

**BQA NCQF Qualification Template**

DNCQF.FDMD.GD04

Issue No.: 01

QUALIFICATION SPECIFICATION							
SECTION A							
<b>QUALIFICATION DEVELOPER</b>		Botswana University of Agriculture and Natural Resources					
<b>TITLE</b>	Bachelor of Science in Agricultural Economics					<b>NCQF LEVEL</b>	7
<b>FIELD</b>	Agriculture and Nature Conservation			<b>SUB-FIELD</b>	Agricultural Economics		
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>						492	
RATIONALE AND PURPOSE OF THE QUALIFICATION							
<p><b>Rationale for the Qualification</b></p> <p>The Agriculture Sector Human Resource Development Plan developed in 2015 identified occupation code number 2631 “Agricultural Economists” among the top 20 occupations identified by employers as being in high demand at a national level. The occupation was (and is still) experiencing short term shortages in the labour market and showed relatively strong employment growth in the long term (Human Resource Development Council, 2016). Botswana’s national Vision 2036 emphasizes transformation from resource-based to a knowledge-based economy through development of relevant sector-specific and globally competitive human capital to drive economic growth and diversification in the country. Thus, there is need to develop a qualification that will contribute positively toward attainment of the Vision 2036 pillars of Sustainable Economic Development and Human and Social Development (Government of Botswana, 2016) in the form of a market-driven Bachelor of Science in Agricultural Economics qualification to fill both the short-and long-term sector demands for Agricultural Economists.</p> <p>This qualification, if registered in the National Qualification Certification Framework, will minimize the skills-gap in the job market by providing an opportunity for ETPs to develop and deliver programmes that will match training with industry needs. This is in line with the National Development Plan (NDP) 11 and</p>							

Education and Training Sector Strategic Plan (ETSSP) 2015 - 2020 which seek to improve the quality of education and training by eliminating mismatch between skills produced by the education system and the needs of the economy (Ministry of Education and Skills Development, 2015; Ministry of Finance and Economic Development, 2016).

The importance of the agricultural sector to the economy of Botswana cannot be overemphasised although the sector's contribution to Gross Domestic Product (GDP) has declined since independence (Ministry of Finance and Development Planning (MFDP), 2003). The relatively poor performance of the sector has been partly due to lack of skilled manpower (MFDP, 2003). The agricultural sector remains important especially in the rural areas where the majority of people still rely on agriculture for food, income and investible capital (MFDP, 2003). While one of the government's reactions to the improvement of the agricultural sector was to train technical specialists in areas of crop and livestock husbandry, training in other fields such as agribusiness management, marketing and agricultural policy analysis has not been given much attention. Government has realised that commercialisation of the agricultural sector is a way forward to improving its contribution to the national economy and indeed to the improvement of the living standards of the majority of the people living in rural areas who derive their livelihoods mainly from the sector (NAMPAAD, 2002).

In order to manage successful commercial farms, farmers need to be advised on the most profitable enterprises to embark on and agricultural economists will be essential in this regard. It is against this background that the BSc Agricultural Economics qualification is proposed, against which Applied and Agricultural Economics programmes that will positively contribute to the commercialisation of the agricultural sector through imparting marketing and business skills to farmers will also be developed and accredited. In 2006, twenty (20) school leavers were sent abroad to study agricultural economics at a high cost to the country compared to training in local institutions (MoE, 2006). Developing the BSc Agricultural Economics qualification locally and offering related programmes at tertiary level will thus reduce the high costs of human capital development that the country incurs in training learners abroad. There is therefore a need to develop and register a degree in agricultural economics qualification with Botswana Qualifications Authority (BQA) and offer related programmes at tertiary level in order to meet the new challenges facing the farming community. There has been a tremendous increase in the number of secondary school leavers seeking tertiary education in Botswana; the proposed qualification and the subsequent related programme will absorb part of this group.

### **Purpose of the Qualification**

The purpose of this qualification is to equip graduates with specialised knowledge, skills and competences to:

- (i) Demonstrate knowledge and understanding of Agricultural Economics theories, principles and concepts.
- (ii) Establish and manage their own agri-businesses effectively and profitably.
- (iii) Conduct market economic research and advise farmers on how to maximize financial returns in their enterprises.

