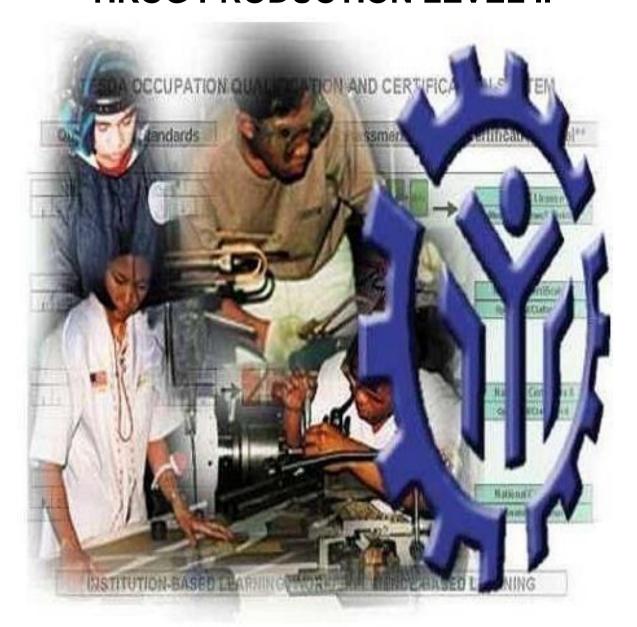
COMPETENCY STANDARDS

TIKOG PRODUCTION LEVEL II



AGRICULTURE, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITYTESDA Samar Provincial Office, Capitol Compound, Catbalogan City, Samar

Technical Education and Skills Development Act of 1994(Republic Act No. 7796)

Section 22, "Establishment and Administration of the National Trade Skills Standards" of the RA 7796 known as the TESDA Act mandates TESDA to establish national occupational skill standards. The Authority shall develop and implement a certification and accreditation program in which private industry group and trade associations are accredited to conduct approved trade tests, and the local government units to promote such trade testing activities in their respective areas in accordance with the guidelines to be set by the Authority.

The Competency Standards (CS) serve as basis for the:

- 1. Competency assessment and certification;
- 2. Registration and delivery of training programs; and
- 3. Development of curriculum and assessment instruments.

Each CS has two sections:

- Section 1 **Definition of Qualification** describes the qualification and defines the competencies that comprise the qualification.
- Section 2 **The Competency Standards** format was revised to include the Required Knowledge and Required Skills per element. These fields explicitly state the required knowledge and skills for competent performance of a unit of competency in an informed and effective manner. These also emphasize the application of knowledge and skills to situations where understanding is converted into a workplace outcome.

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COMPETENCY STANDARDS FOR

TIKOG PRODUCTION LEVEL II

SECTION 1 TIKOG PRODUCTION LEVEL II QUALIFICATION

The **TIKOG PRODUCTION LEVEL II** Qualification consists of competencies that a person must have in order to focus on tikog production, that is from perform land preparation, plant tikog, conduct harvest and post-harvest, and establish tikog stalks drying.

This Qualification is packaged from the competency map of the Agriculture, Forestry and Fishery Sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

CODE NO.	BASIC COMPETENCIES
400311210	Participate in workplace communication
400311211	Work in team environment
400311212	Solve/address general workplace problems
400311213	Develop career and life decisions
400311214	Contribute to workplace innovation
400311215	Present relevant information
400311216	Practice occupational safety and health policies and procedures
400311217	Exercise efficient and effective sustainable practices in theworkplace
400311218	Practice entrepreneurial skills in the workplace
CODE NO.	COMMON COMPETENCIES
CODE NO. AFF321201	COMMON COMPETENCIES Apply safety measures in farm operations
AFF321201	Apply safety measures in farm operations
AFF321201 AFF321202	Apply safety measures in farm operations Use farm tools and equipment
AFF321201 AFF321202 AFF321203 CODE NO.	Apply safety measures in farm operations Use farm tools and equipment Perform estimation and basic calculation CORE COMPETENCIES
AFF321201 AFF321202 AFF321203	Apply safety measures in farm operations Use farm tools and equipment Perform estimation and basic calculation CORE COMPETENCIES Perform Land Preparation
AFF321201 AFF321202 AFF321203 CODE NO. AB-AFF0860020611301	Apply safety measures in farm operations Use farm tools and equipment Perform estimation and basic calculation CORE COMPETENCIES

A person who has achieved this Qualification is competent to be:

□ Tikog Farmer

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common, and core units of competency required in **TIKOG PRODUCTION LEVEL II**.

BASIC COMPETENCIES

UNIT OF COMPETENCY : PARTICIPATE IN WORKPLACE COMMUNICATION

UNIT CODE : 400311210

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes

required to gather, interpret and convey informationin

response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Obtain and convey workplace information	 1.1 Specific and relevant information is accessed from appropriate sources. 1.2 Effective questioning, active listening and speaking skills are used to gather and convey information. 1.3 Appropriate medium is used to transfer informationand ideas. 1.4 Appropriate nonverbal communication is used. 1.5 Appropriate lines ofcommunication withsupervisors and colleagues are identified and followed. 1.6 Defined workplace procedures for the location and storage of information are used. 1.7 Personal 	 1.1 Effective verbal and non-verbal communication 1.2 Different modes of communication 1.3 Medium of communication in the workplace 1.4 Organizational policies 1.5 Communication procedures and systems 1.6 Lines of Communication 1.7 Technology relevant to the enterprise and the individual's work responsibilities 1.8 Workplace etiquette 	 1.1 Following simple spoken language 1.2 Performing routine workplace duties following simple written notices 1.3 Participating in workplace meetings and discussions 1.4 Preparing work-related documents 1.5 Estimating, calculating and recording routine workplace measures 1.6 Relating/ Interacting with people of various levels in the workplace 1.7 Gathering and providing basic information in response to workplace requirements

			1	
	interactionis			
	carried out clearly			
	and concisely.			
2. Perform 2.1	Written notices and	2.1 Effective verbal	2.1	Following simple
duties	instructions are	and non-verbal		spoken
following	read and	communication		instructions
workplace	interpreted in	2.2 Different modes	2.2	Performing
instructions	accordance with	of communication		routine workplace
	organizational	2.3 Medium of		duties following
	guidelines.	communication in		simple written
2.3	Routine written	the workplace		notices
	instructions are	2.4 Organizational/	23	Participating in
	followed based on	Workplace policies	2.0	workplace
	established	2.5 Communication		meetings and
	procedures.	procedures and		discussions
	-		2.4	Completing work-
2.3	Feedback is given	systems	2.4	. •
	to workplace	2.6 Lines of		related
	supervisor based	Communication	0.5	documents
	instructions/	2.7 Technology	2.5	Estimating,
	information	relevant to the		calculating and
	received.	enterprise and the		recording routine
2.4	Workplace	individual's work		workplace
	<i>interactions</i> are	responsibilities		measures
	conducted in a	2.8 Effective	2.6	Relating/
	courteous manner.	Questioning		Responding to
2.5	Where necessary,	techniques		people of various
	clarifications about	(clarifying and		levels in the
	routine workplace	probing)		workplace
	procedures and	2.9 Workplace etiquette	2.7	Gathering and
	matters			providing
	concerning			information in
	conditions of			response to
	employment are			workplace
	sought and asked			requirements
	from appropriate		2.8	Basic questioning/
	sources.			querying
26	Meetings		29	Skills in reading
2.0	outcomes are		2.0	for information
	interpreted and		2 10	Skills in locating
	implemented.		2.10	Jokins in locating
3. Complete 3.		3.1 Effective verbal	3.1	Completing
relevant	relating to	and non-verbal	J. I	work-related
work-related	conditions of			documents
		communication	2.2	
documents	employment are	3.2 Different modes of	3.2	Applying
	completed	communication		operations of
	accurately and	3.3 Workplace		addition,
	legibly.	formsand		subtraction,
3.2	? Workplace data is	documents		division and
	recorded on	3.4 Organizational/		multiplication
	standard workplace	Workplace	3.3	J
	forms and	policies		providing
	documents.	3.5 Communication		information in
3.3	B Errors in recording	procedures and		response to
	information on	systems		workplace

3.4	forms/ documents are identified and acted upon. Reporting requirements to supervisor are completed according to organizational quidelines.	3.6 Technology relevant to the enterprise and theindividual's work responsibilities	3.4	requirements Effective recordkeeping skills

