COMPETENCY STANDARDS

ABACA PRODUCTION
LEVEL II

AGRICULTURE, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
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ABACA PRODUCTION LEVEL II

COMPETENCY STANDARDS FOR
ABACA PRODUCTION LEVEL II

Section 1 ABACA PRODUCTION PQF LEVEL II

The **ABACA PRODUCTION PQF LEVEL II** Qualification consists of competencies that a person must achieve to produce abaca. The competencies included in this qualification are: prepare land, plant abaca and care and maintain abaca.

The units of competency comprising this qualification include the following:

Code	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 the workplace
400311218	Practice entrepreneurial skills in the workplace

Code	COMMON COMPETENCIES
AFF321201	Apply safety measures in farm operations
AFF321202	Use farm tools and equipment
AFF321203	Perform estimation and calculations
AFF321205	Process farm wastes
SOC 413206	Perform record keeping

Code	CORE COMPETENCIES
AB-AFF1030900611301	Prepare Land
AB-AFF1030900611302	Plant Abaca
AB-AFF1030900611303	Care and maintain Abaca

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

- **Abaca Grower**

SECTION 2 COMPETENCY STANDARDS

These guidelines are set to provide the Technical Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **ABACA 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 information in 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 information and ideas. 1.4 Appropriate non-verbal communication is used. 1.5 Appropriate lines of communication with supervisors and colleagues	1.1 Effective verbal and nonverbal 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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	are identified and followed. 1.6 Defined workplace procedures for the location and ***storage*** of information are used. 1.7 Personal interaction is carried out clearly and concisely.		in the workplace 1.7 Gathering and providing basic information in response to workplace requirements 1.8 Basic business writing skills 1.9 Interpersonal skills in the workplace 1.10 Active-listening skills
2. Perform duties following workplace instructions	2.1 Written notices and instructions are read and interpreted in accordance with organizational guidelines. 2.2 Routine written instruction are followed based on established procedures. 2.3 Feedback is given to workplace supervisor based instructions/ information received. 2.4 ***Workplace interactions*** are conducted in a courteous manner. 2.5 Where necessary, clarifications about routine workplace procedures and matters concerning	2.1 Effective verbal and non-verbal communication 2.2 Different modes of communication 2.3 Medium of communication in the workplace 2.4 Organizational/ Workplace policies 2.5 Communication procedures and systems 2.6 Lines of communication 2.7 Technology relevant to the enterprise and the individual's work responsibilities 2.8 Effective questioning techniques (clarifying and probing) 2.9 Workplace etiquette	2.1 Following simple spoken instructions 2.2 Performing routine workplace duties following simple written notices 2.3 Participating in workplace meetings and discussions 2.4 Completing work- related documents 2.5 Estimating, calculating and recording routine workplace measures 2.6 Relating/ Responding to people of various levels in the workplace 2.7 Gathering and providing

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	conditions of employment are sought and asked from ***appropriate sources***. 2.6 Meetings outcomes are interpreted and implemented.		information in response to workplace requirements 2.8 Basic questioning/querying 2.9 Skills in reading for information 2.10 Skills in locating
3. Complete relevant work-related documents	3.1 Range of ***forms*** relating to conditions of employment are completed accurately and legibly. 3.2 Workplace data is recorded on standard workplace forms and documents. 3.3 Errors in recording information on forms/ documents are identified and acted upon. 3.4 Reporting requirements to supervisor are completed according to organizational guidelines.	3.1 Effective verbal and non-verbal communication 3.2 Different modes of communication 3.3 Workplace forms and documents 3.4 Organizational/ Workplace policies 3.5 Communication procedures and systems 3.6 Technology relevant to the enterprise and the individual's work responsibilities	3.1 Completing work- related documents 3.2 Applying operations of addition, subtraction, division and multiplication 3.3 Gathering and providing information in response to workplace requirements 3.4 Effective record keeping skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	Appropriate sources may include: 1.1 Team members 1.2 Supervisor/Department Head 1.3 Suppliers 1.4 Trade personnel 1.5 Local government 1.6 Industry bodies
2. Medium	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	Storage may include: 3.1 Manual filing system 3.2 Computer-based filing system
4. Workplace interactions	Workplace interaction may include: 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	Forms may include: 5.1 HR/Personnel forms, telephone message forms, safety reports

EVIDENCE GUIDE

1. Critical aspects of Competency	**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
2. Resource Implications	**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
3. Methods of Assessment	**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. Context for Assessment	Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY : WORK IN A 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
1. Describe team role and scope	1.1 The ***role and objective of the team*** is identified from available ***sources of information***. 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.	1.1 Group structure 1.2 Group development 1.3 Sources of information	1.1 Communicating with others, appropriately consistent with the culture of the workplace 1.2 Developing ways in improving work structure and performing respective roles in the group or organization
2. Identify one's role and responsibility within a team	2.1 Individual roles and responsibilities within the team environment are identified. 2.2 Roles and objectives of the team is identified from available ***sources of information***. 2.3 Team parameters, reporting relationships and responsibilities are identified based on team discussions and appropriate external sources.	2.1 Team roles and objectives 2.2 Team structure and parameters 2.3 Team development 2.4 Sources of information	2.1 Communicating with others, 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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Work as a team member	3.1 Effective and appropriate forms of communications are used and interactions undertaken with team members based on company practices. 3.2 Effective and appropriate contributions made to complement team activities and objectives, based on ***workplace context***. 3.3 Protocols in reporting are observed based on standard company practices. 3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives.	3.1 Communication Process 3.2 Workplace communication protocol 3.3 Team planning and decision making 3.4 Team thinking 3.5 Team roles 3.6 Process of team development 3.7 Workplace context	3.1 Communicating appropriately, consistent with the culture of the workplace 3.2 Interacting effectively with others 3.3 Deciding as an individual and as a group using group think strategies and techniques 3.4 Contributing to Resolution of issues and concerns

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	Role and objective of team may include: 1.1 Work activities in a team environment with enterprise or 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	Sources of information may include: 2.1 Standard operating and/or other workplace procedures 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	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

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Worked in a team to complete workplace activity 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* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. 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.	1.1 Current industry hardware and software products and services 1.2 Industry 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 Recommendations about possible	2.1 Current industry hardware and software products and services 2.2 Industry service and helpdesk	2.1 Identifying current industry hardware and software products and services

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	solutions are developed, ***documented***, ranked and presented to ***appropriate person*** for decision.	practices, processes and procedures 2.3 Operating systems 2.4 Industry standard diagnostic tools 2.5 Malfunctions and resolutions. 2.6 Root cause analysis	2.2 Identifying services and helpdesk practices, processes and procedures. 2.3 Identifying operating system 2.4 Identifying current industry standard diagnostic tools 2.5 Describing common malfunctions and resolutions. 2.6 Determining the root cause of a routine malfunction
3. Recommend solutions to problems	3.1 Implementation of solutions are ***planned***. 3.2 Evaluation of implemented solutions are planned. 3.3 Recommended solutions are documented and submit to appropriate person for confirmation.	3.1 Standard procedures 3.2 Documentation produce	3.1 Producing documentation that recommends solutions to problems 3.2 Following established procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Problems/Procedural Problem	Problems/Procedural Problem may include: 1.1 Routine/non – routine processes and quality problems 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	Appropriate person may include: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	Document may include: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	Plan may include: 4.1 Priority requirements 4.2 Co-ordination and feedback requirements 4.3 Safety requirements 4.4 Risk assessment 4.5 Environmental requirements

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Determined the root cause of a routine problem. 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 Implications	2.1 Assessment will require access to a workplace over an extended period, or a suitable method of gathering evidence of operating ability over a range of situations.
3. Methods of Assessment	**Competency in this unit may be assessed through:** 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 and may 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 on the actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