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

Admission to the qualification of Bachelor of Science in Agricultural Economics will be NCQF Level 4, Certificate IV (General Education such as a Botswana General Certificate of Secondary Education (BGCSE) Examination) or its equivalent with a pass Mathematics and science subjects. In addition, any relevant qualification to the BSc Agricultural Economics at NCQF levels 5 or 6 in any agricultural economics field may render the candidate eligible for exemptions or credit transfer. Mature entry learners will also be considered as well as relevant experience in the Agricultural Economics field through recognition of prior learning (RPL).

<b>QUALIFICATION SPECIFICATION</b>	
<b>SECTION B</b>	
<b>GRADUATE PROFILE (LEARNING OUTCOMES)</b>	<b>ASSESSMENT CRITERIA</b>
1. Analyze agricultural and/or environmental and natural resources policy problems in relation to production and marketing.	<ul style="list-style-type: none"> <li>i. To think critically about issues relating to agricultural, environmental and natural resources.</li> <li>ii. Explain the economic rationale for government involvement in environmental issues in relation to production and consumption in the agricultural sector,</li> <li>iii. Understand current issues relating to the efficient utilization of agricultural, environmental and natural resources in the production and consumption processes.</li> <li>iv. Apply environmental and natural resource economics theories to real world issues.</li> </ul>
2. Demonstrate knowledge on farm business management and apply economic concepts to management decisions using farm situations, and develop skills in planning and budgeting, business financial analysis, and investment analysis.	<ul style="list-style-type: none"> <li>i. Implement decision rules to determine conditions that maximize profit.</li> <li>ii. Use budgeting concepts to develop whole-farm plans from enterprise budgets,</li> <li>iii. Critically assess risk as a factor of a farm business management</li> <li>iv. Identify alternative business organizations.</li> <li>v. Prepare a capital budget and evaluate capital investments.</li> <li>vi. Explain the concept of liquidity and the need for credit.</li> <li>vii. Discuss time value of money.</li> <li>viii. List and describe the sources of agricultural finance and credit in Botswana.</li> <li>ix. Explain the sources of financial and business risk in agriculture and techniques used to reduce them.</li> </ul>
3. Conduct research in the agricultural industry to address economic issues.	<ul style="list-style-type: none"> <li>i. Discuss the importance of agricultural research.</li> <li>ii. Identify research problems and formulation of appropriate research titles.</li> </ul>

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	<ul style="list-style-type: none"> <li>iii. Discuss the need for ethical consideration in research.</li> <li>iv. Describe the different components of an agriculture research project proposal.</li> <li>v. Explain the importance of monitoring and evaluation of research by developing and using logical framework analysis.</li> <li>vi. Describe the need for developing plans for project management and dissemination of research results.</li> </ul>
4. Manage agribusinesses and retail outlets.	<ul style="list-style-type: none"> <li>i. Describe different forms of organizations for agribusiness and the process of starting a business.</li> <li>ii. Discuss the challenges facing managers of agribusinesses and establish causes of failure in agribusinesses.</li> <li>iii. Describe and conduct market research for an agribusiness.</li> </ul>
5. Demonstrate knowledge in the preparation of sound business plans.	<ul style="list-style-type: none"> <li>i. Develop business plans.</li> <li>ii. Plan production in order to meet market requirements.</li> <li>iii. Discuss the role of marketing in a business organization.</li> <li>iv. Explain the role of human resources in an organization and describe staff recruitment and retention strategies.</li> <li>v. Discuss contemporary issues in agribusiness.</li> </ul>
6. Identify potential value addition to farm products through processing.	<ul style="list-style-type: none"> <li>i. Discuss the concept of the value chain.</li> <li>ii. Identify various agribusiness value chain activities.</li> <li>iii. Critically analyze agribusiness value chain activities and solve practical problems in the value chain.</li> </ul>
7. Articulate to farmers and farmers' groups on how to market their products efficiently.	<ul style="list-style-type: none"> <li>i. Understand the function of a marketing system and the decision processes and actions of final consumers.</li> <li>ii. Define marketing management orientations and describe the marketing process.</li> <li>iii. Define marketing environment and identify the external forces which influence an organization's marketing management.</li> <li>iv. Discuss the marketing strategies for food products.</li> </ul>