VARIABLE	RANGE			
 Appropriate 	May include:			
sources	1.1 Team members			
	1.2 Supervisor/Department Head Suppliers			
	1.3 Trade personnel			
	1.4 Local government			
	1.5 Industry bodies			
2. Medium	May include:			
	2.1 Memorandum			
	2.2 Circular			
	2.3 Notice			
	2.4 Information dissemination			
	2.5 Follow-up or verbal instructions			
	2.6 Face-to-face communication			
	2.7 Electronic media (disk files, cyberspace)			
3. Storage	May include:			
	3.1 Manual filing system			
	3.2 Computer-based filing system			
4. Workplace	May include:			
interactions	4.1 Face-to-face			
	4.2 Telephone			
	4.3 Electronic and two-way radio			
	4.4 Written including electronic means, memos, instruction and forms			
	4.5 Non-verbal including gestures, signals, signs and diagrams			
5. Forms	May include:			
	5.1 HR/Personnel forms, telephone message forms, safety reports			

Assessment requires evidence that the candidate:
1.1 Prepared written communication following standard format of
the organization
1.2 Accessed information using workplace communication
equipment/systems
1.3 Made use of relevant terms as an aid to transfer information
effectively
1.4 Conveyed information effectively adopting formal or informal
communication
The following resources should be provided:
2.1 Fax machine
2.2 Telephone
2.3 Notebook
2.4 Writing materials
2.5 Computer with Internet connection
Competency in this unit may be assessed through:
3.1 Demonstration with oral questioning
3.2 Interview
3.3 Written test
3.4 Third-party report
4.1 Competency may be assessed individually in the actual
workplace or through an accredited institution

UNIT OF COMPETENCY : WORK IN TEAM ENVIRONMENT

UNIT CODE : 400311211

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to

identify one's roles and responsibilities as a member of

a team.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Describe team role and scope 2. Identify one's role and and room one in life.	 1.1 The <i>role and objective of the team</i> is identified from available sources of information. 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources. 2.1 Individual roles and responsibilities within 	1.1 Group structure 1.2 Group Development 1.3 Sources of information 2.1 Team roles and objectives	1.1 Communicating with others, appropriately consistent with the culture of theworkplace 1.2 Developing ways in improving work structure and performing respective roles in the group or organization 2.1 Communicating with others,
responsibility within a team	the team environment are identified. 2.2 Roles and objectives of the team is identifiedfrom available sources of information. 2.3 Team parameters, reporting relationships and responsibilities are identified based on team discussions and appropriate external sources.	2.2 Team structure and parameters 2.3 Team Development 2.4 Sources of information	appropriately consistent with the culture of the workplace 2.2 Developing ways in improving work structure and performing respective roles in the group or organization
3. Work as a teammember	3.1 Effective and appropriate forms of communicationare used and interactions undertaken with team members based on company practices.	3.1 Communication Process 3.2 Workplace communication protocol 3.3 Team planning and decision making 3.4 Team thinking	3.1 Communicating appropriately, consistent with the culture of the workplace. 3.2 Interacting effectively with others 3.3 Deciding as an

3.2 Effective and	3.5 Team	roles	individual and as
appropriate	3.6 Proces	ss of team	a group using
contributions	made develo	pment	group think
to complement	nt team 3.7 Workp	lace	strategies and
activities and	contex	t	techniques
objectives, ba	ised on	3.4	Contributing to
workplace c	ontext.		Resolution of
3.3 Protocols in			issues and
reporting are			concerns
observed bas	ed on		
standard com	pany		
practices.			
3.4 Contribute to	the		
development	of		
team work pla	ans		
based on an			
understanding	g of		
team's role ar			
objectives.			

VARIABLE	RANGE	
Role and objective of team	May include: 1.1 Work activities in a team environment with enterprise of specific sector 1.2 Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment	
2. Sources of information	May include: 2.1 Standard operating and/or other workplaceprocedures 2.2 Job procedures 2.3 Machine/equipment manufacturer's specifications and instructions 2.4 Organizational or external personnel 2.5 Client/supplier instructions 2.6 Quality standards 2.7 OHS and environmental standards	
3. Workplace context	May include: 3.1 Work procedures and practices 3.2 Conditions of work environments 3.3 Legislation and industrial agreements 3.4 Standard work practice including the storage, safe handling and disposal of chemicals 3.5 Safety, environmental, housekeeping and quality guidelines	

1. Critical aspects of	Assessment requires evidence that the candidate:
Competency	1.1 Worked in a team to complete workplace activities
	1.2 Worked effectively with others
	1.3 Conveyed information in written or oral form
	1.4 Selected and used appropriate workplace language
	1.5 Followed designated work plan for the job
2. Resource Implications	The following resources should be provided:
	2.1 Access to relevant workplace or appropriately simulated
	environment where assessment can take place
	2.2 Materials relevant to the proposed activity or tasks
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Role play involving the participation of individual member
	to the attainment of organizational goal
	3.2 Case studies and scenarios as a basis for discussion of
	issues and strategies in teamwork
	3.3 Socio-drama and socio-metric methods
	3.4 Sensitivity techniques
	3.5 Written Test
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a
	simulated workplace setting
	4.2 Assessment shall be observed while task are being
	undertaken whether individually or in group

UNIT OF COMPETENCY : SOLVE/ADDRESS GENERAL WORKPLACE

PROBLEMS

UNIT CODE : 400311212

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes

required to apply problem-solving techniques to determine the origin of problems and plan for their resolution. It also includes addressing procedural

problems through documentation, and referral.

ELEMENT	PERFORMANCE CRITERIA Italicized terms areelaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Identify routine problems	 1.1. Routine problems or procedural problem areas are identified. 1.2 Problems to be investigated are defined and determined 1.3 Current conditions of the problem are identified and documented. 	maintenance, service and helpdesk practices, processes and procedures 1.3 Industry standard diagnostic tools 1.4 Malfunctions and resolutions	 1.1 Identifying current industry hardware and software products and services 1.2 Identifying current industry maintenance, services and helpdesk practices, processes and procedures. 1.3 Identifying current industry standard diagnostic tools. 1.4 Describing common malfunctions and resolutions. 1.5 Determining the root cause of a routine malfunction
2. Look for solutions to routine problems	 2.1 Potential solutions to problem are identified. 2.2 Recommendation sabout possible solutions are developed, documented, ranked and presented to appropriate person for decision. 	hardware and software products and services 2.2 Industry service and helpdesk practices, processes and procedures 2.3 Operating systems 2.4 Industry standard diagnostic tools 2.5 Malfunctions and resolutions. 2.6 Root cause analysis	 2.1 Identifying current industry hardware and software products and services 2.2 Identifying current industry maintenance, services and helpdesk practices, processes and procedures. 2.3 Identifying current industry standard diagnostic tools. 2.4 Describing common malfunctions and resolutions.

			2.5 Determining the root cause of a routine malfunction
3. Recommend solutions to problems	•	3.1 Standard Procedures 3.2 Documentation produce	3.1 Producing documentation that recommends solutions to problems 3.2 Following established procedures

VARIABLE	RANGE
Problems/Procedural Problem	May include: 1.1 Routine/non – routine processes and qualityproblems 1.2 Equipment selection, availability and failure 1.3 Teamwork and work allocation problem 1.4 Safety and emergency situations and incidents 1.5 Work-related problems outside of own work area
2. Appropriate person	May include: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	May include: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	May include: 4.1 Priority requirements 4.2 Coordination and feedback requirements 4.3 Safety requirements 4.4 Risk assessment 4.5 Environmental requirements

EVIDENCE GUIDE	
1. Critical	Assessment requires evidence that the candidate:
aspects of	1.1 Determined the root cause of a routine problem
Competency	1.2 Identified solutions to procedural problems.
	1.3 Produced documentation that recommends solutions to problems.
	1.4 Followed established procedures.
	1.5 Referred unresolved problems to support persons.
2. Resource	2.1 Assessment will require access to a workplace over anextended
Implications	period, or a suitable method of gathering
	evidence of operating ability over a range of situations.
3. Methods of	Competency in this unit may be assessed through:
Assessment	3.1 Case Formulation
	3.2 Life Narrative Inquiry
	3.3 Standardized test
	The unit will be assessed in a holistic manner as is practical andmay be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.
	Simulation may be required to allow for timely assessment of parts of this unit of competency.
	Simulation should be based onthe actual workplace and will include
	walk through of the relevant competency components.
4. Context for	4.1 Competency may be assessed individually in the actual workplace
Assessment	or simulation environment in TESDA accreditedinstitutions.