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, to be 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 self-assessment strategies and	2.1 Basic SWOT analysis 2.2 Strategies to improve one's attitude in the workplace	2.1 Using the basic SWOT analysis as self-assessment strategy

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	teacher feedback are contemplated. 2.2 Progress when seeking and 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.	2.3 Gibbs' Reflective Cycle/Model (Description, Feelings, Evaluation, Analysis, Conclusion, and Action plan)	2.2 Developing reflective practice through 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-improvement 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-assessment for determining one's strengths

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
			and weaknesses

RANGE OF VARIABLES

VARIABLE	RANGE
1. Self-management strategies	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	Unpleasant situation may include: 2.1 Job burn-out 2.2 Drug dependence 2.3 Sulking

EVIDENCE GUIDE

1. 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 resource s 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	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 do things 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 impacts and the challenges of change and innovation 1.3 Identifying examples of the types of changes that are within and outside own scope of responsibility
2. Discuss and develop ideas with others	2.1 ***People who could provide input*** to ideas for improvements are identified. 2.2 Ways of approaching people to begin sharing ideas are selected. 2.3 Meeting is set with relevant people. 2.4 Ideas for follow up are review and selected based on feedback.	2.1 Roles of individuals in suggesting and making improvements 2.2 Positive impacts 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. Involvement 2.2 Identifying the positive impacts and the challenges of change and innovation 2.3 Providing examples of the types of changes that are within and

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.5 ***Critical inquiry method*** is used to discuss and develop ideas with others.		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 of key 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. Involvement 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

RANGE OF VARIABLES

VARIABLE	RANGE
1. Opportunities for improvement	Opportunities for improvement may include: 1.1 Systems 1.2 Processes 1.3 Procedures 1.4 Protocols 1.5 Codes 1.6 Practices
2. Information	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 provide input	People who could provide input may include: 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	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	Reporting skills may include: 5.1 Data management 5.2 Coding 5.3 Data analysis and interpretation

VARIABLE	RANGE
	5.4 Coherent writing 5.5 Speaking

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 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 workplace reports of on-the-job performance 3.5 Sensitivity analysis 3.6 Organizational analysis 3.7 Standardized assessment of character strengths and virtues applied
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace 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 to a 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 to a 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	2.1 Business mathematics and statistics	2.1 Computing business mathematics and statistics

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	applied to assess data/ information. 2.3 Trends and anomalies are identified. 2.4 ***Data analysis techniques*** and procedures are documented. 2.5 Recommendations are made on areas of possible improvement.	2.2 Data analysis techniques/ procedures 2.3 Reporting requirements to a range of audiences 2.4 Legislation, policy and procedures relating to the conduct of evaluations 2.5 Organisational values, ethics and codes of conduct	2.2 Describing data analysis techniques/ procedures 2.3 Reporting requirements to 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 terms of 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

RANGE OF VARIABLES

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

EVIDENCE GUIDE

1. 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 forming part 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 management role 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 and may 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 on the actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	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, perform tasks in accordance with relevant OSH policies and procedures.

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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	workplace policies and procedures. 2.3 Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards.	2.5 Different OSH control measures	identification skills
3. Perform tasks in accordance with relevant 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

RANGE OF VARIABLES

VARIABLE	RANGE
1. OSH Requirements, Regulations, Policies and Procedures	OSH Requirements, Regulations, Policies and Procedures may include: 1.1 Clean Air Act 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 and Health) 1.8 ECC regulations
2. Appropriate Personnel	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 Control Requirements	OSH preventive and control requirements may include: 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 Activities	Non OSH-Compliance work activities may include non-compliance or observance of the 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

EVIDENCE GUIDE

1. 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	Competency may be assessed in the workplace 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
1. 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 ineffectiveness of resource utilization	2.1 Potential causes of inefficiency and/or ineffectiveness are listed. 2.2 Causes of inefficiency and/or ineffectiveness are identified	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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	through deductive reasoning. 2.3 Identified causes of inefficiency and/or ineffectiveness are validated thru established environmental procedures.		
3. Convey inefficient and ineffective environmental practices	3.1 Efficiency and effectiveness of resource utilization are reported to ***appropriate personnel***. 3.2 Concerns related resource utilization are discussed with appropriate personnel. 3.3 Feedback on information/ concerns raised are clarified with appropriate personnel.	3.1 Appropriate Personnel to address the environmental hazards 3.2 Environmental corrective actions	3.1 Written and Oral Communication Skills 3.2 Critical thinking 3.3 Problem Solving 3.4 Observation Skills 3.5 Practice Environmental Awareness

RANGE OF VARIABLES

VARIABLE	RANGE
1. Environmental Work Procedures	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	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

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 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 is 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
1. 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 skills 1.2 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 2.3 Cost-conscious habits in resource	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: • Patience • Honesty • Quality-consciousness	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	utilization are communicated based on industry standards.	• Safety-consciousness • Resourcefulness	
3. Implement cost-effective operations	3.1 Preservation and optimization of workplace resources is implemented in accordance with enterprise policy 3.2 Judicious use of workplace tools, equipment and materials are observed according to manual and work requirements. 3.3 Constructive contributions to office operations are made according to enterprise requirements. 3.4 Ability to work within one's allotted time and finances is sustained.	3.1 Optimization of workplace resources 3.2 5S procedures and concepts 3.3 Criteria for cost-effectiveness 3.4 Workplace productivity 3.5 Impact of entrepreneurial mindset to workplace productivity 3.6 Ways in fostering entrepreneurial attitudes: • Quality-consciousness • Safety-consciousness	3.1 Implementing preservation and optimizing workplace resources 3.2 Observing judicious use of workplace tools, equipment and materials 3.3 Making constructive contributions to office operations 3.4 Sustaining ability to work within allotted time and finances

RANGE OF VARIABLES

VARIABLE	RANGE
1. Good practices	Good practices may include: 1.1 Economy in use of resources 1.2 Documentation of quality practices
2. Resources utilization	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

EVIDENCE GUIDE

1. 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 Implications	**The following resources should be provided:** 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 Assessment	**Competency in this unit should be assessed through:** 3.1 Interview 3.2 Third-party report
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated 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 : AFF321201

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
1. Determine areas of concern for safety measures	1.1 ***Work tasks*** are identified in line with farm operations 1.2 ***Place*** for safety measures are determined in line with farm operations 1.3 ***Time*** for safety measures are determined in line with 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 of safety 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	2.1 Uses and functions of tools 2.2 Outfits and how to wear it. 2.3 Expiration/shelf life of materials	2.1 Using tools and materials in the workplace 2.2 Wearing of outfits

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.2 Outfits are worn according to farm requirements 2.3 Effectivity/shelf life/expiration of materials are strictly observed 2.4 ***Emergency procedures*** are known and followed to ensure a safe work requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines	2.4 Proper disposal of expired materials 2.5 Environmental rules and regulations 2.6 Emergency procedures 2.7 Hazards identification and reporting 2.8 Communication skills 2.9 OSHS	2.3 Observing expiration/ shelf life of materials 2.4 Disposing of expired materials 2.5 Following emergency procedures 2.6 Identifying and reporting of hazards in workplace area.
3. Safe keep /dispose tools, materials and outfit	3.1 Used tools and outfit are cleaned after use and stored in designated areas 3.2 Unused materials are properly labeled and stored according to manufacturers recommendation and farm requirements 3.3 Waste materials are disposed according to manufacturers, government and farm requirements	3.1 Procedures of cleaning used tools and outfits 3.2 Label and storage unused materials 3.3 Disposal of wastes materials 3.4 Manufacturers recommendation on keeping materials 3.5 Environmental rules and regulations	3.1 Cleaning used tools and outfit 3.2 Labelling 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	Place may include: 2.1 Stock room/storage areas/warehouse 2.2 Field/farm/orchard
3. Time	Time may include: 3.1 Fertilizer and pesticides application 3.2 Feed mixing and feeding 3.3 Harvesting and hauling
4. Tools, materials and outfits	Tools, materials and outfits may include: 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	Emergency procedures may include: 5.1 Location of first aid kit 5.2 Evacuation 5.3 Agencies contract 5.4 Farm emergency procedures
6. Hazards	Hazards may include: 6.1 Chemical 6.2 Electrical 6.3 Falls

