeholders in education.</li> <li>➤ be humane when dealing with students.</li> <li>➤ be responsible and accountable for their own teaching work, e.g. being timely, observing cleanliness and order, etc.</li> </ul>
<p>7. Apply a wide range of 21<sup>st</sup> Century skills needed to: enhance the practice of teaching and learning; generate solutions to even unpredictable and complex learners' problems; effectively and efficiently interact at the workplace; as well as show appropriate entrepreneur skills, investigative skills, critical and creative thinking skills, integrity, teamwork, ICT skills, cross-cultural fluency, self-directed, lifelong learning skills etc.</p>	<ul style="list-style-type: none"> <li>➤ Relate with colleagues and learners as well as the ability to adhere to the teaching profession ethics.</li> <li>➤ Effectively work in teams</li> <li>➤ Effectively address the audience.</li> <li>➤ Effectively debate to have his/her critical thinking and communication skills impacted.</li> <li>➤ Conduct research to have his/her investigative skills improved.</li> <li>➤ Uphold self-directed and lifelong learning culture.</li> <li>➤ Employ relevant ITC skills in their practice.</li> <li>➤ Be able to handle students of different cultures.</li> </ul>

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

<b>SECTION C</b>		<b>QUALIFICATION STRUCTURE</b>			
<b>COMPONENT</b>	<b>TITLE</b>	<b>Credits Per Relevant NCQF Level</b>			<b>Total (Per Subject/ Course/ Module/ Units)</b>
		<b>Level [5]</b>	<b>Level [6]</b>	<b>Level [7]</b>	<b>Credits</b>
<b>FUNDAMENTAL COMPONENT</b> <i>Subjects/ Courses/ Modules/Units</i>	Mathematics I	5			12
	General and Inorganic Chemistry 1	5			12
	General Physics for Life Sciences1	5			12
	Biology of Cells 1	5			12
	Computer Skills Fundamentals I	5			8
	Communication and Academic Literacy Skills I	5			12
	Physical and Organic Chemistry		6		12
	Biodiversity		6		12
	Computer Skills Fundamentals II		6		8
	Communication and Academic Literacy Skills II		6		12

 <b>BOTSWANA</b> Qualifications Authority	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

	<b>Total fundamentals</b>				<b>112</b>
<b>CORE COMPONENT</b>  <i>Subjects/Courses/ Modules/Units</i>	Introduction to Agric. Economics		6		12
	Livestock Production		6		12
	Biometry I		6		8
	Animal Nutrition and Range Management		6		12
	Crop Physiology		6		12
	Animal Health		6		12
	Soil Science		6		12
	Principles of crop protection		6		12
	Educational Psychology		6		12
	Field Practical Training			7	12
	Sociology of Education			7	12
	Philosophy of Education			7	12
	Biometry II			7	8
	Introduction to Genetics			7	8
	Teaching Methods in Agriculture			7	12
	Educational Measurement and Evaluation			7	12



 BOTSWANA Qualifications Authority	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

	Tractor and Implement Technology			7	12
	Design of Irrigation Systems			7	12
	Teaching Practice			7	12
	Research Methods in Education			7	12
	Curriculum Design and Development			7	12
	Educational Technology			7	12
	Research Project proposal			7	12
	Research Project			7	12
	Management of Agricultural Enterprises in schools			7	12
	Special Education			7	12
	Educational Administration and Supervision			7	12
	Fruit and Vegetable Production			7	12
	<b>Total Cores</b>				<b>324</b>
<b>ELECTIVE/ OPTIONAL COMPONENT</b>	<b>Optional Set 1</b>				
	Principles of Crop Production <b>OR</b> Weed Science		6		12



 <b>BOTSWANA</b> Qualifications Authority	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

<i>Subjects/Courses/ Modules/Units</i>	<b>Optional Set 2</b>				
	Land surveying and Evaluation <b>OR</b> Soil and Water Conservation		6		12
	<b>Optional Set 3</b>				
	Aquaculture <b>OR</b> Beekeeping			7	8
	<b>Optional Set 4</b>				
	Agricultural Project Planning and Management <b>OR</b> Production Economics			7	12
	<b>Total Options</b>				<b>44</b>
	Elective			7	8
	Elective			7	12
	Elective			7	12
	<b>Total Electives</b>				<b>32</b>
	<b>Total</b>				<b>512</b>