UNIT OF COMPETENCY : DEVELOP CAREER AND LIFE DECISIONS

UNIT CODE : 400311213

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes in

managing one's emotions, developing reflective practice, and boosting self-confidence and developing

self-regulation.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Manage one's emotion	 1.1 Self-management strategies are identified. 1.2 Skills to work independently and to show initiative, tobe conscientious, and persevering in the face of setbacks and frustrations are developed. 1.3 Techniques for effectively handling negative emotions and unpleasant situation in the workplace are examined. 	1.1 Self-management strategies that assist in regulating behavior and achieving personal and learning goals (e.g. Nine self-management strategies according to Robert Kelley) 1.2 Enablers and barriers in achieving personal and career goals 1.3 Techniques in handling negative emotions and unpleasant situation in the workplace such as frustration, anger, worry, anxiety, etc.	1.1 Managing properly one's emotions and recognizing situations that cannot be changed and accept them and remain professional 1.2 Developing self-discipline, working independently and showing initiative to achieve personal and career goals 1.3 Showing confidence, and resilience in the face of setbacks and frustrations and other negative emotions and unpleasant situations in the workplace
2. Develop reflective practice	2.1 Personal strengths and achievements, based on selfassessment strategies and teacher feedback are contemplated. 2.2 Progress when seeking and	2.1 Basic SWOT analysis 2.2 Strategies to improve one'sattitude in the workplace 2.3 Gibbs' Reflective	2.1 Using the basic SWOT analysis as self-assessment strategy 2.2 Developing reflective practice through

	responding to feedback from teachers to assist them in consolidating strengths, addressing weaknesses and fulfilling their potential are monitored 2.3 Outcomes of personal and academic challenges by reflecting on previous problem solving and decision making strategies and feedback from peers and teachers are predicted.	Cycle/Model (Description, Feelings, Evaluation, Analysis, Conclusion, andAction plan)	realization of limitations, likes/dislikes; through showing of self-confidence 2.3 Demonstrating self-acceptance and being able to accept challenges
3. Boost self- confidence and develop self- regulation	 3.1 Efforts for continuous self-improvements are demonstrated. 3.2 Counter-productive tendencies at work are eliminated. 3.3 Positive outlook in life are maintained. 	3.1 Four components of self-regulation based on Self- Regulation Theory (SRT) 3.2 Personality development concepts 3.3 Self-help concepts (e. g., 7 Habits by Stephen Covey, transactional analysis, psycho- spiritual concepts)	3.1 Performing effective communication skills – reading, writing, conversing skills 3.2 Showing affective skills – flexibility, adaptability, etc. 3.3 Self- assessmentfor determining one's strengths and weaknesses

VARIABLE	RANGE
Self-management strategies	 May include: 1.1 Seeking assistance in the form of job coaching or mentoring 1.2 Continuing dialogue to tackle workplace grievances 1.3 Collective negotiation/bargaining for better working conditions 1.4 Share your goals to improve with a trusted co- worker or supervisor 1.5 Make a negativity log of every instance when you catch yourself complaining to others 1.6 Make lists and schedules for necessary activities
2. Unpleasant situation	May include: 2.1 Job burn-out 2.2 Drug dependence 2.3 Sulking

Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Express emotions appropriately 1.2 Work independently and show initiative 1.3 Consistently demonstrate self-confidence and self-discipline
2. Resource Implications	The following resources should be provided: 2.1 Access to workplace and resources 2.2 Case studies
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration or simulation with oral questioning 3.2 Case problems involving work improvement and sustainability issues 3.3 Third-party report
4. Context for Assessment	4.1 Competency assessment may occur in workplace or any appropriately simulated environment

UNIT OF COMPETENCY : CONTRIBUTE TO WORKPLACE INNOVATION

UNIT CODE : 400311214

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes

required to make a pro-active and positive contribution

to workplace innovation.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify opportunities to dothings better	 1.1 Opportunities for improvement are identified proactively in own area of work. 1.2 Information are gathered and reviewed which may be relevant to ideas and which might assist in gaining support for idea. 	 1.1 Roles of individuals in suggesting and making improvements 1.2 Positive impacts and challenges in innovation. 1.3 Types of changes and responsibility. 1.4 Seven habits of highly effective people. 	1.1 Identifying opportunities to improve and to do things better. Involvement 1.2 Identifying the positive impactsand the challenges of change and innovation 1.3 Identifying examples of the types of changesthat are within and outside own scope of responsibility
2. Discuss and develop ideas withothers	2.2 Ways of approaching people to begin sharing ideas are selected.	and challenges in innovation 2.3 Types of changes and responsibility. 2.4 Seven habits of highly effective people	2.1 Identifying opportunities to improve and to do things better. 2.2 Identifying the positive impactsand the challenges of change and innovation 2.3 Providing examples of the types of changesthat are within and outside own scope of responsibility 2.4 Communicating ideas for change through small group discussions and meetings

3. Integrate ideas for change in the workplace	 3.1 Critical inquiry method is used to integrate different ideas for change ofkey people. 3.2 Summarizing, analyzing and generalizing skills are used to extract salient points in the pool of ideas. 3.3 Reporting skills are likewise used to communicate results. 3.4 Current Issues and concerns on the systems, processes and procedures, as well as the need for simple innovative practices are identified. 	3.1 Roles of individuals in suggesting and making improvements 3.2 Positive impacts and challenges in innovation 3.3 Types of changes and responsibility 3.4 Seven habits of highly effective people 3.5 Basic research skills	3.1 Identifying opportunities to improve and to do things better. 3.2 Identifying the positive impacts and the challenges of change and innovation 3.3 Providing examples of the types of changes that are within and outside own scope of responsibility 3.4 Communicating ideas for change through small group discussions and meetings 3.5 Demonstrating skills in analysis and interpretation of data
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VARIABLE	RANGE
1. Opportunities for	May include:
improvement	1.1 Systems
	1.2 Processes
	1.3 Procedures
	1.4 Protocols
	1.5 Codes
	1.6 Practices
2. Information	May include:
	2.1 Workplace communication problems
	2.2 Performance evaluation results
	2.3 Team dynamics issues and concerns
	2.4 Challenges on return of investment
	2.5 New tools, processes and procedures
	2.6 New people in the organization
3. People who could	May include:
provideinput	3.1 Leaders
	3.2 Managers
	3.3 Specialists
	3.4 Associates
	3.5 Researchers
	3.6 Supervisors
	3.7 Staff
	3.8 Consultants (external)
	3.9 People outside the organization in the same field or
	similar expertise/industry
	3.10 Clients
4. Critical inquiry method	May include:
	4.1 Preparation
	4.2 Discussion
	4.3 Clarification of goals
	4.4 Negotiate towards a Win-Win outcome
	4.5 Agreement
	4.6 Implementation of a course of action
	4.7 Effective verbal communication. See our pages: Verbal Communication and Effective Speaking
	4.8 Listening
	4.9 Reducing misunderstandings is a key part of
	effective negotiation
	4.10 Rapport Building
	4.11 Problem Solving
	4.12 Decision Making 4.13 Assertiveness
	4.14 Dealing with Difficult Situations
5. Reporting skills	May include:
J. Neporting skills	
	5.1 Data management
	5.2 Coding
	5.3 Data analysis and interpretation
	5.4 Coherent writing
	5.5 Speaking

1. Critical aspects of	Assessment requires evidence that the candidate:
Competency	1.1 Identified opportunities to do things better.
	1.2 Discussed and developed ideas with others on how to contribute to workplace innovation.
	1.3 Integrated ideas for change in the workplace.
	1.4 Analyzed and reported rooms for innovation and
	learning in the workplace.
2. Resource Implications	The following resources should be provided:
	2.1 Pens, papers and writing implements
	2.2 Cartolina
	2.3 Manila papers
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Psychological and behavioral Interviews
	3.2 Performance Evaluation
	3.3 Life Narrative Inquiry
	3.4 Review of portfolios of evidence and third-party
	workplacereports of on-the-job performance
	3.5 Sensitivity analysis
	3.6 Organizational analysis
	3.7 Standardized assessment of character strengths
	andvirtues applied
4. Context for Assessment	4.1 Competency may be assessed individually in the
	actualworkplace or simulation environment in
	TESDA accredited institutions.

