

APPLICATION OF ICT IN AGRI-ENTERPRISE

ISCED UNIT CODE: 0811 454 12A

TVETCDACC UNIT CODE: AG/CU/PN/CR/02/5/MA

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Apply ICT in agri-enterprise

Duration of Unit: 180 hours

Unit Description

This unit specifies the competencies required to apply ICT in agri-enterprise. It involves preparing to integrate ICT in agri-enterprise, integrating ICT into agri-enterprise processes, evaluating agri-enterprise ICT integration and completing integrating ICT into agri-enterprise.

Summary of learning outcomes

By the end of this unit of learning, the trainee should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Prepare to integrate ICT in agri-enterprise processes	50
2.	Integrate ICT into agri-enterprise processes	40
3.	Evaluate agri-enterprise ICT intergration	50
4.	Complete integrating ICT into agri- enterprise processes	40
Total		180

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Prepare to integrate ICT in agri-enterprise processes	1.1 Needs assessment tools 1.2 ICT tools 1.3 Infrastructure 1.4 ICT planning	• Written tests • Oral questioning • Third party report
2. Integrate ICT into agri-enterprise processes	2.1 ICT and ICT applications 2.2 Records management 2.3 Communication 2.4 Human Resources management 2.5 Financial systems 2.6 Use of internet 2.7 Computers and computer packages 2.8 Usage of mobile phones and mobile phone applications 2.9 Networking	• Written tests • Oral questioning • Third party report
3. Evaluate agri-enterprise ICT integration	3.1 Assessment of effective ICT integration 3.2 Effectiveness of ICT integration 3.3 Innovations and improvement of ICT processes in agri-enterprises Monitoring and Evaluation	• Written tests • Oral questioning Third party report
4. Complete integrating ICT into agri-enterprise processes	4.1 Preparation of report writing and documentation of ICT integration 4.2 Report writing and documentation of ICT integration	• Written tests • Oral questioning • Third party report

Suggested Methods of Instruction

- Project
- Demonstration by trainer
- Discussions
- Direct instruction

- **Recommended Resources for 25 Trainees**

Category/Item	Quantity	Recommended ratio (item: Trainee)
Desktop computers/laptops	25	1:1
Internet connection		
Projector	1	1:25
Printer	1	1:25
Software installation manuals	1	1:25
Sample Business records	1	1:25
Smartphones	1	1:25
GPS device	1	1:25
Application software	1	1:25
Satellite mapping software	1	1:25

MODULE V

CROP PRODUCTION

ISCED UNIT CODE: 0811 551 10A

TVETCDACC UNIT CODE: AQ/CU/PN/CR/01/6/MA

Relationship to Occupational Standards

This unit addresses the unit of competency: Principles of crop production

Duration of Unit: 320 HOURS

UNIT DESCRIPTION

This unit specifies the competencies required by an Agripreneurship technologist level 6 to apply crop production principles. It involves production of annual crops, production of perennial crops and production of horticulture.

Summary of learning outcomes

By the end of this unit of learning, the trainee should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Produce annual crops	100
2.	Produce perennial crops	110
3.	Produce horticulture crops	110
Total		320

Learning Outcomes, Content and Suggested Assessment Methods

Learning outcomes	Content	Suggested assessment methods
1. Produce annual crops	1.1 Personal protective equipment 1.1.1 Types • Overall • Headgear • Gloves • Gumboots • Goggles	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning

	1.1.1 Uses 1.2 Land preparation tools and equipment 1.2.1 Land clearing tools and equipment 1.2.2 Tillage tools and equipment 1.3 Land preparation practices 1.3.1 Land clearing 1.3.2 Primary cultivation 1.3.3 Secondary cultivation 1.3.4 Tertiary practices 1.4 Planting materials 1.4.1 Seeds 1.4.2 Vegetative materials 1.5 Planting methods 1.6 Crop routine management practices 1.6.1 Irrigation 1.6.2 Pest control 1.6.3 Disease control 1.6.4 Weeding 1.6.5 Staking 1.6.6 De-suckering 1.6.7 Fertilizer application 1.6.8 Trellising 1.6.9 Mulching 1.6.10 Gapping 1.6.11 Thinning ... 1.7 Crop harvesting	
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	methods 1.7.1 Picking 1.7.2 Cutting 1.7.3 Digging 1.7.4 Uprooting ...	
2. Produce perennial crops	2.1 Personal protective equipment 2.1.1 -Types • Overall • Headgear • Gloves • Gumboots • Goggles 2.1.2 -Uses 2.2 Land preparation tools and equipment 2.3 Land preparation practices 2.3.1 Land clearing 2.3.2 Primary cultivation 2.3.3 Secondary cultivation 2.3.4 Tertiary practices 2.4 Planting materials 7.4.1 Seeds 2.4.1 Splits 2.4.2 Suckers 2.4.3 Corms 2.4.4 Slips 2.4.5 Setts 2.4.6 Cutting 2.4.7 Vegetative materials 2.5 Planting methods 2.6 Crop routine management practices 2.6.1 Pruning 2.6.2 Irrigation 2.6.3 Pest control	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning

	2.6.4 Disease control 2.6.5 Weeding 2.6.6 Propping 2.6.7 De-suckering 2.6.8 Fertilizer application 2.6.9 Trellising 2.6.10 Mulching 2.6.11 Gapping 2.6.12 Thinning 2.7 Crop harvesting methods 2.7.1 Picking 2.7.2 Cutting 2.7.3 Plucking 2.7.4 Digging	
3 Produce horticulture crops	3.1 Personal protective equipment 3.1.1 Type • Overall • Headgear • Gloves • Gumboots • Goggles 3.1.2 uses 3.2 Land preparation tools and equipment 3.2.1 Land clearing tools and equipment 3.2.2 Tillage tools and equipment 3.3 Land preparation practices 3.3.1 Land clearing 3.3.2 Primary cultivation 3.3.3 Secondary cultivation 3.3.4 Tertiary practices 3.4 Planting materials	• Project Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning

	3.4.1 Seeds 3.4.2 Splits 3.4.3 Suckers 3.4.4 Corms 3.4.5 Slips 3.4.6 Setts 3.4.7 Cuttings 3.5 Planting methods 3.6 Crop routine management practices 3.6.1 Pruning 3.6.2 Irrigation 3.6.3 Pest control 3.6.4 Disease control 3.6.5 Weeding 3.6.6 Staking 3.6.7 Propping 3.6.8 De-suckering 3.6.9 Fertilizer application 3.6.10 Trellising 3.6.11 Mulching 3.6.12 Gapping 3.6.13 Thinning 3.7 Crop harvesting methods 3.7.1 Picking 3.7.2 Cutting 3.7.3 Plucking 3.7.4 digging	
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Suggested method of delivery

- Project
- Demonstration
- Practicals
- Discussions
- Direct instruction

Recommended resources for 25 trainees

S/No	Item/Category	Description/Specification	Quantity	Recommended Ratio (Item: Trainee)
A	Learning Materials			
	Text books	Livestock production books	5	1:5
B	Learning Facilities & infrastructure			
	classroom		1	1:25
	greenhouse		1	1:25
	Farm		1	1:25
	Pesticides		1	1:25
	fertilizer		1	1:25
C	Consumable materials			
	notebooks	A4 SIZE	25	1:1
	Flip chart		1	1:25
	White board		1	1:25
	Marker pens	Erasable	2	1:13
D	Tools and Equipment			
	Projectors	EPSON 2788 LUMEN or any brand	1	1:25
	Computers /smartphone	Any brand-5 th generation and above Core i5	5	1:5
	internet	Reliable and fast		
			5	1:5

AGRI-ENTERPRISE FARM BUDGETING

ISCED UNIT CODE: 0811 551 13A

TVETCDACC UNIT CODE: AQ/CU/PN/CR/02/6/MA

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Perform Agri-marketing farm budgeting.

Duration of the unit: 110 HOURS

UNIT DESCRIPTION

This unit specifies the competencies required to perform Agri-marketing farm budgeting. It involves carrying out Agri-enterprise cost estimation, carrying out revenue forecasting and managing cash-flow.

Summary of learning outcomes

By the end of this unit of learning, the trainee should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Carryout agri-enterprise cost estimation	50
2.	Carry out revenue forecasting	30
3.	Manage cash-flow	30
Total		110

Learning Outcomes, Content and Methods of assessment

Learning Outcome	Content	Methods of assessment
1. Carry out Agri-enterprise cost estimation	1.1 Agri-enterprise costs 1.1.1 Average costs 1.1.2 Direct costs 1.1.3 Capital costs 1.1.4 Operating costs 1.1.5 Indirect costs 1.1.6 Semi-variable costs	• Practical • Project • Third party report • Portfolio of evidence • Written tests

	1.1.7 Sunk costs 1.1.8 Marginal costs 1.1.9 Fixed costs 1.1.10 Variable costs 1.1.11 Product costs 1.1.12 Total costs 1.2 Agri-enterprise production quantities 1.3 Agri-enterprise unit costs 1.4 Agri-enterprise total costs 1.5 Agri –enterprise costs review and adjustment	• Oral questioning
2. Carry out revenue forecasting	2.1 Agri-enterprise budgets 2.1.1 Enterprise budgets 2.1.2 Partial budgets 2.1.3 Cash flow budgets 2.1.4 Gross margin budgets 2.1.5 Break even budgets 2.1.6 Linear programming 2.2 Agri-enterprise income levels 2.2.1 Sales revenue 2.2.2 Service revenue 2.2.3 Interest income 2.2.4 Dividend income 2.2.5 Rental income 2.2.6 Royalty income 2.2.7 Capital gains 2.2.8 Commission income 2.2.9 Franchise income 2.2.10 Subscription income 2.2.11 Grants and subsidies 2.3 Agri-enterprise reviews and adjustments	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning
3. Manage cash-flow	3.1 Agri-enterprise financial statements 3.1.1 Working capital estimates 3.1.2 Balance sheets 3.1.3 Trading, Profit and loss accounts 3.1.4 Break even analysis 3.1.5 Cash flow projections 3.1.6 Desired financing 3.2 Agri-enterprise profitability ratios	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral

	3.2.1 Liquidity ratios 3.2.2 Returns on investment 3.2.3 Gross profit margins 3.2.4 Net profit margins 3.2.5 Operating profit margins 3.2.6 Return on assets 3.2.7 Return on equity 3.3 Reviews and adjustments	questioning
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Suggested Methods of delivery

- Project
- Demonstration
- Practicals
- Discussions
- Direct instruction

Recommended Resources

S/No	Item/Category	Description/Specification	Quantity	Recommended Ratio (Item: Trainee)
A	Learning Materials			
	Text books & E-learning materials	Farm account book	5	1:5
	Ledger book samples		5	
	Receipt book samples		5	1:5
	Bank statements samples		5	1:5
	Balance sheet samples	FBM Books	5	1:5
	Profit and loss account samples	FBM Book	5	1:5
B	Learning Facilities &			

	infrastructure			
	classroom		1	1:25
C	Consumable materials			
	notebooks	A4 SIZE	25	1:1
	Flip chart		1	1:25
D	Tools and Equipment			
	Projectors	EPSON 2788 LUMEN	1	1:25
	Computers	Any brand-5 th generation and above COi5	5	1:5

DEVELOP AGRI-ENTERPRISE RECORDS

ISCED UNIT CODE: 0811 551 15A

TVETCDACC UNIT CODE: AQ/CU/PN/CR/03/6/MA

Relationship to Occupational Standards

This unit addresses the unit of competency: Develop Agri-enterprise records

Duration of Unit: 50 HOURS

Unit Description

This unit specifies the competencies required to develop Agri-enterprise records. It involves establishing Agri-enterprise record system, establishing record keeping procedures, recording Agri-enterprise data, storing Agri-enterprise records

Summary of learning outcomes

By the end of this unit of learning, the trainee should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Establish agri-enterprise record system	10
2.	Establish record keeping procedures	20
3.	Record agri-enterprise data	10
4.	Store agri-enterprise records	10
Total		50

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Establish Agri-enterprise record system	1.1 Agri-enterprise record systems establishment 1.1.1 Manual record keeping 1.1.2 Spread sheet-based system 1.1.3 Farm management soft ware	• Practical • Project • Third party report • Portfolio of evidence • Written tests

	1.1.4 Cloud based systems 1.1.5 Precision system 1.1.6 Customized systems 1.2 Agri-enterprise record system application 1.3 Review and adjustments of Agri-enterprise records system	• Oral questioning
2. Establish records keeping procedures	2.1 Agri-enterprise record keeping procedures 2.2 Agri-enterprise record keeping procedures and application 2.2.1 Administrative procedures 2.2.2 Data entry and capture procedures 2.2.3 Storage and organizational procedures 2.2.4 Retention and disposal procedures 2.2.5 Security and control procedures 2.2.6 Quality assurance procedures 2.2.7 Monitoring and reviewing 2.2.8 Communication and collaboration procedures 2.3 Review and adjustments of record keeping procedures	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning
3. Record Agri-enterprise data	3.1 Agri-enterprise data collection -data collection forms -GPS devices -digital gadgets -soil test kits -weather monitoring equipment -Data collection mobile application 3.2 Agri-enterprise data recording -electronic devices -data recording software Spreadsheets -data backups Data validation tools	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning

	3.3 Review and updates of records	
4.Store Agri-enterprise records	4.1 Agri-enterprise data storage establishment- 4.1.1 Digital 4.1.2 Manual 4.1.3 Cloud storage service 4.1.4 Farm management soft wares 4.1.5 Data backup redundancy 4.1.6 Scaling and flexibility 4.1.7 Disaster recovery planning 4.1.8 Data security measures 4.2 Agri-enterprise data storage 4.2.1 cloud storage 4.2.2 eternal hard drives 4.2.3 network attached storage (NAS) 4.2.4 data management software 4.3.5 training on data management practices 4.3 Review and adjustments	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning

Suggested Methods of delivery

1. Project
2. Demonstration
3. Practicals
4. Discussions
5. Direct instruction

Recommended Resources for 25 trainees

S/No	Item/Category	Description/Specification	Quantity	Recommended Ratio (Item: Trainee)
A	Learning Materials			
	Text books	Farm account books and ict books	5	1:5
B	Learning Facilities & infrastructure			

	Classroom /computer lab		1	1:25
C	Consumable materials			
	notebooks	A4 SIZE	25	1:1
	Flip chart		1	1:25
D	Tools and Equipment			
	Projectors	EPSON 2788 LUMEN	1	1:25
	Internet	Fast and reliable		
	Computers	Any brand-5 th generation and above COi5	5	1:5

MODULE VI