EVIDENCE GUIDE

1. 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. Method of Assessment	Competency in this unit must be assessed through: 3.1 Practical demonstration 3.2 Third Party Report
4. Context of Assessment	Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : USE FARM TOOLS AND EQUIPMENT

UNIT CODE : AFF321202

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
1. 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 tools reported 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 and equipment	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 manual of 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	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	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 of farm equipment 2.5 Reporting on defective farm equipment 2.6 Operating farm equipment

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	with farm procedures 2.5 Farm equipment used according to its function 2.6 Safety procedures are followed.	identification and reporting 2.8 Operation of equipment 2.9 Codes and Regulations on environmental protection 2.10 Safety and keeping of equipment every after use 2.11 Safety measures	2.7 Following safety procedures.
3. Perform preventive maintenance	3.1 Tools and equipment are cleaned immediately after use in line with farm procedures 3.2 Routine check-up and maintenance are performed 3.3 Tools and equipment are stored in designated areas in line with farm procedures	3.1 Cleaning procedures of tools and equipment 3.2 Maintenance procedures of farm equipment 3.3 Storage of tools and equipment 3.4 Designated storage areas	3.1 Cleaning tools and equipment 3.2 Performing routinary check-up of tools and equipment 3.3 Maintaining farm equipment 3.4 Storing tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	Farm equipment may include: 1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	Farm tools may include: 2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.5.1 Garden tools
3. Pre-operation check-up	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

EVIDENCE GUIDE

1. Critical Aspects of Competency	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
2. Resource Implications	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
3. Method of Assessment	Competency in this unit must be assessed through: 3.1 Direct observation 3.2 Practical demonstration 3.3 Third Party Report
4. Context of Assessment	Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : PERFORM ESTIMATION AND BASIC CALCULATION

UNIT CODE : AFF321203

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 required to complete a work task are estimated. 1.3 The time needed to complete a work activity is estimated. 1.4 Accurate estimate for work completion are 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***	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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Four basic mathematical operation	Four basic mathematical operation may include: 1.1 Addition 1.2 Subtraction 1.3 Multiplication 1.4 Division
2. System of measurement	System of measurement may include: 2.1 English 2.2 Metric
3. Units of measurement	Units of measurement may include: 3.1 Area 3.2 Volume 3.3 Weight 3.4 Length

EVIDENCE GUIDE

1. 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. Method of Assessment	Competency in this unit must be assessed through: 3.1 Practical demonstration 3.2 Written examination
4. Context of Assessment	Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : PROCESS FARM WASTES

UNIT CODE : AFF321205

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to process farm wastes. It comprises functions such as collecting farm wastes, conducting waste identification and segregation, treating and processing farm wastes and performing housekeeping duties.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Collect farm wastes	1.1 ***Tools and materials*** are prepared for collection of farm wastes. 1.2. Wastes are collected following OSHS and waste collection requirements and plan. 1.3. Dangerous and hazardous wastes are collected following the HAZMAT(hazardous material) protocol. 1.4. Appropriate personal protective equipment (PPE) are worn as prescribed by Occupational Safety and Health Standards (OSHS)..	1.1 Tools and materials use in wastes management 1.2 Categories of farm wastes 1.3 Waste collection and segregation procedures 1.4 Farm-waste handling, storage and disposal procedures 1.5 Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 1.6 Personal Protective Equipment (PPE)	1.1 Occupational health and safety 1.2 Skills is using tools and equipment 1.3 Calculations 1.4 Communicate effectively
2. Identify and segregate wastes	2.1 Wastes are identified by categories according to industry standards and	2.1 Tools and materials use in wastes management 2.2 Categories of farm wastes	1.1 Occupational health and safety 1.2 Skills is using tools and equipment

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	environmental legislation. 2.2. Wastes are segregated according to organizational requirements and relevant legislation. 2.3. Sorted waste is placed into labelled container to avoid littering and prevent cross-contamination. 2.4. Information on waste is obtained by asking authority to ensure correct identification.	2.3 Waste collection and segregation procedures 2.4 Farm-waste handling, storage and disposal procedures 2.5 Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 2.6 Personal Protective Equipment (PPE)	1.3 Calculations Communicate effectively
3. Treat and process farm wastes	3.1 ***Dangerous and hazardous wastes*** are handled according to organizational requirements and relevant legislation following OSHS procedures. 3.2. Processing of farm wastes is done following environmental legislation and codes. 3.3. Principles of 3Rs (reduce, reuse and recycle) are applied accordingly.	3.1 Tools and materials use in wastes management 3.2 Categories of farm wastes 3.3 Waste collection and segregation procedures 3.4 Farm-waste handling, storage and disposal procedures 3.5 Dangerous and hazardous wastes, hazardous materials (hazmat) protocols	3.1 Occupational health and safety 3.2 Skills is using tools and equipment 3.3 Calculations Communicate effectively

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.4. Farm wastes are disposed of according to environmental legislation and codes.	3.6 Personal Protective Equipment (PPE)	
4. Perform housekeeping	4.1 Appropriate warning signs and labels are displayed in conspicuous places around the workplace. 4.2. Work area is cleaned according to 5S principles. 4.3. Tools are checked, cleaned and stowed according to established industry procedures and following user's manual. 4.4. Materials are stored following industry standard procedures and manufacturer's specifications. 4.5. PPE is checked for damage prior to ensuring that clean and undamaged equipment is stored. 4.6. Storage facility is checked to ensure no contamination in the area according to organizational	4.1 Tools and materials use in wastes management 4.2 Categories of farm wastes 4.3 Waste collection and segregation procedures 4.4 Farm-waste handling, storage and disposal procedures 4.5 Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 4.6 Personal Protective Equipment (PPE)	4.1 Occupational health and safety 4.2 Skills is using tools and equipment 4.3 Calculations Communicate effectively

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	requirements and legislation and codes. 4.7. Record keeping is done according to industry requirements.		

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Tools and materials	Tools and materials may include: 1.1. Tools 1.1.1 Spade 1.1.2 Wheel borrow 1.1.3 Broomstick 1.1.4 Sprayer or pressurized pump 1.2. Materials 1.2.1 Sacks 1.2.2 Containers 1.2.3 Disinfectants 1.2.4 Detergents 1.2.5 First-aid kit 1.2.6 Chemical spill kit 1.2.7 Personal Protective Equipment 1.2.7.1 Goggles 1.2.7.2 Disposal gloves 1.2.7.3 Face mask 1.2.7.4 Rubber boots 1.2.7.5 Overall
2. Agricultural wastes	Agricultural wastes may include: 2.1. Plant materials 2.2. Hay 2.3. Weeds 2.4. Twigs 2.5. Twines 2.6. Empty wooden crates 2.7. Animal manure 2.8. Feed refuse 2.9. Spoiled feeds (Forage and feed supplements) 2.10. Spent bedding materials 2.11. Empty sacks 2.12. Trash fish 2.13. Fish meal 2.14. Effluent
3. Dangerous and hazardous wastes	Dangerous and hazardous wastes may include: 3.1 Pesticides 3.2 Syringes 3.3 Expired biologics 3.4 Expired veterinary drugs 3.5 Spoiled milk 3.6 Diseased plant and plant parts 3.7 Empty veterinary bottles/syringes
4. Categories	Categories may include: 4.1 Re-usable 4.2 Recyclable 4.3 Solid 4.4 Liquid