UNIT OF COMPETENCY : PRESENT RELEVANT INFORMATION

UNIT CODE : 400311215

UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes

required to present data/information appropriately.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Gather data/ information	 1.1 Evidence, facts and information are collected. 1.2 Evaluation, terms of reference and conditions are reviewed to determine whether data/information falls within project scope. 	 1.1 Organisational protocols 1.2 Confidentiality 1.3 Accuracy 1.4 Business mathematics and statistics 1.5 Data analysis techniques/procedures 1.6 Reporting requirements toa range of audiences 1.7 Legislation, policy and procedures relating to the conduct of evaluations 1.8 Organisational values, ethics and codes of conduct 	1.1 Describing organisational protocols relating to client liaison 1.2 Protecting confidentiality 1.3 Describing accuracy 1.4 Computing business mathematics and statistics 1.5 Describing data analysis techniques/ procedures 1.6 Reporting requirements toa range of audiences 1.7 Stating legislation, policy and procedures relating to the conduct of evaluations 1.8 Stating organisational values, ethics and codes of conduct
2. Assess gathered data/ information	2.1 Validity of data/ information is assessed. 2.2 Analysis techniques are applied to assess data/information. 2.3 Trends and anomalies are identified	2.1 Business mathematics and statistics 2.2 Data analysis techniques/procedures 2.3 Reporting requirements to a range of audiences	2.1 Computing business mathematics and statistics 2.2 Describing data analysis techniques/ procedures 2.3 Reporting requirements to

	2.4 Data analysis techniques and procedures are documented. 2.5 Recommendation s are made on areas of possible improvement	2.4 Legislation, policy and procedures relating to the conduct of evaluations 2.5 Organisational values, ethics and codes of conduct	a range of audiences 2.4 Stating legislation, policy and procedures relating to the conduct of evaluations 2.5 Stating organisational values, ethics and codes of conduct
3. Record and present information	 3.1 Studied data/information are recorded. 3.2 Recommendations are analysed for action to ensure they are compatible with the project's scope and termsof reference. 3.3 Interim and final reports are analysed and outcomes are compared to the criteria established at the outset. 3.4 Findings are presented to stakeholders. 	3.1 Data analysis techniques/ procedures 3.2 Reporting requirements to a range of audiences 3.3 Legislation, policy and procedures relating to the conduct of evaluations 3.4 Organisational values, ethics and codes of conduct	3.1 Describing data analysis techniques/ procedures 3.2 Reporting requirements to a range of audiences 3.3 Stating legislation, policy and procedures relating to the conduct of evaluations 3.4 Stating organisational values, ethics and codes of conduct practices

VARIABLE	RANGE
1. Data analysis techniques	May include:
	1.1 Domain analysis
	1.2 Content analysis
	1.3 Comparison technique

Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Determine data / information 1.2 Studied and applied gathered data/information 1.3 Recorded and studied data/information These aspects may be best assessed using a range of scenarios what ifs as a stimulus with a walk through formingpart of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.
2. Resource Implications	Specific resources for assessment 2.1 Evidence of competent performance should be obtained by observing an individual in an information managementrole within the workplace or operational or simulated environment.
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Written Test 3.2 Interview 3.3 Portfolio The unit will be assessed in a holistic manner as is practical andmay be integrated with the assessment of other relevant units ofcompetency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	4.1 In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

UNIT OF COMPETENCY : PRACTICE OCCUPATIONAL SAFETY AND

HEALTH POLICIES AND PROCEDURES

UNIT CODE : 400311216

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes

required to identify OSH compliance requirements, prepare OSH requirements for compliance, and perform tasks in accordance with relevant OSH

policies and procedures.

	PERFORMANCE		
	CRITERIA	REQUIRED	REQUIRED
ELEMENT	<i>Italicized terms</i> are	KNOWLEDGE	SKILLS
	elaborated in the		
	Range of Variables		
1. Identify OSH		1.1 OSH	1.1 Communication
compliance	requirements,	preventiveand	skills
requirements	regulations, policies	control	1.2 Interpersonalskills
	and procedures are identified in	requirements 1.2 Hierarchy of	1.3 Critical thinking skills
	accordance with	Controls	1.4 Observationskills
	workplace policiesand	1.3 Hazard	1.4 Observationskiis
	procedures.	Prevention and	
	1.2 OSH activity non-	Control	
	conformities are	1.4 General OSH	
	conveyed to	principles	
	appropriate	1.5 Work standards	
	personnel.	and procedures	
	1.3 OSH preventive and	1.6 Safe handling	
	control requirements areidentified in	procedures of tools, equipment	
	accordance with OSH	and materials	
	work policies	1.7 Standard	
	and procedures.	emergency plan	
	•	and procedures	
		inthe workplace	
2. Prepare	2.1 OSH work activity	2.1 Resources	2.1 Communication
OSH	material, tools and	necessary to	skills
requirements	equipment .	execute	2.2 Estimation skills
for	requirements are identified in	hierarchyof	2.3 Interpersonal skills
compliance	accordance with	controls 2.2 General OSH	2.4 Critical thinking
	workplace policies	principles	skills
	and procedures.	2.3 Work standards	2.5 Observation
	2.2 Required OSH	and procedures	skills
	materials, tools and	2.4 Safe handling	2.6 Material, tool and
	equipment are	procedures of	equipment
	acquired in	tools,	identification
	accordance with	equipmentand	skills
	workplace policies	materials 2.5 Different OSH	
	and procedures. 2.3 Required OSH	control	
	materials, tools and	measures	
		IIICasules	

	equipment are arranged/ placed in accordance with OSH work standards.		
3. Perform tasks in accordance withrelevant OSH policies and procedures	3.1 Relevant OSH work procedures are identified in accordance with workplace policies and procedures. 3.2 Work Activities are executed in accordance with OSH work standards. 3.3 Non-compliance work activities are reported to appropriate personnel.	3.1 OSH work standards 3.2 Industry-related work activities 3.3 General OSH principles 3.4 OSH Violations Non-compliance work activities	3.1 Communication skills 3.2 Interpersonal skills 3.3 Troubleshooting skills 3.4 Critical thinking skills 3.5 Observation skills

VARIABLE	RANGE	
1. OSH Requirements,	May include:	
Regulations, Policies and	1.1 Clean Air Act	
Procedures	1.2 Building code	
	1.3 National Electrical and Fire Safety Codes	
	1.4 Waste management statutes and rules	
	1.5 Permit to Operate	
	1.6 Philippine Occupational Safety and Health Standards	
	1.7 Department Order No. 13 (Construction	
	Safety andHealth)	
	1.8 ECC regulations	
2. Appropriate Personnel	May include:	
	2.1 Manager	
	2.2 Safety Officer	
	2.3 EHS Offices	
	2.4 Supervisors	
	2.5 Team Leaders	
	2.6 Administrators	
	2.7 Stakeholders	
	2.8 Government Official	
	2.9 Key Personnel	
	2.10 Specialists	
	2.11 Himself	
3. OSH Preventive and	May include:	
Control Requirements	3.1 Resources needed for removing hazard effectively	
	3.2 Resources needed for substitution or replacement	
	3.3 Resources needed to establishing engineering controls	
	3.4 Resources needed for enforcing administrative	
	controls	
	3.5 Personal Protective equipment	
4. Non OSH-Compliance Work	May include non-compliance or observance of the	
Activities	following safety measures:	
	4.1 Violations that may lead to serious physical harm	
	or death	
	4.2 Fall Protection	
	4.3 Hazard Communication	
	4.4 Respiratory Protection	
	4.5 Power Industrial Trucks 4.6 Lockout/Tag-out	
	4.7 Working at heights (use of ladder, scaffolding)	
	4.8 Electrical Wiring Methods	
	4.9 Machine Guarding	
	4.10 Electrical General Requirements	
	4.11 Asbestos work requirements	
	4.12 Excavations work requirements	

THE THE TOTAL TOTAL	
Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Convey OSH work non-conformities to appropriate personnel 1.2 Identify OSH preventive and control requirements in accordance with OSH work policies and procedures 1.3 Identify OSH work activity material, tools and equipment requirements in accordance with workplace policies and procedures 1.4 Arrange/Place required OSH materials, tools and equipment in accordance with OSH work standards 1.5 Execute work activities in accordance with OSH work standards 1.6 Report OSH activity non-compliance work activities to appropriate personnel
2. Resource Implications	The following resources should be provided: 2.1 Facilities, materials tools and equipment necessary for the activity
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Observation/Demonstration with oral questioning 3.2 Third party report
4. Context for Assessment	4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : EXERCISE EFFICIENT AND EFFECTIVE

SUSTAINABLE PRACTICES IN THE WORKPLACE

UNIT CODE : 400311217

UNIT DESCRIPTOR : This unit covers knowledge, skills and attitude to

identify the efficiency and effectiveness of resource utilization, determine causes of inefficiency and/or ineffectiveness of resource utilization and Convey inefficient and ineffective environmental practices.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Identify the efficiency and effectiveness of resource utilization	 1.1 Required resource utilization in the workplace is measured using appropriate techniques. 1.2 Data are recorded in accordance with workplace protocol. 1.3 Recorded data are compared to determine the efficiency and effectiveness of resource utilization according to established environmental work procedures. 	1.1 Importance of Environmental Literacy 1.2 Environmental Work Procedures 1.3 Waste Minimization 1.4 Efficient Energy Consumptions	1.1 Recording Skills 1.2 Writing Skills 1.3 Innovation Skills
2. Determine causes of inefficiency and/or ineffectivene ss of resource utilization	 2.1 Potential causes of inefficiency and/or ineffectiveness are listed. 2.2 Causes of inefficiency and/or ineffectiveness are identified through deductive reasoning. 2.3 Identified causes of inefficiency and/or ineffectiveness are validated thru established environmental procedures. 	2.1 Causes of environmental inefficiencies and ineffectiveness	2.1 Deductive Reasoning Skills 2.2 Critical thinking 2.3 Problem Solving 2.4 Observation Skills
3. Convey inefficient and	3.1 Efficiency and effectiveness of resource utilizationare	3.1 Appropriate Personnel to address the	3.1 Written and Oral Communication Skills

ineffective	reported to <i>appropriate</i>	environmental	3.2 Critical thinking
environment	personnel.	hazards	skills
al practices	3.2 Concerns related	3.2 Environmental	3.3 Problem Solving
	resource utilizationare	corrective actions	skills
	discussed with		3.4 Observation
	appropriate personnel.		Skills
	3.3 Feedback on		3.5 Practice
	information/concerns		Environmental
	raised areclarified with		Awareness
	appropriate personnel.		