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	<ul style="list-style-type: none"> <li>v. Develop a marketing strategy for agricultural products.</li> <li>vi. Discuss the elements of the marketing mix and marketing management.</li> <li>vii. Review of economic role of prices in agricultural and food markets.</li> <li>viii. Outline approaches to the study of agricultural market organization, conduct and performance.</li> </ul>
8. Apply both quantitative and qualitative economic methods and concepts, in applied analysis as professionals in government, business and non-profit making agencies.	<ul style="list-style-type: none"> <li>i. Demonstrate specification and estimation techniques for simple and multiple regression models.</li> <li>ii. Review various functional forms of regression models.</li> <li>iii. Practice statistical inference in regression analysis.</li> <li>iv. Demonstrate detection and solution techniques for heteroskedasticity, autocorrelation, multicollinearity, and specification errors.</li> <li>v. Demonstrate specification and estimation techniques for regression models with dummy independent variables and categorical response variables.</li> <li>vi. Demonstrate specification, estimation, and application of simultaneous models in agricultural context.</li> <li>vii. Describe the properties of stochastic and linear time series models.</li> <li>viii. Demonstrate specification and estimation methods for time series models in agricultural context.</li> <li>ix. Demonstrate specification and estimation methods for panel data models in agricultural context.</li> </ul>
9. Demonstrate knowledge of the process of policy development and implementation.	<ul style="list-style-type: none"> <li>i. Outline the process of policy formulation.</li> <li>ii. Discuss the attributes of a policy.</li> <li>iii. Describe the process of policy implementation.</li> <li>iv. Monitor and evaluate implemented policy.</li> </ul>
10. Contribute to the advancement of the profession through participation in research or inquiry into areas of	<ul style="list-style-type: none"> <li>i. To discuss principles and describe the process of agricultural economics research</li> <li>ii. To outline research process and discuss design of an</li> </ul>

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practice and professional practice	<p>economic research project</p> <p>iii. To review various data collection methods, surveying techniques and their applications</p> <p>iv. To demonstrate use of various data analysis techniques to economic data to solve an economic problem.</p> <p>v. To explain and illustrate research proposal writing for agricultural economists</p>
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<b>QUALIFICATION STRUCTURE</b>			
<b>SECTION C</b>			
<b>FUNDAMENTAL COMPONENT</b>	<b>Title</b>	<b>Level</b>	<b>Credits</b>
Subjects / Units / Modules /Courses	Communication and Academic Literacy Skills	6	24
	Computer Skills Fundamentals	6	16
	Mathematics	6	24
	Principles of Microeconomics	7	12
	Principles of Macroeconomics	7	12
	Principles of Crop Production	7	12
	Principles of Livestock Production	7	12
	Mathematics for Economists	7	12
	Statistics for Economists	7	12
<b>TOTAL</b>			136
<b>CORE COMPONENT</b>			
Courses	Intermediate Microeconomics	7	12
	Intermediate Macroeconomics	7	12
	Production Economics	7	12
	Agricultural and Food Marketing	7	12
	Market and Price Analysis	7	12
	Agricultural Finance	7	12
	Labour Economics	7	12
	Development of Entrepreneurial Skills in Agribusiness	7	12
	Economics of Agricultural Development	7	12
	Rural Sociology	7	8
	Quantitative Methods in Agricultural Economics	7	12
	Econometrics	7	12
	Environmental Economics	7	12
	Resource Economics	7	12
	Farm Business Management	7	12
	International Agricultural Markets and Trade	7	12
	Agricultural and Food Policy	7	12
	Agricultural Project Planning and Management	7	12