VARIABLE	SCOPE
5. Processing of wastes	Processing of wastes may include: 5.1 Composting 5.2 Compacting 5.3 Liquefying 5.4 Shredding 5.5 Carbonizing 5.6 Charcoaling
6. Record	Record may include: 6.1 Record of farm wastes generated and disposed 6.2 Record of incidence of infection and accidents 6.3 Record of chemical spillage 6.4 Record of destroyed carcasses 6.5 Inventory of tools, materials and equipment

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Collected farm waste 1.2 Identified and segregated farm waste 1.3 Processed farm waste 1.4 Performed housekeeping
2. Resource Implications	The following resources should be provided: 2.1 Farm area 2.2 Different farm wastes 2.3 Farm-waste processing area 2.4 Tools, supplies and materials use in farm wastes collection, segregation, and processing 2.5 Housekeeping tools and supplies 2.6 Personal Protective Equipment
3. Method of Assessment	Competency in this unit may be assessed through: 3.1 Observation and questioning 3.2 Third-Party Report 3.3 Demonstration and oral questioning
4. Context of Assessment	Competency maybe assessed individually in the actual workplace or in accredited farms or institution.

UNIT OF COMPETENCY : PERFORM RECORD KEEPING

UNIT CODE : **SOC 413206**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to carry-out inventory activities, maintain production record and prepare financial records.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Carry out inventory activities	1.1 ***Inventory inputs*** are determined according to enterprise requirements. 1.2 Defective tools and equipment are determined according to operation manuals 1.3 Facilities are inspected according to according to standard codes and laws.	1.1 Kinds of tools and equipment 1.2 Defects of tools and equipment 1.3 Monitoring method 1.4 Farm planning and budgeting 1.5 Methods and process of production 1.6 Quality control 1.7 Basic bookkeeping 1.8 Practice 3Rs and 5S 1.9 Program of work activities are implemented as scheduled	1.1 Work safety 1.2 Skills in determining defective tools and equipment 1.3 Measuring and calculations 1.4 Estimation 1.5 Basic mathematical skills 1.6 Skills in preparation of reports 1.7 Bookkeeping 1.8 Oral and written communication
2. Maintain production record	2.1 Production plan are prepared according to enterprise requirements. 2.2 Schedule for ***production activities*** are prepared based from enterprise requirements and plan. 2.3 ***Production report*** are prepared in accordance with enterprise reporting procedures	2.1 Kinds of tools and equipment 2.2 Defects of tools and equipment 2.3 Monitoring method 2.4 Farm planning and budgeting 2.5 Methods and process of production 2.6 Quality control 2.7 Basic bookkeeping 2.8 Practice 3Rs and 5S 2.9 Program of work activities are	2.1 Work safety 2.2 Skills in determining defective tools and equipment 2.3 Measuring and calculations 2.4 Estimation 2.5 Basic mathematical skills 2.6 Skills in preparation of reports 2.7 Bookkeeping 2.8 Oral and written communication

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.4 ***Input*** and ***production*** are monitored using monitoring chart.	implemented as scheduled	
3. Prepare financial records	3.1. ***Production cost*** are computed using established computation procedures. 3.2. Revenue is computed using established computation procedures.	3.1 Kinds of tools and equipment 3.2 Defects of tools and equipment 3.3 Monitoring method 3.4 Farm planning and budgeting 3.5 Methods and process of production 3.6 Quality control 3.7 Basic bookkeeping 3.8 Practice 3Rs and 5S 3.9 Program of work activities are implemented as scheduled	3.1 Work safety 3.2 Skills in determining defective tools and equipment 3.3 Measuring and calculations 3.4 Estimation 3.5 Basic mathematical skills 3.6 Skills in preparation of reports 3.7 Bookkeeping 3.8 Oral and written communication

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Inventory inputs	Inventory inputs may include: 1.1 Plant 1.1.1. Planting materials 1.1.2. Fertilizer 1.1.3. Concoctions (Pesticides and insecticides) 1.1.4. Beneficial microorganisms 1.2 Animals 1.2.1. Stocks 1.2.2. Feeds 1.2.3. Concoctions 1.2.4. Medications 1.2.5. Beneficial microorganisms 1.3 Miscellaneous materials
2. Production activities	Production activities may include: 2.1 Plant 2.1.1 Planting 2.1.2 Fertilizer application 2.1.3 Pesticides application 2.1.4 Implementation of bio-security measures 2.1.5 Irrigation/watering 2.1.6 Weeding 2.1.7 Harvesting 2.1.8 Post-harvesting 2.2 Animal 2.2.1 Feeding 2.2.2 Cleaning and Sanitation 2.2.3 Implementation of bio-security measures 2.2.4 Growth and health condition 2.2.5 Harvesting 2.2.6 Post harvesting 2.3 Miscellaneous activities
3. Production report	Production report may include: 3.1. Categorize and record quality of harvest 3.2. Volume /quantity of products harvested
4. Input	Input may include: 4.1 Input(plant) 4.1.1 Fertilizer 4.1.2 Concoctions (Pesticides and insecticides) 4.1.3 Beneficial microorganisms 4.2 Input(animal) 4.2.1 Feeds 4.2.2 Concoctions 4.2.3 Medication 4.2.4 Beneficial microorganisms 4.3 Miscellaneous inputs
5. Production	Production may include: 5.1 Growth rate

	5.2 Survival rate
6. Production cost	Production cost may include: 6.1.Labor 6.2.Inputs 6.3.Tools, equipment and facility depreciation cost 6.4.Administrative cost 6.5.Miscellaneous

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Determined inventory inputs according enterprise requirements 1.2. Determined defective tools and equipment's according to operation manuals. 1.3. Inspected facilities according to standard codes and laws. 1.4. Prepared production plan and report according to enterprise requirements and reporting procedures.
2. Resource Implications	The following resources should be provided: 2.1 All supplies, materials and farm implements needed during farm operations should be readily available at the farm site: 2.1.1 Farm site 2.1.2 Office supplies, materials, tools and farm equipment 2.2 Protective clothing equipment and materials. All workers involved in different activities must be fully oriented and cautioned on the different specific work activities of the farm. 2.3 Technical supervisors should have skills and ability in the successful implementation of work program activities.
3. Method of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration with questioning 3.2 Written examination
4. Context of Assessment	Assessment may occur in an appropriately simulated environment through TESDA accredited assessment centers.

CORE COMPETENCIES

UNIT OF COMPETENCY : PREPARE LAND

UNIT CODE : AB-AFF1030900611301

UNIT DESCRIPTOR : This unit of competency comprises the knowledge, skills, and attitude in preparing land for abaca production. This includes conduct site selection activity, perform land preparation and complete activities.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct site selection activity	1.1 ***Climatic pattern*** is determined according to abaca crop requirements. 1.2 ***Soil type*** is identified according to abaca crop requirements. 1.3 ***Area topography*** is identified according to crop requirements. 1.4 ***Farm shading assessment*** is conducted based on abaca crop requirement. 1.5 Accessibility of farm to market road is identified based on easement right of way. 1.6 ***Soil testing*** is conducted based on Bureau of Soils and Water Management guidelines. 1.7 ***Personal Protective Equipment*** is used based on industry standard. 1.8 Safety procedure in conducting site selection is followed according to OSHS.	**Science** 1.1 Climatic pattern 1.2 Soil Type 1.3 Personal Protective Equipment **Technology** 1.4 Weather monitoring for precision agriculture 1.5 Jar test and soil triangle 1.6 Soil feel test **Mathematics** 1.7 Calculation of precipitation 1.8 Calculation of slope and area elevation 1.9 Plant population density of existing vegetation 1.10 Estimation of rainfall 1.11 Estimation of farm shade 1.12 Simple calculation of nitrogen, phosphorus, potassium (NPK) **Communication**	1.1 Determining climatic pattern 1.2 Identifying soil type 1.3 Identifying area topography 1.4 Conducting farm shading assessment 1.5 Identifying accessibility of farm to market road 1.6 Conducting soil testing 1.7 Using PPEs 1.8 Following safety procedures