VARIABLE	RANGE
Environmental Work Procedures	May include: 1.1 Utilization of Energy, Water, Fuel Procedures 1.2 Waster Segregation Procedures 1.3 Waste Disposal and Reuse Procedures 1.4 Waste Collection Procedures 1.5 Usage of Hazardous Materials Procedures 1.6 Chemical Application Procedures 1.7 Labeling Procedures
2. Appropriate Personnel	May include: 2.1 Managers 2.2 Safety Officers 2.3 EHS Officers 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Officials 2.9 Key Personnel 2.10 Specialists 2.11 Himself

EVIDENCE GUIDE		
1. Critical aspects of	Assessment requires evidence that the candidate:	
Competency	1.1 Measured required resource utilization in the workplace	
	using appropriate techniques	
	1.2 Recorded data in accordance with workplace protocol	
	1.3 Identified causes of inefficiency and/or ineffectiveness	
	through deductive reasoning	
	1.4 Validate the identified causes of inefficiency and/or ineffectiveness thru established environmental	
	procedures	
	1.5 Report efficiency and effectives of resource utilization to	
	appropriate personnel	
	1.6 Clarify feedback on information/concerns raised with	
	appropriate personnel	
2. Resource Implications	The following resources should be provided:	
	2.1 Workplace	
	2.2 Tools, materials and equipment relevant to the tasks	
	2.3 PPE	
	2.4 Manuals and references	
3. Methods of Assessment	Competency in this unit may be assessed through:	
	3.1 Demonstration	
	3.2 Oral questioning	
	3.3 Written examination	
4. Context for Assessment	4.1 Competency assessment may occur in workplace or	
	any appropriately simulated environment	
	4.2 Assessment shall be observed while task are being	
	undertaken whether individually or in-group	

UNIT OF COMPETENCY : PRACTICE ENTREPRENEURIAL SKILLS IN THE

WORKPLACE

UNIT CODE : 400311218

UNIT DESCRIPTOR : This unit covers the outcomes required to apply

entrepreneurial workplace best practices and

implement cost-effective operations.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Apply entrepreneurial workplace best practices	1.1 Good practices relating to workplace operations are observed and selected following workplace policy. 1.2 Quality procedures and practices are complied with according to workplace requirements. 1.3 Cost-conscious habits in resource utilization are applied based on industry standards.	 1.1 Workplace best practices, policies and criteria 1.2 Resource utilization 1.3 Ways in fostering entrepreneurial attitudes: Patience Honesty Quality-consciousness Safety-consciousness Resourcefulness 	1.1 Communication skills1.2 Complying with quality procedures
2. Communicate entrepreneurial workplace best practices	2.1 Observed good practices relating to workplace operations are communicated to appropriate person. 2.2 Observed quality procedures and practices are communicated to appropriate person	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: • Patience • Honesty • Quality-consciousness • Safety-consciousness • Resourcefulness	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol
3. Implement cost-effective operations	3.1 Preservation and optimization of workplace resources is implemented in accordance with enterprise policy.	3.1 Optimization of workplace resources 3.2 5S procedures and concepts 3.3 Criteria for cost-	3.1 Implementing preservation and optimizing workplace resources 3.2 Observing

3.2 Judicious use of	effectiveness	judicious use of
workplace tools,	3.4 Workplace	workplace
equipment and	productivity	tools,
materials are	3.5 Impact of	equipment and
observed according	entrepreneurial	materials
to manual and work	mindset to	3.3 Making
requirements.	workplace	constructive
3.3 Constructive	productivity	contributions to
contributions to	3.6 Ways in fostering	office
office operations are	entrepreneurial	operations
made according to	attitudes:	3.4 Sustaining
enterprise	Quality-	ability to work
requirements.	consciousness	within allotted
3.4 Ability to work within	Safety-	time and
one's allotted time	consciousness	finances
and finances is		

sustained.

VARIABLE	RANGE		
Good practices	May include:		
	1.1 Economy in use of resources		
	1.2 Documentation of quality practices		
2. Resources utilization	May include:		
	2.1 Consumption/ use of consumables		
	2.2 Use/Maintenance of assigned equipment and		
	furniture		
	2.3 Optimum use of allotted /available time		

Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to identify and sustain cost-effective activities in the workplace 1.2 Demonstrated ability to practice entrepreneurial knowledge, skills and attitudes in the workplace.			
2. Resource	The following resources should be provided:			
Implications	2.1 Simulated or actual workplace			
	2.2 Tools, materials and supplies needed to demonstrate the required tasks			
	2.3 References and manuals			
	2.3.1 Enterprise procedures manuals			
	2.3.2 Company quality policy			
3. Methods of	Competency in this unit should be assessed through:			
Assessment	.1 Interview			
	3.2 Third-party report			
4. Context for	4.1 Competency may be assessed in workplace or in			
Assessment	asimulated workplace setting			
	4.2 Assessment shall be observed while tasks are being			
	undertaken whether individually or in-group			

COMMON COMPETENCIES

UNIT OF COMPETENCY : APPLY SAFETY MEASURES IN FARM OPERATIONS

UNIT CODE : AGR321201

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes

required to perform safety measures effectively and efficiently. It includes identifying areas, tools, materials,

time, and place in performing safety

measures.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Determine areas ofconcern for safety measures	 1.1 Work tasks are identified in line with farm operations. 1.2 Place for safety measures are determined in linewith farm operations. 1.3 Time for safety measures are determined in linewith farm operations. 1.4 Appropriate tools, materials and outfits are prepared in line with job requirements. 	 1.1 Different work tasks in farm operations 1.2 Place and time for implementation ofsafety measures 1.3 Different hazards in the workplace 1.4 Types of tools, materials and outfits 1.5 Preparation of tools, materials and outfits 	 1.1 Identifying work tasks in farm operations 1.2 Determining place and time for implementation of safety measures 1.3 Reading labels, manuals and other basic safety information 1.4 Identifying effective/ functional tools,materials and outfit 1.5 Preparing tools, materials and outfits 1.6 Discarding defective tools,and materials
2. Apply appropriate safety measures	 2.1 Tools and materials are used according to specifications and procedures. 2.2 Outfits are worn according to farm requirements. 2.3 Effectivity/shelf life/expiration of materials are strictly observed. 2.4 <i>Emergency procedures</i> are known and followed to ensure a safe work requirement. 	 2.1 Uses and functions of tools 2.2 Outfits and how to wear it 2.3 Expiration/shelflife of materials 2.4 Proper disposal of expired materials 2.5 Environment alrules and regulations 2.6 Emergency procedures 2.7 Hazards identification and reporting 	2.2 Wearing of outfits 2.3 Observing expiration/shelf life

	2.5 Hazards in the workplace are identified and reported in line with farm guidelines.	2.8 Communication skills 2.9 OSHS	
3. Safe keep/dispose tools, materials and outfit	 3.1 Used tools and outfit are cleaned after use and storedin designated areas. 3.2 Unused materials are properly labeledand stored according to manufacturer's recommendation and farm requirements. 3.3 Waste materials aredisposed accordingto manufacturers, government and farm requirements. 	 3.1 Procedures of cleaning used tools and outfits 3.2 Label and storageunused materials 3.3 Disposal of wastes materials 3.4 Manufacturers' recommendatio non keeping materials 3.5 Environment alrules and regulations 	 3.1 Cleaning used tools and outfit 3.2 Labeling and storing unused materials 3.3 Disposing waste materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the subsectors: 1.1 Crop Production 1.2 Post-harvest 1.3 Agri-marketing 1.4 Farm Equipment
2. Place	Stock room/storage areas/warehouse Field/farm/orchard
3. Time	3.1 Fertilizer and pesticides application3.2 Feed mixing and feeding3.3 Harvesting and hauling
4. Tools, materials and outfits	4.1 Tools 4.1.1 Wrenches 4.1.2 Screw driver 4.1.3 Pliers 4.2 Outfit 4.2.1 Masks 4.2.2 Gloves 4.2.3 Boots 4.2.4 Overall coats 4.2.5 Hat 4.2.6 Eye goggles
5. Emergency procedures	5.1 Location of first aid kit5.2 Evacuation5.3 Agencies contract5.4 Farm emergency procedures
6. Hazards	6.1 Chemical 6.2 Electrical 6.3 Falls

Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Determined areas of concern for safety measures 1.2 Applied appropriate safety measures according to industry requirements 1.3 Prepared tools, materials and outfit needed 1.4 Performed proper disposal of used materials 1.5 Cleaned and stored tools, materials and outfit in designated facilities
2. Resource Implications	The following resources should be provided: 2.1 Farm location 2.2 Tools, equipment and outfits appropriate in applying safety measures
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Practical demonstration 3.2 Third Party Report
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accreditedinstitutions.