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	Agribusiness Risk Management	7	12
	Research Methods in Agricultural Economics	7	12
	Research Project	7	24
	Field Attachment	7	24
<b>TOTAL</b>			284
<b>ELECTIVE COMPONENT</b> Subjects / Units / Modules /Courses	Agricultural Extension	7	12
	Agricultural Community and Group Dynamics	7	12
	Agricultural Organization and Administration	7	12
	Agribusiness Supply Chain Management	7	12
	Agribusiness Value Chain Analysis	7	12
	Rural Development	7	12
	Agricultural Engineering	7	12
	Business Ethics	7	12
	Farm Structures	7	12
	Tractor and Machinery Operations	7	12
	Agricultural Processing	7	12
	Soil and Water Conservation	7	12
	Forest and Range Ecology	7	12

**Rules of combinations, Credit distribution (where applicable):**

Rules of Combination = Fundamental (F) + Core (C) + Elective (E)  
 = 136 + 284 + 72  
 = 492

- **Fundamental:** 136 Credits. All Fundamentals unit standards totaling 136 Credits are compulsory.
- **Core:** 284 credits. All Core unit standards totaling 284 Credits are compulsory.
- **Electives:** 72 Credits. Learners should pick a group of at least 6 electives with a minimum of 72 credits.

Credit Distribution:

Fundamental Components	=	136 credits	=	28%
Core Component	=	284 credits	=	57%
Elective Component	=	72 credits	=	15%

Level		Total Credits
Fundamental:	6	64
	7	72
Core:	6	0
	7	284
Electives:	6	0
	7	72
Overall:	6	64
	7	428
TOTAL		492

## **ASSESSMENT AND MODERATION ARRANGEMENTS**

### **ASSESSMENT ARRANGEMENTS**

Anyone assessing a learner against this Qualification must be registered and accredited as an assessor with Botswana Qualifications Authority (BQA) or an appropriate Education, Training, and Quality Assurance (ETQA) Body recognized by BQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

Any institution offering learning that will enable the achievement of this qualification must be registered and accredited as an education and training provider with Botswana Qualifications Authority (BQA) or an appropriate Education, Training, and Quality Assurance (ETQA) Body recognized by BQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

### **Formative and Summative Assessments**

Both formative (written tests, quizzes, assignments, written reports, and oral presentations) and summative (final examinations) assessment will be used to assess learner competencies against this qualification.

All assessments, formative and summative, leading/contributing to the award of credits or a qualification will be based on learning outcomes and/or sub-outcomes. The overall course grade will comprise of continuous assessment (CA) grade and / or final examination course grade. For courses that do not have a written final examination, the CA course grade shall constitute overall course grade.

The weighting of the assessment components of the CA and final examination will be as approved by the ETPs.

### **MODERATION ARRANGEMENTS**

Anyone moderating the assessment of a learner against this Qualification must be registered and accredited as a moderator with Botswana Qualifications Authority (BQA) or an appropriate Education, Training, and Quality Assurance (ETQA) Body recognized by BQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

Moderation of assessment will be overseen by Botswana Qualifications Authority (BQA) or a recognized relevant ETQA or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.

Moderation must include both internal and external moderation of assessments at exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards as well as in the exit level outcomes described in the qualification.

### **Internal and External Moderation Requirements**

All assessment will undergo internal moderation by teaching staff before being administered to the students to determine coverage, appropriateness for the level, allocation of marks. After marking, moderation will be carried out by the teaching staff to determine fairness and consistency of marking.

The following shall apply for both internal and external moderation in accordance with applicable policies and regulations:

#### **Documentation**

All necessary documents including qualification document, alignment matrices, assessment instruments and Assessment criteria/rubrics should be available.

#### **Pre-Assessment Moderation**

Before administering any assessments that contribute towards the award of credits, moderation must take place. This should entail but not limited to the following:

- Ascertaining that the assessment strategy to be used is appropriate for the learning outcome to be assessed
- Ascertaining that the assessment instrument adequately captures the learning outcomes against which assessment is to be carried out.
- Ascertaining whether the assessment tasks or questions can enable the assessor to collect sufficient evidence that is typical of relevant exit level descriptors.
- Checking if the cover page contains all necessary information
- Checking if the assessment instrument layout is appropriate and that wording of assessment tasks or questions is appropriate.
- Checking if the assessment criteria or rubrics is consistent with the learning outcomes against which assessment is to be done.

### **Post-Assessment Moderation**

Moderators must verify that the assessment has been done in compliance with assessment principles.