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		1.13 Data sharing in identifying climatic pattern **Environment related laws and ordinances** 1.14 Awareness on PNS/BAFS 266:2019 Abaca code of GAP 1.15 Easement of right of way under property law 1.16 Awareness on Bureau of Soil and water management guidelines in soil testing 1.17 Awareness on RA 11058 (OSHS Law)	
2. Perform land preparation	2.1 ***Tools and materials*** are prepared for land clearing based industry standard. 2.2 ***General clearing*** is conducted based on Philippine National Standard/Bureau of Agriculture and Fisheries Standards. 2.3 ***Tillage operation*** is conducted according to abaca plant requirement. 2.4 Safety procedure in land preparation is followed according to OSHS. 2.5 ***Personal Protective Equipment*** is used based on industry standard.	**Science** 2.1 Types of vegetation 2.2 Personal Protective Equipment **Technology** 2.3 Cultivation techniques 2.4 Area determination using smart phone apps 2.5 Contouring techniques using A-frame **Mathematics** 2.6 Computation of man-days 2.7 Computation of area determination **Communication**	2.1 Preparing tools and materials 2.2 Conducting general clearing 2.3 Conducting tillage operation 2.4 Following safety procedures 2.5 Using PPE 2.6 Calculation skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		2.8 Technical terms specific for abaca production **Environment related laws and ordinances** 2.9 Awareness on Philippine National Standard/Bureau of Agriculture and Fisheries Standards 266:2019 Abaca code of GAP 2.10 Easement of right of way under property law 2.11 Awareness on RA 1176 Abaca Zoning Act	
3. Complete activities	3.1 Maintenance and sanitation of tools are performed based on standard procedures 3.2 Wastes are disposed according to standard operating procedures. 3.3 Report and records are prepared based on industry requirements.	**Science** 3.1 Sanitation of tools 3.2 Transmission of pathogens **Technology** 3.3 Proper waste management 3.4 Methods of composting **Mathematics** 3.5 Area requirement for composting **Communication** 3.6 Reports on operation 3.7 Updated farm record books **Environment related laws and ordinances** 3.8 Awareness on PNS/BAFS 266:2019 Abaca code of GAP	3.1 Performing maintenance and sanitation 3.2 Disposing wastes 3.3 Preparing reports and records 3.4 Calculation skills 3.5 Using PPE

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		3.9 Awareness on RA 9003 Ecological solid wastes management act of 2000	

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Climatic pattern	Climatic pattern may include: 1.1 Bio-dynamic Calendar 1.2 Seasonal calendar 1.3 Agro-meteorology 1.3.1 Rainfall 1.3.2 Temperature 1.3.3 Relative Humidity 1.3.4 Wind speed 1.3.5 Pressure
2. Soil type	Soil type may include: 2.1 Sandy clay loam 2.2 Clay loam soil
3. Area topography	Area topography may include: 3.1 Slope 3.2 Terrain 3.3 Elevation
4. Farm shading assessment	Farm shading assessment may include: 4.1 Plant inventory 4.2 Plant population density 4.3 Plant canopy 4.4 Shade estimation
5. Seed testing	Seed testing may include: 5.1 Visual observation 5.1.1 Color 5.1.2 Texture 5.1.3 Existing vegetation 5.2 Soil Sampling 5.3 Soil Test Kit Reading 5.3.1 pH 5.3.2 Nitrogen, Phosphorus and Potassion (NPK) 5.4 Soil feel test
6. Personal Protective Equipment	Personal Protective Equipment may include: 6.1 Rubber boots 6.2 Farmer's hat 6.3 Glove 6.4 Long sleeve 6.5 Long pants 6.6 Hard hat
7. Tools	Tools may include: 7.1 Blunt bolo 7.2 Jungle bolo 7.3 Shovel 7.4 Slashing bolo 7.5 Hand trowel
8. Materials	Materials may include: 8.1 Soil Test Kit 8.2 Empty sacks

	8.3 Plastic pail 8.4 Zip lock 8.5 Record book 8.6 Pens 8.7 Calculator 8.8 Measuring tape 8.9 A-Frame
9. General Clearing	General Clearing may include: 9.1 Land clearing 9.2 Plowing 9.3 Harrowing 9.4 Levelling
10. Tillage operation	Tillage operation may include: 10.1 Primary tillage 10.2 Secondary tillage

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted site selection activity. 1.1.1 Determined climatic pattern. 1.1.2 Identified soil type. 1.1.3 Identified area topography. 1.1.4 Conducted soil testing. 1.1.5 Used PPE's. 1.1.6 Followed safety procedure. 1.2 Performed land preparation. 1.2.1 Prepared tools and materials. 1.2.2 Conducted tillage operation. 1.2.3 Followed safety procedure. 1.2.4 Used PPE's. 1.3 Completed activities. 1.3.1 Performed maintenance and sanitation of tools. 1.3.2 Disposed wastes. 1.3.3 Performed report and records.
2. Resource Implications	The following resources should be provided: 2.1 Plantation area 2.2 Storage shed 2.3 Farm tools and materials 2.4 Logbooks 2.5 References (PNS, RA 1176, RA 9003, RA 11058, GAP)
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Direct Observation 3.2 Demonstration with oral questioning 3.3 Written Test
4. Context of Assessment	4.1 Competency may be assessed in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY : PLANT ABACA

UNIT CODE : AB-AFF1030900611302

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required in planting abaca. This includes performing pre-planting activities, performing abaca crop planting and perform post-planting activities.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre-planting activities	1.1 ***Tools, materials and equipment*** are prepared based on crop requirements. 1.2 Lay outing and staking are performed based on recommended ***abaca varieties*** requirement. 1.3 Dig holes is performed based on the type of ***planting materials***. 1.4 Basal ***fertilizer*** is applied based on recommended fertilizer rate. 1.5 ***Personal Protective Equipment*** is used based on industry standard.	**Science** 1.1 Abaca varieties 1.2 Planting materials 1.3 Plant propagation 1.4 Soil and plant nutrition 1.5 Personal Protective Equipment **Technology** 1.6 Methods of propagation 1.7 Methods of fertilizer application **Mathematics** 1.8 Planting distance 1.9 Hole measurement 1.10 Calculate of fertilizer rate **Environment related laws and ordinances** 1.11 Awareness on Philippine National Standard/Bureau of Agriculture and Fisheries Sector 266:2019 Abaca code of GAP 1.12 Awareness on RA 11058 (Occupational	1.1 Preparing tools, materials and equipment. 1.2 Performing lay outing and staking. 1.3 Performing dig holes 1.4 Applying basal fertilizer 1.5 Using PPE's 1.6 Conducting safety procedure 1.7 Calculation skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		Safety and Health Standard Law)	
2. Perform abaca crop planting	2.1 ***Preparation of planting materials*** is conducted based on industry standard. 2.2 ***Planting materials*** are planted based on industry standard. 2.3 Safety procedure in planting abaca is followed according to OSHS. 2.4 ***Personal Protective Equipment*** is used based on industry standard.	**Science** 2.1 Types of vegetation 2.2 Personal Protective Equipment **Technology** 2.3 Techniques in the preparation of planting materials **Environment related laws and ordinances** 2.4 Awareness on Philippine National Standard/Bureau of Agriculture and Fisheries Sector 266:2019 Abaca code of GAP 2.5 Easement of right of way under property law 2.6 Awareness on RA 1176 Abaca zoning act 2.7 Awareness on RA 11058 (Occupational Safety and Health Standards Law)	2.1 Performing preparation of planting materials 2.2 Planting plant materials 2.3 Following safety procedure 2.4 Using PPE's
3. Perform post-planting activities	3.1 ***Tools, materials and equipment*** for re-planting are prepared based on crop requirements. 3.2 ***Unhealthy*** and ***missing hills*** are identified based on industry standards. 3.3 ***Replanting materials*** are prepared based on standard procedures.	**Science** 3.1 Signs of unhealthy seedlings 3.2 Personal Protective Equipment **Technology** 3.3 Techniques in planting and replanting **Mathematics**	3.1 Preparing tools, materials, and equipment. 3.2 Identifying unhealthy and missing hills 3.3 Preparing replanting materials 3.4 Performing replanting 3.5 Following safety procedures 3.6 Using PPE's