UNIT OF COMPETENCY : USE FARM TOOLS AND EQUIPMENT

UNIT CODE : AGR321202

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes

required to use farm tools and equipment. It includes selection, operation and preventive maintenance of farm

tools and equipment.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Select and use farm tools	 1.1 Appropriate farm tools are identified according to requirement/use. 1.2 Farm tools are checked for faults and defective toolsreported in accordance with farm procedures. 1.3 Appropriate tools are safely used according to job requirements and manufacturers conditions. 	1.1 Types and uses of farm tools 1.2 Characteristics of functional tools 1.3 Checking tools for defects/faults 1.4 Segregation and reporting defective tools 1.5 Uses of tools	 1.1 Identifying farm tools for the work 1.2 Checking the conditions of tools 1.3 Reporting defective tools 1.4 Using tools
2. Select and operate farm equipment	 2.1 Identify appropriate farm equipment. 2.2 Instructional manualof the farm tools and equipment are carefully read prior to operation. 2.3 Pre-operation check-up is conducted in line with manufacturers manual. 2.4 Faults in farm equipment are identified and reported in line withfarm procedures 2.5 Farm equipment isused according to its function. 2.6 Safety proceduresare followed. 	2.1 Types and operations of farm equipment 2.2 Standards operating procedures of farm equipment 2.3 Instructional manual of equipment 2.4 Pre-operation check-up 2.5 Equipment Specification 2.6 Procedures in calibrating and use of equipment 2.7 Equipment faults identification and reporting 2.8 Operation of equipment 2.9 Codes and	2.1 Identifying appropriate farm equipment for the work 2.2 Reading instructional manual 2.3 Conducting pre- operation check-up 2.4 Identifying faults/defects offarm equipment 2.5 Reporting on defective farm equipment 2.6 Operating farm equipment 2.7 Following safety procedures

			_
		Regulations on	
		environmental	
		protection	
		2.10 Safety and	
		keeping of	
		equipment	
		everyafter	
		use	
		2.11 Safety	
		measures	
3. Perform	3.1 Tools and equipment is	3.1 Cleaning	3.1 Cleaning tools
		_	_
preventive	cleaned immediately	procedures of	and equipment
maintenance	after use in line with	tools and	3.2 Performing
	farm procedures.	equipment	routinely
	3.2 Routine check-upand	3.2 Maintenance	check-up of
	maintenanceare	procedures of	tools and
	performed.	farm equipment	equipment
	3.3 Tools and equipment is	3.3 Storage of tools	3.3 Maintaining
	stored in designated	and equipment	farm
	areas inline with farm	3.4 Designated	equipment
	procedures.	storage areas	3.4 Storing tools
	_		and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	May include: 1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	May include: 2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools
3. Pre-operation check-up	May include: 3.1 Tires 3.2 Brake fluid 3.3 Fuel 3.4 Water 3.5 Oil 3.6 Lubricants 3.7 Battery

Assessment requires evidence that the candidate:
1.1 Correctly identified appropriate farm tools and equipment
1.2 Operated farm equipment according to manual
specification
1.3 Performed preventive maintenance
The following resources should be provided:
2.1 Service/operational manual of farm tools and equipment
2.2 Tools and equipment
2.3 Farm implements
Competency in this unit may be assessed through:
3.1 Direct observation
3.2 Practical demonstration
3.3 Third Party Report
4.1 Competency may be assessed individually in the actual
workplace or simulation environment in TESDA accredited
institutions.

UNIT OF COMPETENCY : PERFORM ESTIMATION AND BASIC CALCULATION

UNIT CODE : AGR321203

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes

required to perform basic workplace calculations.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform estimation	 1.1 Job requirements are identified from written or oral communications. 1.2 Quantities of materials and resources requiredto complete a worktask are estimated. 1.3 The time needed to complete a work activity is estimated. 1.4 Accurate estimate for work completionare made. 1.5 Estimate of materials and resources are reported to appropriate person. 	1.1 Job requirements/ labor needs 1.2 Calculation of quantities of materials and resources required 1.3 Calculation of time for job completion 1.4 Preparation of estimate report 1.5 Basic mathematical operations 1.6 Percentage and ratios 1.7 Unit Conversion	1.1 Identifying job requirements/ labor 1.2 Estimating quantities of materials and resources required 1.3 Estimating time for job completion 1.4 Performing basic calculation 1.5 Compute percentage 1.6 Convert English to metric systems of measurement 1.7 Preparing estimate report
2. Perform basic workplace calculation	 2.1 System and units of measurement to be followed are ascertained. 2.2 Calculation needed to complete work tasks are performed using the four basic mathematical operation. 2.3 Calculate whole fraction, percentage and mixed when are used to complete the instructions. 2.4 Number computed is checked following work requirements 	2.1 Four basic mathematical operation 2.2 System and units of measurement 2.3 Fraction, percentage and ratio 2.4 Material take-off 2.5 Materials costing	2.1 Compute bill of materials 2.2 Compute project cost

RANGE OF VARIABLES

VARIABLE	RANGE
1. System of measurement	Includes: 1.1 English 1.2 Metric
2. Units of measurement	Includes: 2.1 Area 2.2 Volume 2.3 Weight 2.4 Length
Four basic mathematical operation	Includes: 3.1 Addition 3.2 Subtraction 3.3 Multiplication 3.4 Division

Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Performed estimation 1.2 Performed basic workplace calculation 1.3 Applied corrective measures as maybe necessary
2. Resource Implications	The following resources should be provided: 2.1 Relevant tools and equipment for basic calculation 2.2 Recommended data
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Practical demonstration 3.2 Written examination
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accreditedinstitutions.

CORE COMPETENCIES

UNIT OF COMPETENCY : PERFORM LAND PREPARATION

UNIT CODE : AB-AFF0860020611301

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes

required to perform land preparation. This competency includes perform pre tillage operations, conduct tillage

operations, and perform post tillage operations.

ELEMENTS	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre tillage operations	 1.1 Tools, materials and equipment are made ready for land preparation. 1.2 Land clearing activities are conducted according to topography, and area. 1.3 Safety procedures is followed according to OSHS. 1.4 Machinery services are sourced out following work requirement. 1.5 Dikes are constructed according to industry practice. 	SCIENCE 1.1 Different topography 1.2 Climatic condition TECHNOLOGY 1.3 Land clearing activities 1.3.1 Importance of land cleaning in tikog production 1.4 Tools, materials, and equipment required in land preparations 1.5 Procedures in preparation of tools, material and equipment 1.6 Use PPE 1.7 Different machinery services for land preparations ENVIRONMENT AND OTHER RELATED LAWS 1.8 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof	 1.1 Preparing tools, materials and equipment 1.2 Clearing the area. 1.3 Constructing dikes 1.4 Practicing OSHS 1.5 Sourcing machinery services 1.6 Wearing PPE

2. Conduct tillage operations	 2.1 <i>Tillage operation</i> is carried according to standard tillage practices. 2.2 Tillage operation is <i>monitored</i> based on established industry procedures. 2.3 Safety measures are practiced according to OSH standards. 	SCIENCE 2.1 Characteristics of a well-prepared wetland and dryland fields TECHNOLOGY 2.2 Tillage operation and practices 2.3 Monitoring tillage operation ENVIRONMENT AND OTHER RELATED LAWS 2.4 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 2.4.1 Safety procedures for	2.1 Performing tillage operation 2.2 Monitoring tillage operation 2.3 Practicing safety measures
3. Perform post tillage operations	3.1 Damaged dikes are repaired following recognized rice agricultural system. 3.2 Transaction with the machinery service provider is completed with reference to work contract. 3.3 Record keeping is done following workplace procedures. 3.4 Work area is cleaned following good housekeeping practices. 3.5 Wastes are disposed following waste management.	Iand preparation TECHNOLOGY 3.1 Activities in repairing dikes 3.2 Proper wastes disposal 3.3 Procedures in closing transaction with machinery services provider ENVIRONMENT AND OTHER RELATED LAWS 3.4 Awareness on RA 9003 Solid Waste Management Act COMMUNICATION 3.6 Simple recordkeeping	3.1 Repairing damaged dikes 3.2 Completing the transaction with machinery provider with reference to work contract 3.3 Housekeeping skills 3.4 Applying waste management 3.5 Performing record keeping