This should include the following:

- Checking if all scripts have been assessed using the same criteria.
- Verifying if assessment judgments and decisions have been done consistently and that principles such as validity, authenticity, currency and sufficiency have been considered.
- Checking if calculation of marks has been done correctly
- Checking if the necessary records and reports have been completed.

### **Moderation Reports**

A moderation report shall capture, but not limited to the following:

- Sample size and sampling procedures
- observations about the performance of candidates
- consistency of assessment judgments and decisions
- assessment instruments and alignment to learning outcomes
- recommendations for improvement

### **RECOGNITION OF PRIOR LEARNING (if applicable)**

Learners with appropriate experience and informal or non-formal training who wish to be assessed may

arrange to do so without having to attend further education or training (RPL). The assessor will decide on the most appropriate assessment procedures after discussion with the learner.

A prospective learner may be considered for entry on the basis of recognition of prior learning, prior employment in a relevant field or the acquisition of a non-award qualification in a relevant field. Students who wish to apply for RPL must provide evidence in terms of completed qualifications along with other relevant documentation.

Learners who possess skills required through life or work experience and non-formal education will be assessed and awarded credit or exemptions where applicable. Credit for previous learning may be obtained through the processes of articulation, credit transfer and recognition of prior learning or a combination of these processes.

Learners may submit evidence of prior learning and current competence and/or undergo appropriate forms of RPL assessment for the award of credits towards the qualification. The recognition of prior learning (RPL) assessment will focus on ways of evaluating a person's lifelong experiences (formal and non-formal) against a set of pre-determined criteria as detailed in the RPL Policy.

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

### **Learning progression Pathways**

#### **Vertical Progression**

Holders of a BSc Agricultural Economics qualification may progress to various qualifications such as:

- (i) BSc Agricultural Economics Honours, NCQF Level 8
- (ii) Post Graduate Diploma in Agricultural Economics, NCQF Level 8
- (iii) Post Graduate Diploma in Economics, NCQF Level 8
- (iv) Post Graduate Diploma in Agribusiness, NCQF Level 8
- (v) Post Graduate Diploma in Business Administration, NCQF Level 8
- (vi) Master of Science in Agricultural Economics, NCQF Level 9
- (vii) Master of Agricultural Economics, NCQF Level 9
- (viii) Master of Arts in Economics, NCQF Level 9
- (ix) Masters of Agribusiness, NCQF Level 9
- (x) Master of Business Administration, NCQF Level 9

- (xi) Master of Commerce, NCQF Level 9
- (xii) PhD Agricultural Economics, NCQF Level 10
- (xiii) PhD Economics, NCQF Level 10
- (xiv) PhD Agribusiness, NCQF Level 10
- (xv) PhD Business Administration, NCQF Level 10
- (xvi) PhD Commerce, NCQF Level 10

### **Parallel Progression**

The Bachelor of Science in Agricultural Economics qualification articulates horizontally with Bachelor of Agribusiness, Bachelor of Commerce and Bachelor of Business Administration degrees offered locally and internationally. All these degrees are offered at an equivalent of NCQF Level 7.

Graduates intending to multi-skill and retool have a great opportunity to pursue these other available progression options.

### **Employment Pathways**

BSc Agricultural Economics degree will equip graduates with knowledge and skills needed to consult and undertake business in the following areas:

- Farm business management
- Agricultural business and marketing plan development
- Production agriculture
- Marketing of agricultural & food products
- Banking and agricultural credit

Learners with a BSc Agricultural Economics qualification will be able to serve as:

- i. Self-employment in various agricultural enterprises, starting from primary, secondary to the tertiary sectors
- ii. Farm Managers for commercial farms
- iii. Managers in Supermarkets/chain stores
- iv. Policy Analysts in Agricultural sector

- v. Non-governmental organizations (NGOs) concerned with rural development
- vi. Sales personnel and production line managers
- vii. Poverty alleviation coordinators (government and non-governmental organizations)
- viii. Agribusiness advisors
- ix. Project management specialists
- x. Marketing managers
- xi. Environmental and natural resources managers
- xii. Agricultural Cooperatives and farmers associations advisors
- xiii. Agri-business Consultants

## **QUALIFICATION AWARD AND CERTIFICATION**

### **Minimum standard of achievement for the award of the qualification**

A candidate will be required to achieve a minimum total credits of 492 inclusive of fundamental, core and elective components to be awarded the Bachelor of Science in Agricultural Economics qualification.