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.4 Replanting is performed according to standard procedures. 3.5 Safety procedure in planting abaca is followed according to OSHS. 3.6 ***Personal Protective Equipment*** is used based on industry standard.	3.4 Inventory of missing hills **Environment related laws and ordinances** 3.5 Awareness on PNS/BAFS 266:2019 Abaca code of GAP 3.6 Awareness of RA 9003 Ecological solid wastes management act of 2000 3.7 Awareness on RA 11058 (OSHS Law	

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Tools, materials and equipment	Tools, materials and equipment may include: 1.1 Tools 1.1.1 Shovel 1.1.2 Blunt Bolo 1.1.3 Digging bar 1.1.4 Calibrated cups 1.1.5 Hand trowel 1.1.6 Wheelbarrow 1.2 Materials 1.2.1 Pail 1.2.2 Empty sacks 1.2.3 Pesticides (Fungicide, insecticides) 1.3 Equipment 1.3.1 Knapsack Sprayer
2. Abaca varieties	Abaca varieties may include: 2.1 Tangongon 2.2 Manguindanao 2.3 Bungulanon 2.4 Inosa
3. Planting materials	Planting materials may include: 3.1 Corm 3.2 Sucker 3.3 Seedlings
4. Preparation of planting materials	Preparation of planting materials may include: 4.1 Corm 4.1.1 Seed piece preparation 4.1.2 Pre germination 4.1.3 Treatment 4.2 Sucker 4.2.1 Treatment 4.3 Seedlings 4.3.1 Acclimatization
5. Fertilizer	Fertilizer may include: 5.1 Dried Chicken dung 5.2 Organic Compost 5.3 Urea 5.4 Ammonium Nitrate
6. Personal Protective Equipment	Personal Protective Equipment may include: 6.1 Farmer Hat 6.2 Long sleeve 6.3 Long pants 6.4 Gloves (Clothe type/Rubber) 6.5 Rubber boots

7. Unhealthy and missing hills	Unhealthy and missing hills may include: 7.1 Unhealthy 7.1.1 Disease damaged 7.1.2 Insect damaged 7.1.3 Stunted 7.1.4 Water stressed 7.2 Missing hills 7.2.1 Damaged by stray animals/soil erosion 7.2.2 Stolen plant 7.2.3 Deceased
8. Replanting Materials	Replanting materials may include: 8.1 Corm 8.2 Sucker 8.3 Seedlings

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Performed pre-planting activities. 1.1.1 Prepared tools, materials, and equipment. 1.1.2 Performed lay outing and staking. 1.1.3 Performed dig holes. 1.1.4 Applied basal fertilizer. 1.1.5 Followed safety procedures. 1.1.6 Used PPE's. 1.2 Performed abaca crop planting. 1.2.1 Conducted preparation of planting materials. 1.2.2 Planted plant materials. 1.2.3 Followed safety procedure. 1.2.4 Used PPE's. 1.3 Performed post-planting activities. 1.3.1 Prepared tools, materials and equipment. 1.3.2 Identified unhealthy and missing hills. 1.3.3 Prepared replanting materials. 1.3.4 Performed replanting. 1.3.5 Followed safety procedures. 1.3.6 Used PPE's.
2. Resource Implications	The following resources MUST be provided: 2.1 Plantation area 2.2 Farm tools and materials 2.3 Farm supplies 2.4 Logbooks 2.5 References (fertilizer and pesticide manual/ catalogue, protocols, field guides, OHSP and GAP manuals) 2.6 Abaca Production guide
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Direct Observation 3.2 Demonstration with oral questioning 3.3 Written exam
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in an accredited institution.

UNIT OF COMPETENCY : CARE AND MAINTAIN ABACA CROPS

UNIT CODE : AB-AFF1030900611303

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to care and maintain abaca. This includes performing watering management, performing weeding and hilling-up, performing abaca deleafing, applying pest and disease management, applying fertilizer and performing after care activities.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform watering management	1.1 ***Preparation of watering program*** is performed based on industry standards. 1.2 ***Tools*** and ***materials*** are prepared according to watering program. 1.3 Watering program is performed based on industry standards. 1.4 Safety procedure in watering abaca is followed according to OSHS. 1.5 ***Personal Protective Equipment*** is used based on industry standard.	**Science** 1.1 Water and nutrient absorption 1.2 Watering program 1.3 Plant water consumption requirement 1.4 Personal Protective Equipment **Technology** 1.5 Mulching 1.6 Water conservation techniques **Communication** 1.7 Updated farm record book **Environment related laws and ordinances** 1.8 Awareness on RA 9275 Water Quality Management 1.9 Awareness of RA 10969 providing free irrigation services	1.1 Performing preparation of watering program 1.2 Preparing tools and materials 1.3 Performing watering program 1.4 Following safety procedure 1.5 Using PPE's
2. Perform weeding and hilling-up	2.1 ***Tools*** and ***materials*** are prepared based on weeding and hilling-up activities	**Science** 2.1 Types of tools and materials 2.2 Weeds morphology	2.1 Preparing tools and materials 2.2 Conducting weeding