	VARIABLE	RANGE
1.	Tools	Tools may include: 1.1. Bolo 1.2. Shovel
2.	Materials	Materials may include: 2.1 Fuel 2.2 Engine oil 2.3 Sharpening stone
	Equipment	Equipment may include: 3.1 Grass cutter 3.2 Knapsack sprayer 3.3 PPE 3.3.1 Field boots 3.3.2 Gloves 3.3.3 Eye googles 3.3.4 Hat 3.4 Hand tractor with plows, harrows and leveler
4.	Land clearing activities	Land clearing activities may include: 4.1 For irrigated 4.1.1 Cleaning of dikes and leaves 4.1.2 Cleaning of irrigation and drainage canals 4.2 For rainfed 4.2.1 Cleaning of tikog field
5.	Topography	Topography may include: 5.1 Flat 5.2 Sloping 5.3 Mountainous 5.4 Plateau
6.	Constructing dikes	Constructing dikes may include: 6.1 Installing screen mesh to water inlets and outlets 6.2 Elevating water dikes.
7.	Repairing damaged dikes	Repairing damage dikes may include: 7.1 Sealing and patching rat burrows, cracks, damaged dikes 7.2 Reinforcing dikes 7.3 Using bamboo poles 7.4 Elevating dikes
8.	Tillage Operation	Tilling operation includes: 8.1 Wet tillage practices 8.2 Dry land tillage practices 8.3 Wet and dry tillage practices
9.	Monitoring of tillage operation	Monitoring of tillage operation includes: 9.1 Field condition 9.2 Water level 9.3 Unplowed soil 9.4 Decomposed Rice stubbles and weeds

EVIDENCE GUIDE	
1. Critical Aspect of Competency	Assessment requires evidence that the candidate: 1.1 Performed pre- tillage operations. 1.1.1 Prepared tools, materials and equipment 1.1.2 Conducted land clearing activities 1.1.3 Constructed dikes 1.2 Conducted tillage operation 1.2.1 Carried-out tillage operation 1.2.2 Monitored tillage operation 1.2.3 Practiced safety measures 1.3 Performed post- tillage operation. 1.3.1 Repaired damaged dikes 1.3.2 Performed record keeping 1.3.3 Cleaned work area 1.3.4 Disposed wastes
2. Resource Implications	The following resources should be provided: 2.1 Farm site/ simulate workshop. 2.2 Tools, materials, farm implements and equipment for land preparation activities. 2.3 PPE
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration 3.2 Oral questioning 3.3 Written test
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting.

UNIT OF COMPETENCY : PLANT TIKOG

UNIT CODE : AB-AFF0860020611302

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes

required to plant tikog. This competency includes source out tikog clumps, plant tikog stalks and

maintenance of tikog stalks.

ELEMENTS	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Prepare tikog stalks	1.1 Clumps are collected from natural source according to industry practice. 1.2 Tikog stalks are trimmed according to industry practice. 1.3 Tikog stalks are packaged with rice sacks based on industry practice. 1.4 Tikog stalks are transported to site following industry practices.	SCIENCE 1.1 Identification of clumps 1.2 Selection of tikog stalks TECHNOLOGY 1.3 Proper handling and transporting of clumps MATHEMATICS 1.4 Measurement	1.1 Collecting clumps 1.2 Trimming of tikog stalks 1.3 Packaging of tikog stalks 1.4 Transporting tikog stalks
2. Plant tikog stalks	 2.1 Tools and materials are prepared based on work requirements. 2.2 Checking of field is performed following industry practice. 2.3 Tikog stalks are planted according to industry practice. 2.4 PPEs are worn according to OSHS standards. 	TECHNOLOGY 2.1 Preparation of tools and materials 2.2 Ways of checking the field ENVIRONMENT AND OTHER RELATED LAWS 2.3 Use of Personal Protective Equipment (PPE) 2.4 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof	2.1 Preparing tools and materials 2.2 Performing field check 2.3 Planting tikog stalks 2.4 Wearing PPE

		COMMUNICATION	
<u> </u>	0.47.11	2.5 Documentation	0.45
3. Perform	3.1 Tall grass	TECHNOLOGY	3.1 Removing
maintenance	surrounding the	3.1 Corrective	tall grass
activities	dikes are removed	measures	3.2 Performing
	following industry		corrective
	practice.		measures
	3.2 Corrective	ENVIRONMENT AND	3.3 Recordkeeping
	<i>measures</i> are	OTHER RELATED	
	done based on the	LAWS	
	result of	3.2 Awareness on RA	
	inspection.	11058 - An Act	
	3.3 Recordkeeping is	Strengthening	
	performed	Compliance with	
	following industry	Occupational	
	practice.	Safety and Health	
	processor.	Standards and	
		Providing	
		Penalties for	
		Violations Thereof	
		COMMUNICATION	
		3.3 Recordkeeping	

VARIABLE	RANGE
1. Tools and materials	Tools and materials may include:
	1.1 Tools:
	Shovel
	Bolo
	Knife
	1.2 Materials:
	Sacks
	Seedlings
2. Checking of Field	Checking of Field may include:
	2.1 Field levelling
	2.2 Excess water for drainage
	2.3 Presence of pests
3. Personal Protective	PPEs may include:
Equipment (PPE)	3.1 Long sleeves
	3.2 Wide Brine hat
	3.3 Rain boots
	3.4 Cover all
4.Corrective measures	Corrective measures may include but not limited to:
	4.1 Soil sampling methods
	4.2 Assess plant health
	4.3 Cover crops

EVIDENCE GUIDE	
1. Critical aspects of	Assessment requires evidence that the candidate:
Competency	1.1 Prepared Tikog Stalks
	1.1.1 Collected clumps
	1.1.2 Performed measurement
	1.1.3 Trimmed tikog stalks
	1.1.4 Planted tikog stalks
	1.1.5 Transported tikog stalks
	1.2 Planted Tikog Stalks
	1.2.1 Prepared tools and materials
	1.2.2 Checked the field
	1.3 Maintained Tikog Stalks
	1.3.1 Performed corrective measures as maybe
	necessary
	1.3.2 Performed recordkeeping
	1.3.3 Practiced OSHS
2. Resource Implications	The following resources should be provided:
	2.1 Farm site/simulated workplace
	2.2 Tools, materials and equipment for crop establishment
	operations
	2.3 PPE
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Demonstration
	3.2 Oral questioning
	3.3 Written test
4. Context for Assessment	4.1 Competency may be assessed in actual workplace or
	at the designated TESDA Accredited Assessment
	Center in a simulated workplace setting.

UNIT OF COMPETENCY CONDUCT HARVEST AND POST HARVEST

UNIT CODE AB-AFF0860020611303

This unit covers the knowledge, skills, and attitudes **UNIT DESCRIPTOR** required to conduct harvest and post-harvest. This

competency includes prepare for tikog harvest, perform

		•	
tikog harvest a	and perform	post-harvest	operations.