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

<b>SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL</b>	
<b>TOTAL CREDITS PER NCQF LEVEL</b>	
<b>NCQF Level</b>	<b>Credit Value</b>
5	68
6	172
7	272
<b>TOTAL CREDITS</b>	<b>512</b>
<b>Rules of Combination:</b> <b>(Please Indicate combinations for the different constituent components of the qualification)</b>	
<p>The credit combination in this qualification is such that:</p> <ul style="list-style-type: none"> <li>Of the 512 total credits for the qualification, Levels 5,6 and 7 constitute 68 (13.3%), 172 (33.6%), and 272 (53.1%) credits, respectively.</li> <li>112 credits are from the Fundamental Component modules.</li> <li>324 credits are from the Core Component modules.</li> <li>32 credits are from the Elective modules.</li> <li>44 credits are from the Optional modules.</li> <li>Both Agriculture and education modules are offered concurrently across the entire learning period of the qualification (i.e. education and agriculture modules taken mixed in a semester, for instance)</li> <li>The learner should choose at least one module from each optional set of modules as indicated in the structure.</li> <li>The ETP should provide a list of Elective modules deemed relevant to enhance the qualification, and candidates will do them as and when they see appropriate during the entire period of the qualification to allow flexibility.</li> </ul>	

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

## **ASSESSMENT ARRANGEMENTS**

### **Formative assessment**

The formative assessment will consist of the following:

Continuous assessment (50%)-

### **Summative assessment**

Final Examination (50%)

## **MODERATION ARRANGEMENTS**

### **Internal moderation arrangements**

Internal and external moderation will be done by BQA-accredited persons following BQA's applicable policies on assessment and moderation.

## **RECOGNITION OF PRIOR LEARNING**

Applicants with prior learning experience will be assessed and awarded credit or exemptions where applicable, and the arrangement for RPL will be in accordance with the RPL policy of the ETP or the national RPL policy.

## **CREDIT ACCUMULATION AND TRANSFER**

This qualification is designed to allow awards through Credit Accumulation and Transfer (CAT) in line with the National CAT policy.

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

### **Articulation and Education or Learning Pathways.**

Could progress **vertically** to:

1. Master of Science Agricultural Education
2. Master of Science Agricultural Extension
3. Master of Education, PhD (Education)
4. Master of Science in Agricultural Economics
5. Master of Science in Agriculture/Agronomy/Horticulture
6. Other emerging relevant Master of Science Professional qualification

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

Could offer diversion (**horizontal** progress if need be) to other programmes, including:

1. Bachelor of Science Agricultural Extension
2. Bachelor of Science in Agricultural Economics
3. Bachelor of Science in Agriculture
4. Bachelor of Science in Animal Science
5. Bachelor of Education
6. Any other emerging relevant Bachelor of Science / Bachelor of Education professional qualification

### Employment Pathways

Could become:

1. Agriculture teacher
2. Education Officer (Inspectorate and in-service training)
3. Curriculum Design, Development and Evaluation Officer (Agriculture)
4. Agriculture Examination Officer
5. Agricultural Training Agencies e.g., LEA as advisors, NGO's as training consultants
6. Self-employment in agri-business enterprises
7. Other education related fields.

### QUALIFICATION AWARD AND CERTIFICATION

Graduates will be awarded a qualification in **Bachelor of Science in Agricultural Education** after obtaining a full complement of 532 credits.

Thereafter, a certificate will be issued. Certification will be in accordance with the relevant ETP regulations.

### REGIONAL AND INTERNATIONAL COMPARABILITY

#### Regional Comparability

This qualification is comparable with the other regional ETP's qualifications, specifically that of the University of Eswatini.

This qualification is similar to that of UNISWA in terms of title, duration, and general composition of courses (i.e. core, options and electives offered). However, UNISWA qualification has more courses in the same duration of study, hence congested. This gives this qualification a comparative advantage in that it allows comparatively more time per module.

#### International Comparability

Ohio State University, Iowa State University, Michigan State University, and Oklahoma State University offer Agricultural Education qualifications but with strict specializations that may not benefit growing economies

	<b>BQA NCQF QUALIFICATION TEMPLATE</b>	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

where qualified manpower is limited. Comparatively, this qualification ensures that well-rounded Agricultural Education professionals who can effectively fit in diverse job roles are cheaply produced in a short space of time.

### **REVIEW PERIOD**

The qualification will be reviewed after every 5 years