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.2 ***Weeding*** is performed based on the industry standard 2.3 Hilling up is performed using methods and techniques 2.4 Safety procedure in weeding and hilling-up is followed according to OSHS. 2.5 Personal Protective Equipment is used based on industry standards	2.3 Significance of hilling up 2.4 Personal Protective Equipment **Technology** 2.5 Weeds management 2.6 Weeding methods 2.7 Hilling-up techniques **Mathematics** 2.8 Measurement of required area for ring weeding and under brushing 2.9 Computation of required man-days for weeding and hilling-up **Environment related laws and ordinances** 2.10 Awareness in RA 9003 Ecological Solid Waste Management Act 2000 2.11 Awareness on RA 8749 Clean Air Act	2.3 Conducting hilling-up 2.4 Following safety procedures 2.5 Using PPE's 2.6 Calculation Skills
3. Perform Abaca deleafing	3.1 ***Tools*** and ***materials*** for deleafing are prepared based on industry standards. 3.2 Deleafing is performed according to PNS. 3.3 Safety procedures is followed according to Occupational Safety and Health Standards and PNS.	**Science** 3.1 Importance of disinfection 3.2 Proper use of tools in abaca deleafing 3.3 Importance of deleafing **Technology** 3.4 Different disinfection techniques **Mathematics**	3.1 Preparing tools and materials 3.2 Carrying-out deleafing 3.3 Following safety procedures 3.4 Using PPE's 3.5 Calculation Skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.4 ***Personal Protective Equipment*** is used based on industry standards.	3.5 Computation of required man-days for deleafing abaca 3.6 Counting of number of mats for deleafing 3.7 Measurement of dilution and mixing disinfectant **Communication** 3.8 Instruction of deleafing **Environment related laws and ordinances** 3.9 Awareness in RA 9003 ecological solid waste management act 2000 3.10 Awareness on RA 8749 clean air act	
4. Apply pest and disease management	4.1 ***Pest and Disease*** incidence is monitored based on industry procedure. 4.2 ***Tools and materials*** are prepared according to pest and disease control measure. 4.3 ***Pest and diseases management*** are followed based on Good Agricultural Practices 4.4 Safety measures is practiced according to Occupational Health and Safety (OHS) procedures. 4.5 ***Personal Protective Equipment*** is used	**Science** 4.1 Life cycle of pest and diseases 4.2 Food web **Technology** 4.3 Monitoring pest and disease incidence 4.4 Integrated Pest Management **Mathematics** 4.5 Calculate appropriate application rates for pest and disease **Communication** 4.6 IEC materials on pest and disease incidence	4.1 Monitoring pest and disease 4.2 Preparing tools and materials 4.3 Following pest and disease management 4.4 Practicing safety measures 4.5 Using PPE's 4.6 Calculation skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	based on industry standards	**Environment related laws and ordinances** 4.7 Awareness on PNS/BAFS 266:2019 4.8 Awareness on RA 11058 (OSHS Law)	
5. Apply fertilizer	5.1 ***Tools and materials*** are prepared according to prescribed user's manual. 5.2 ***Fertilizers*** are identified based on crop growth. 5.3 Fertilizer rates are computed based on crop requirements. 5.4 ***Method of fertilizer application*** is employed based on crop requirements. 5.5 Precautionary measures are applied based on Good Agricultural Practices. 5.6 Safety procedures are followed according to Occupational Safety and Health Standards. 5.7 ***Personal Protective Equipment*** is used based on industry standards.	**Science** 5.1 Soil and plant nutrition 5.2 Soil Analysis 5.3 Type of soil **Technology** 5.4 Using soil testing kit 5.5 pH meter 5.6 Soil Triangle **Mathematics** 5.7 Calculate fertilizer rates **Communication** 5.8 Instruction on fertilizer application **Environment related laws and ordinances** 5.9 Awareness RA 10068 on Organic Agriculture Act 5.10 Awareness of the RA 11511 GAP	5.1 Preparing tools and materials 5.2 Identifying fertilizers 5.3 Computing fertilizer rates 5.4 Employing method of fertilizer application 5.5 Applying precautionary measures 5.6 Following safety procedures 5.7 Using PPE's 5.8 Calculation Skills
6. Perform after care activities	6.1 Maintenance and sanitation of tools are performed based on standard procedure. 6.2 Wastes are disposed according to industry standards.	**Science** 6.1 Principles of sanitation and hygiene 6.2 Cleaning agents for tools **Technology**	6.1 Performing maintenance and sanitation 6.2 Disposing wastes 6.3 Preparing reports and records

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	6.3 Reports and records are prepared based on industry requirements.	6.3 Waste disposal methods 6.4 Composting techniques **Communication** 6.5 Report on tool maintenance, waste disposal 6.6 Record Keeping **Environment related laws and ordinances** 6.7 Awareness on Philippine National Standard/Bureau of Agriculture and Fisheries Sector 266:2019 6.8 Awareness on RA 11058 (Occupational Safety and Health Standard Law) 6.9 Awareness on RA 9003 ecological solid waste management act	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Preparation of watering program	Preparation of watering program may include: 1.1 Irrigation 1.2 Farm drainage
2. Personal Protective Equipment	Personal Protective Equipment may include: 2.1 Farmers Hat 2.2 Long sleeves 2.3 Long pants 2.4 Rubber boots 2.5 Gloves (cloth) 2.6 Spraying Purpose only 2.6.1 Google 2.6.2 Mask respirator 2.6.3 Cover all 2.6.4 Rubber gloves
3. Tools	Tools may include: 3.1 Weeding 3.1.1 Slashing bolo 3.1.2 Hoe 3.1.3 Rake 3.1.4 Blunt bolo 3.1.5 Empty sacks 3.2 Deleafing 3.2.1 Deleafing knife 3.3 Fertilization 3.3.1 fertilizer 3.3.2 Measuring cup 3.3.3 Weighing scale 3.3.4 Hand trowel 3.3.5 Empty sacks 3.4 Watering 3.4.1 Pail 3.4.2 Shovel Plastic drums 3.5 Pest and diseases 3.5.1 Knapsack sprayer
4. Materials	Materials may include: 4.1 Weeding 4.1.1 Empty sacks 4.2 Deleafing 4.2.1 Empty sacks 4.3 Fertilization

	4.3.1 Fertilizer 4.3.2 Empty sacks 4.4 Watering 4.4.1 Plastic drums (200 L capacity) 4.5 Pest and diseases 4.5.1 Pesticides 4.5.2 Measuring cup 4.5.3 Repellants
5. Weeding	Weeding may include: 5.1 Ring weeding 5.2 Strip weeding
6. Pest and disease management	Pest and disease management may include: 6.1 Physical 6.2 Mechanical 6.3 Biological 6.4 Cultural 6.5 Chemical (bio pesticide, synthetic) 6.6 Sanitation
7. Pest and diseases	Pest and diseases may include: 7.1 Weeds 7.1.1 broad leaves 7.1.2 grasses 7.1.3 sedges 7.2 Insects 7.2.1 Aphids 7.2.2 Corm weevil 7.2.3 Slug caterpillar 7.3 Diseases 7.3.1 Viral 7.3.2 Bunchy Top Disease 7.3.3 Mosaic Disease 7.3.4 Bract mosaic 7.3.5 Bacterial 7.3.6 Bacterial wilt 7.3.7 Fungal 7.3.8 Abaca sheath rot 7.4 Mites 7.5 Rodents 7.6 Stray animals
8. Fertilizer	Fertilizer may include: 8.1 Organic fertilizer 8.2 Inorganic fertilizer
9. Method of fertilizer application	Method of fertilizer application may include: 9.1 Basal 9.2 Sidedress

	9.3 Localized 9.4 Band

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Performed watering management. 1.1.1 Conducted watering program. 1.1.2 Performed weeding and hilling-up. 1.2 Prepared tools and materials. 1.2.1 Conducted weeding. 1.2.2 Conducted hilling-up. 1.2.3 Performed abaca deleafing. 1.3 Prepared tools and materials. 1.3.1 Carried-out deleafing. 1.3.2 Applied pest and disease management. 1.4 Monitored pest and disease. 1.4.1 Prepared tools and materials. 1.4.2 Followed pest and disease management. 1.4.3 Applied fertilizer. 1.5 Prepared tools and materials. 1.5.1 Identified fertilizers. 1.5.2 Employed method of fertilizer application. 1.5.3 Applied precautionary measures. 1.5.4 Performed after care activities. 1.6 Performed maintenance and sanitation of tools. 1.6.1 Disposed waste. 1.6.2 Prepared records and reports.
2. Resource Implications	The following resources should be provided: 2.1 Farm or plantation area 2.2 Storage shed 2.3 Farm tools and materials 2.4 Farm supplies 2.5 Logbooks 2.6 References
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Direct Observation 3.2 Demonstration with oral questioning 3.3 Oral Interview 3.4 Written Exam
4. Context of Assessment	4.1 Competency may be assessed individually in the actual workplace or through accredited institution