Credit Distribution:	Fundamentals	=	136 credits
	Core Courses	=	284 credits
	Elective Courses	=	72 credits

### **Certification**

Candidates meeting prescribed requirements will be awarded the qualification in accordance with standards prescribed for the award of the qualification and applicable policies.

## **REGIONAL AND INTERNATIONAL COMPARABILITY**

The proposed BSc Agricultural Economics qualification compares favourably with similar qualifications in the SADC region and the world at large.

### **Regional Comparability**

#### **1. University of Limpopo, Republic of South Africa (RSA)**

The University of Limpopo offers a Bachelor of Agriculture: Agricultural Economics, which is a South African Qualifications Authority (SAQA) qualification ID 81886: Bachelor of Agriculture: Agricultural Economics (NQF Level 07). This is a national first degree requiring a candidate to achieve a minimum

total credit of 486 to be awarded the qualification.

## **2. Egerton University, Kenya**

The Bachelor of Science in Agricultural Economics qualification emphasizes education and training in the following areas:

- Introductory Economic Theory and Quantitative Economics,
- Resource and Development Economics
- Agricultural Marketing and Trade
- Farm Management and Production Economics
- Agricultural Law and Policy
- Industrial Attachment
- Research Project

Our proposed qualification adequately addresses and emphasizes similar education and training areas.

## **3. University of Zambia (UNZA)**

Just like our proposed qualification, the 4-year Bachelor of Science in Agricultural Economics qualification offered by UNZA emphasizes application of theories and principles of economics to better understand and optimize agricultural production and markets, with an influence on food policy, agricultural policy and environmental policy.

### **Subject Areas of Study**

The qualification also emphasizes similar education and training areas: Agribusiness management; fundamentals of microeconomics; fundamentals of macroeconomics; international agricultural markets, trade, and development; agricultural project planning and appraisal; quantitative methods in agricultural economics; agricultural marketing and pricing; agricultural policy analysis; rural sociology; agricultural finance; farm management; agricultural organization and administration; production economics; industrial attachment; research project.

### **Kind of Jobs Available to Graduates**

Just like in the case of our proposed qualification, the graduates with this UNZA qualification can be self-employed or find jobs in many sectors of the economy: agribusinesses, commodity markets, education,



researcher / consultant, financial sector (banks, insurance companies, microfinance institutions), government ministries, nature resources and environment management, non-government organizations, real estate and public relations.

#### **4. University of Namibia (UNAM)**

Just like our proposed qualification, the 4-year Bachelor of Science in Agricultural Economics qualification offered by UNAM comprises of similar courses including Computer literacy; English communication and study skills; English for academic purposes; Contemporary social issues; Introduction to Biology; Diversity of life; Basic Mathematics; Pre-Calculus; Introduction to Statistics; Basic Microeconomics; Basic Macroeconomics; Intermediate Microeconomics; Intermediate Macroeconomics; Rural Sociology; Rural Development; Agricultural community and group dynamics; Financial Management; Production Economics, Mathematical Economics and Linear Programming; Agronomy; Livestock production systems; Small Ruminant Production; Beef and dairy production; Food technology; Crop Storage and Handling; Agricultural engineering; Agricultural extension; Econometrics; Resource Economics; Development Economics; Entrepreneurship; Farm Planning and Management; Agricultural Marketing; Agricultural Price Analysis and Forecasting; Project Planning and Management; Agribusiness Management; International agricultural Trade; Agricultural Policy Analysis; Field Attachment; Research project.

### **International Comparability**

#### **1. The University of Sydney, Australia**

Just like in the case of our proposed qualification, the 4-year Bachelor of Science in Agricultural Economics qualification offered by the University of Sydney in Australia comprises of similar core courses and electives.