ELEMENTS	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare for tikog harvest	 1.1 Tools and materials are prepared based on industry practice. 1.2 Dikes are cleaned based on industry practice 1.3 Cropping calendar are checked based on industry practice. 1.4 Tikog stalks are checked based on cropping calendar. 1.5 Safety practices are applied based on OSHS. 	TECHNOLOGY 1.1 Tools and materials 1.2 Cropping calendar ENVIRONMENT AND OTHER RELATED LAWS 1.3 Awareness on RA 6969 Toxic Substances and Hazardous and Nuclear Wastes	 1.1 Preparing of materials 1.2 Cleaning of dikes 1.3 Checking of cropping calendar 1.4 Checking of tikog stalks
2. Perform Tikog harvest	2.1 Matured tikog stalks are harvested based on industry practice. 2.2 Good quality of matured tikog stalks are selected based on industry practice. 2.3 Harvested tikog stalks are bundled based on industry practice. 2.4 PPE is worn according to OSHS.	SCIENCE 2.1 Identify the maturity of tikog stalks ready for harvest TECHNOLOGY 2.2 Harvesting methods: 2.2.1 Manual 2.2.2 Pulling practice and techniques 2.3 Cropping calendar ENVIRONMENT AND OTHER RELATED LAWS 2.4 Awareness of RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof	2.1 Harvesting of matured tikog stalks 2.2 Selecting good quality matured tikog stalks 2.3 Harvesting tikog stalks 2.4 Wearing PPEs

3. Perform	3.1 Bundled tikog stalks are	TECHNOLOGY	3.1 Performing
post-	hauled following industry	3.1 Handling and	post-harvest
harvest	practice.	packaging of	operations
operations	3.2 Bundle of stalks are	stalks	such as
	stored following	3.2 Proper storing	handling/
	recommended	and stacking of	hauling.
	practices.	stalks	3.2 Packaging,
	3.3 Moisture content is	COMMUNICATION	sorting and
	monitored based on	3.3 Effective	stacking of
	industry practice.	Communication &	stalks
	3.4 Safety practices are	Coordination	3.3 Storing
	applied based on OSHS.	ENVIRONMENT AND	bundle of
	3.5 Recordkeeping is	OTHER RELATED	stalks
	performed following	LAWS	3.4 Monitoring
	industry practice.	3.4 Awareness on RA	moisture
		6969 Toxic	content
		Substances and	3.5 Communicati
		Hazardous and	on skills
		Nuclear Wastes	3.6 Disposing
			wastes

VARIABLE	RANGE
1. Tools and Materials	Tools and materials may include:
	1.1 Tools
	Scissors
	Knife
	1.2 Materials
	Straw
	Sack
2. Good quality of matured tikog	Good quality of matured tikog stalks may include:
stalks	2.1 Light brown-colored crown
	2.2 Crown is attached to the stalks
	2.3 Green stalks
4 PPEs	PPEs may include:
	3.1 Gloves
	3.2 Goggles
	3.3 Long sleeves
	3.4 Wide Brine hat
	3.3 Rain boots
	3.4 Pants
5 Recommended practices	Recommended practices may include:
	4.1 Using new sacks or cleaning used sacks by
	removing insect pests
	4.2 Separating old stocks from new ones to prevent
	infestation.

Assessment requires evidence that the candidate:
1.1 Prepared tikog harvest
1.1.1 Prepared tools and materials
1.1.2 Cleaned dikes
1.1.3 Checked cropping calendar
1.1.4 Checked tikog stalks
1.2 Performed tikog harvest
1.2.1 Harvested matured tikog stalks
1.2.2 Selected good quality of matured tikog stalks
1.2.3 Bundled tikog stalks
1.2.4 Worn PPEs
1.3 Performed post-harvest operation
1.3.1 Hauled bundled tikog stalks
<u> </u>
1.3.2 Stored bundled tikog stalks
1.3.3 Monitored moisture content
The following resources should be provided:
2.1 Farm site/simulated workplace
2.2 Storage facilities/simulated workplace
2.3 PPE
Competency in this unit may be assessed through:
3.1 Demonstration
3.2 Oral questioning
3.3 Written test
4.1 Competency may be assessed in actual workplace or
at the designated TESDA Accredited Assessment
Center in a simulated workplace setting.

UNIT OF COMPETENCY : CONDUCT TIKOG STALKS DRYING

UNIT CODE : AB-AFF0860020611304

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes

required to establish tikog stalks drying. This competency includes perform preparatory activities, dry tikog stalks and carry out post drying activities.

ELEMENTS	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Perform preparatory activities	 1.1 Sites are selected based on established criteria. 1.2 Materials are prepared based on established procedures. 1.3 Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS). 	TECHNOLOGY 1.1 Established criteria for site selection and preparation 1.2 Kinds, uses and preparation of materials in sun drying 1.3 Inspection and checking procedures ENVIRONMENT AND OTHER RELATED LAWS 1.4 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof	1.1 Selecting sites for drying 1.2 Preparing materials for sun drying 1.3 Applying safety measures 1.4 Using materials in the workplace
2. Dry tikog stalks	 2.1 <i>Dryers</i> are used following the operating procedures. 2.2 Tikog stalks are spread in dryer based on industry practice. 2.3 Tikog stalks are monitored based on industry practice. 2.4 PPEs are worn based on industry practice. 	SCIENCE 2.1 Types of dryer TECHNOLOGY 2.2 PPEs ENVIRONMENT AND OTHER RELATED LAWS 2.3 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof COMMUNICATION 2.4 Record keeping	2.1 Using dryers 2.2 Spreading tikog stalks 2.3 Identifying tikog stalks 2.4 Monitoring tikog stalks 2.5 Wearing PPEs 2.6 Recordkeeping
Carry out post drying activities	3.1 Tikog stalks are packed based on industry practice.	SCIENCE 3.1 Drying characteristics 3.2 Moisture content determination	3.1 Packing tikog stalks 3.2 Storing dried tikog stalks

- 3.2 Tikog stalks are stored based on industry practice.
- 3.3 Safety measures are observed according to OSHS.
- 3.4 **Housekeeping** is performed according to established procedures.
- 3.5 Record keeping is performed in line with enterprise procedures.

3.3 Characteristics of storage area

TECHNOLOGY

- 3.4 Handling of dried tikog stalks
- 3.5 Storing practices
- 3.6 Record keeping
- 3.7 Use of mechanical dryer

ENVIRONMENT AND OTHER RELATED LAWS

3.8 Awareness on RA 11058
- An Act Strengthening
Compliance with
Occupational Safety and
Health Standards and
Providing Penalties for
Violations Thereof

- 3.3 Determining drying characteristics
- 3.4 Determining moisture content
- 3.5 Operating mechanical dryer
- 3.6 Practicing safety measures
- 3.7 Performing housekeeping
- 3.8 Monitoring of record

VARIABLE	RANGE
1. Sites	Sites may include:
	1.1 Open area
	1.2 Free from stray animals
2. Established criteria	Established criteria may include:
	2.1 Location
	2.2 Accessibility
	2.3 Zoning regulation
3. Materials	Materials may include:
	3.1 Waterproof tarp
	3.2 Rope
	3.3 Sack
4. Dryers	Dryers may include:
	4.1 Sun Drying
	4.2 Mechanical Dryer
5. Housekeeping	Housekeeping may include:
	5.1 Keeping work area neat and orderly
	5.2 Removing waste materials
	5.3 Segregating waste materials

Critical Aspects of	Assessment requires evidence that the candidate:
Competency	1.1 Performed preparatory activities
Competency	1.1.1 Established criteria for site selection and
	preparation
	1.1.2 Prepared materials
	1.1.2 Prepared materials 1.1.3 Applied safety measures
	· · · · · · · · · · · · · · · · · · ·
	1.2 Dried tikog stalks
	1.2.1 Followed procedures manual for dryers
	1.2.2 Spread tikog stalks
	1.2.3 Monitored tikog stalks
	1.2.4 Worn PPEs
	1.3 Carried-out post drying activities.
	4.2.1 Packed tikog stalks
	4.2.2 Stored tikog stalks
	4.2.3 Observed safety measures
	4.2.4 Performed housekeeping
	4.2.5 Performed record keeping
2. Resource Implications	The following resources should be provided:
	2.1 Farm site/simulated workplace
	2.2 Supplies and materials contingent to machines
	2.3 Storage facilities/simulated workplace
	2.4 PPE
3. Method of Assessment	Competency in this unit may be assessed through:
	3.1 Direct observation and questioning
	3.2 Demonstration (simulated)
	3.3 Oral interview and written test
4. Context for Assessment	Competency may be assessed in actual workplace or in a
	simulated workplace setting.

GLOSSARY OF TERMS

GLOSSANT OF TENNIS	
1. BUNDLE	A collection of things or quantity of material tied or wrapped up together.
2. CLUMPS	A group of tikog stalks (lower portion-includes root systems) also known as "Saha" in local dialect.
3. CROP	A plant or animal product that can be grown and harvested extensively for profit or subsistence.
4. HARVEST	Is the operation of gathering the useful part or parts of the plant.
5. POST - HARVEST	Is the stage of crop production immediately following harvest including cooling, cleaning, sorting and packing.
6. STALKS	A thick or tall stem of a tikog plant
7. TIKOG	An aquatic plant, erect, stemless and usually perennial. The leaves are arrow-shaped, 10 to 35 centimeters long; the petioles are long, often long than the leaves, with 3 to 5 whorls of 3 to 5 flowers, each 1 to 2 centimeters in diameter; the lower whorls are female, and the upper, male, with longer pedicels.
8. TIKOG DRYING (Sun Drying)	Tikog stems are gathered and bleached under the sun for several days to dry out
9. TIKOG DRYING (Mechanical)	Tikog stems are gathered and bleached using mechanical dryer.
10. TILLAGE OPERATION	Tillage is the manipulation of the soil into a desired condition by mechanical means; tools are employed to achieve some desired effect (such as pulverization, cutting, or movement).

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