GLOSSARY OF TERMS

1	**Abaca**	plant scientifically known as Musa textilis Nee of the family Musaceae, is endemic in the Philippines, resembling banana plant but with slender stalk; narrow pointed and smaller leaves; and many-seeded fruit.
2	**Abaca fiber**	filament extracted from the stalks of abaca plant.
3	**Bacnis**	method of tuxying in which the leafsheath is first separated from the stalk. It is then cut into two to three sections depending on the size of the width the tuxero can handle. An incision is made in the cut leafsheath, the exposed part is gripped and pulled through to produce the tuxy
4	**Bio-dynamic**	is a holistic, ecological, and ethical approach to farming, gardening, food, and nutrition.
5	**Biological control**	any incoming resources like planting materials, organic and inorganic fertilizers, water and labor used for the primary production of abaca.
6	**Biosecurity**	strategic and integrated approach to analyse and manage risks in food safety, animal and plant life and health, and biosafety. It provides a policy and regulatory framework to improve coordination and take advantage of the synergies that exist across sectors, helping to enhance protection of human, animal and plant life and health, and facilitate trade.
7	**Bongolanon**	is a variety of abaca plant that grows on wide range of soil fertility. It is has an erect lamina attitude and tapered lamina tip shape with white and fine fibers
8	**Bundling**	packing of dried abaca fiber into desired weight or volume.
9	**Climatic pattern**	a humid equatorial climate characterized by high temperatures and heavy rainfall. Average annual rainfall is approximately 2,348 millimeters (mm), but this varies geographically, from 960 mm in southeast Mindanao to over 4,050 mm in central Luzon
10	**Contaminant**	any material causing hazard intentionally or unintentionally mixed to abaca fiver during the production and postharvest processing transporting and trading.
11	**Contamination**	introduction or occurrence of a hazard during the production, postharvest, handling/on-farm processing and transport of abaca
12	**Corm**	rootstock, underground modified stem that contains nodes and internodes
13	**Decortication**	mechanized process of extracting abaca fiber where leafsheaths are scraped by means of revolving wheels with blades
14	**Disinfection**	reduction in the number of microorganisms on/in the commodity and on the production, sites including facilities through chemical agents and/or physical methods to a level that does not compromise product quality or suitability.
15	**Drying**	removal of excess water from the fiber which is done either by sun-drying or air-drying the abaca fiber before storage.
16	**Easement of right-of-way**	An easement is a legal right that allows someone to use another person's property for a specific purpose, often referred to as an

		"easement right of way" when it involves passage or access. The property owner who grants the easement is known as the "grantor" or "servient estate," and the person or entity benefiting from the easement is called the "grantee" or "dominant estate."
17	**Eyebud**	portion of the seedpiece containing one prominent bud
18	**Farm**	any premise, establishment or immediate surroundings in which abaca is grown and harvested
19	**Fertigation**	is a method of fertilizer application in which fertilizer is incorporated within the irrigation water by the drip system. In this system fertilizer solution is distributed evenly in irrigation. The availability of nutrients is very high therefore the efficiency is more.
20	**Fertilizer**	includes any substance – solid or liquid – or any nutrient element or elements –organic or inorganic – singly or in combination with other materials, applied directly to the soil, foliage or plant for the purpose of promoting plant growth, increasing crop yield or improving the quality of abaca plant.
21	**Fiber extraction**	process of extracting fiber from abaca
22	**Flag leaf**	last leaf appearing after planting which indicates maturity or readiness of abaca for harvesting
23	**Grading**	classifying abaca fiber according to the standards set by the competent authority on the quality of abaca fiber
24	**Hand-stripping**	manual method of extracting fiber by manually pulling the tuxy placed between a block and serrated or non-serrated stripping knife
25	**Hardening**	conditioning of plants for survival when transplanted outdoors
26	**Hill**	point/place at which planting materials are planted
27	**Hilling-up**	is the technique in agriculture and horticulture of piling soil up around the base of a plant. It can be done by hand (usually using a hoe), or with powered machinery, typically a tractor attachment. Hilling buries the normally above-ground part of the plant, promoting desired growth.
28	**Immature sucker**	nine (9) to eleven (11) month old sucker that is at least one (1) meter tall
29	**Inosa**	is a variety of abaca plant that thrives well in medium fertile soil, it is hardy; resistant to drought as well as strong winds.
30	**Integrated Pest Management (IPM)**	pest management approach that uses all available pest control methods including but not limited to judicious use of pesticides, to optimize a crop’s ability to resist the pest with the least hazard to man and environment
31	**Kutay-kutay**	is a deeply rooted variety which is drought resilient and hard to tumble down during strong winds and typhoons. Its fiber color does not diminish/discolor easily in storage, easy to tuxy with less effort to extract its fibers and less fiber waste to boot.
32	**Leafsheath**	overlapping sheaths that form the stalk (pseudostem) of abaca plant.
33	**Localized fertilizer application**	It refers to the application of fertilizers into the soil close to the seed or plant in order to supply the nutrients in adequate amounts to the roots of growing plants.

34	**Locnit**	method of tuxying in which the tuxying knife is inserted in the leafsheath, still attached to the stalk, in a slanting position, gripping the exposed part and pulling it through to produce the tuxy. The rest of the leafsheath is then manually separated from the stalk and discard as waste
35	**Manguidanao**	is a variety of abaca plant, has large stalks closely similar to Tangongon, and thrives well only on sandy to light clay loam. Resistant to bunchy top and root-rot disease, sensitive to drought due to its scanty root system.
36	**Manila hemp**	is extracted from the leaf sheath around the trunk of the abaca plant (Musa textilis), a close relative of the banana, native to the Philippines and widely distributed in the humid tropics.
37	**Mat**	grouping of abaca plants in a hill
38	**Musa textilis**	is a species of banana native to the Philippines, grown as a commercial crop in the Philippines, Ecuador, and Costa Rica. The plant, also known as Manila hemp, has great economic importance, being harvested for its fiber, also called Manila hemp, extracted from the leaf-stems.
39	**Pest**	harmful animal, plant, and microorganism that may affect the production quantity and quality and safety of abaca. These include insects, mites, pathogens, weeds, rodents, mollusks and birds
40	**Pesticide**	any substance or product, or mixture including active ingredients, adjuvants and pesticide formulations intended to control, prevent, destroy, repel or mitigate directly or indirectly any pest. The term shall be understood to include insecticide, fungicide, bactericide, nematicide, herbicide, molluscicide, avicide, rodenticide, defoliant, desiccant and the like
41	**Planting materials**	type of materials used to establish or replace abaca plant in the field.
42	**Postharvest**	operations/primary processes undergone by abaca prior to sale
43	**Rain gauge**	is a meteorological instrument to measure the precipitating rain in a given amount of time per unit area.
44	**Replanting**	refers to the process of growing a new abaca (Musa textilis) crop after the previous crop has been harvested or removed.
45	**Ring weeding**	removal of unwanted plants around abaca. This also helps to mark newly planted areas and vacant hills
46	**Seasonal Calendar**	is a visual method of showing the distribution of seasonally varying phenomena (for example, economic activities, production activities, problems such as debt, illness/disease, migration, and natural events/phenomena etc) over time.
47	**Seedpiece**	section of a corm containing at least three (3) viable eyebuds
48	**Spindle-stripping**	mechanized method of extracting the fiber where the tuxy is wound around tapered-shaped spindle rotated by motor or engine
49	**Stripping knife**	metal shaped like a bolo with a long wooden handle use for hand stripping which may or may not have serrations
50	**Sucker**	shoot from the mother plant

51	**Sword sucker**	one (1) to three (3) month old sucker with leaves without midribs and very narrow lamina that is about 0.5 m tall
52	**Tangongon**	is a variety of abaca crop, rhizome shape is roundish, purple red pseudo stem; hardy, vigorous, and sturdy. Grows well on loamy clay soil.
53	**Tissue-cultured plantlet**	true-to-type plantlet developed in laboratories and transferred to nurseries for hardening
54	**Topping**	cutting of leaves of stalks prior to tumbling
55	**Tumbling**	cutting of the abaca stalk at the base
56	**Tuxy**	outer layer of abaca leafsheath which contains the abaca fiber.
57	**Tuxying**	process of extracting the outer layer of the leafsheath using tuxying knife where incisions are made between the outer and the rest of the layers of the leafsheath. The exposed bit of the outer layer is gripped and manually pulled to separate the entire length from the rest of the leafsheath to produce the tuxy.

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