#### **Core Courses (6 credits each)**

Production Economics, Economics of Biological Production Systems, Applied Econometric Modelling, Intermediate Econometrics, Intermediate Microeconomics, Intermediate Macroeconomics, Market and Price Analysis, Commodity Market and Price Analysis, Agricultural and Resource Policy, Applied Optimization, Agribusiness Management, Production Modelling and Management, Research Methods, International Trade, International Agricultural Trade, Benefit – Cost Analysis, Quantitative Planning

Methods, Economics of Mineral and Energy Industries, Agricultural Development Economics, Development Economics, Industrial Organization of Agribusiness, Industrial Organization, Environmental Economics, Agricultural Markets, Agricultural Finance and Risk, Professional Development, and Research Project.

**Elective Courses (6 credits each)**

Accounting and Financial Management, Accounting, Business and Society, Concepts in Biology, Living Systems, Foundations of Business Law, Earth, Environment and Society, Introductory Geography, Australian Politics, Introduction to Political Science, Geopolitics, World Politics, Digital Business Innovation, Applications of Calculus, Mathematical Modelling, Marketing Principles, Psychology, Foundations of Work and Employment, Agribusiness Marketing, Introduction to Economic Statistics, Management Accounting, Financial Accounting, Auditing and Assurance, Introductory Hydrology, Soil Properties and Processes, and Environmental GIS.

**2. Colorado State University, United States of America (USA)**

Just like in the case of our proposed qualification, the Bachelor of Science in Agricultural and Resource Economics qualification provides learners with operating techniques and business skills used in the modern food and fiber industry and builds learners' knowledge and skills needed to manage small- and medium-sized businesses in agriculture and allied industries.

**Qualifications' Learning Outcomes**

Just like our proposed qualification, obtaining this qualification enhances graduates' professional development, technical competence, problem solving skills, and communication skills. Successful learners demonstrate:

- Technical competency including appropriate use of economic theory in formulating analytical problems, identifying and gathering appropriate data, and employing appropriate economic methods to analyze those problems, utilizing appropriate available computer technology
- Ability to solve real-world problems beyond the pedagogical context. Students will be able to identify a problem and its scope, evaluate resources to address the problem, formulate alternative solutions, and select the solution(s) most consistent with a stated objective
- Proficiency in oral and written communication including the ability to communicate critically and analytically at a professional level

### **Course offered**

Food Animal Science; Introduction to Equine Science; Food-From Farm to Table; Horticultural Science; General Crops; Agricultural and Resource Economics; Principles of Animal Biology; Principles of Plant Biology; Attributes of Living Systems; Chemistry; Personal Computing; Principles of Macroeconomics; College Algebra; Logarithmic and Exponential Functions; Calculus in Management Sciences; Fundamentals of Accounting; Agricultural and Resource Enterprise Analysis; Public Speaking; Agricultural Marketing; Agricultural and Resource Product Marketing; Agricultural Finance; Agricultural Commodities Marketing; Agricultural Business Management; Introduction to Econometrics; Economics of Natural Resources; Fundamentals of Finance; Introduction to Statistical Methods; Agricultural Production Management; International Agricultural Trade; Agricultural Policy; Intermediate Microeconomics and Intermediate Macroeconomics.

### **Potential Occupations**

Graduates establish careers in management, marketing, sales, finance and insurance, and policy analysis to name a few areas in agriculture and related fields. Examples of career paths of graduates include, but are not limited to commodity broker, agricultural statistician, loan officer, farm manager, supply chain analyst, farm machinery sales representative, grain merchandiser, operations manager, landscape contractor, human resources specialist, ranch manager, credit analyst, crop insurance agent, precision agricultural technologist, feedlot manager, agricultural chemical sales representative, real estate appraiser, and elevator manager.

In summary, generally this proposed Bachelor of Science in Agricultural Economics qualification compares well with all the qualifications studied for the exit outcomes and the fundamental, core and elective courses under the qualification cover similar scope and depth and are aligned to exit-level descriptors typical of this level and type of qualification, as done within the region and beyond.

### **REVIEW PERIOD**

After every five (5) years

**Other information** – please add any supplementary information to help the application for this qualification for NCQF Registration.

N/A



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