COMPETENCY STANDARDS

INBRED RICE PRODUCTION LEVEL II

AGRICULTURE, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
TESDA Complex East Service Road, South Luzon Expressway (SLEX),
Fort Bonifacio, Taguig City

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

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

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COMPETENCY STANDARDS FOR

INBRED RICE PRODUCTION LEVEL II

Section 1 INBRED RICE PRODUCTION LEVEL II QUALIFICATION

The **INBRED RICE PRODUCTION LEVEL II** Qualification consists of competencies that a person must achieve to select rice seed variety, perform land preparation, establish rice crops, care and maintain rice crops, and harvest rice grain and perform postharvest operations.

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

The units of competency comprising this qualification include the following:

CODE NO.	BASIC COMPETENCIES
400311210	Participate in workplace communication
400311211	Work in team environment
400311212	Solve/address general workplace problems
400311213	Develop career and life decisions
400311214	Contribute to workplace innovation
400311215	Present relevant information
400311216	Practice occupational safety and health policies and procedures
400311217	Exercise efficient and effective sustainable practices in the workplace
400311218	Practice entrepreneurial skills in the workplace

CODE NO.	COMMON COMPETENCIES
AFF321201	Apply safety measures in farm operations
AFF321202	Use farm tools and equipment
AFF321203	Perform estimation and basic calculation

CODE NO.	CORE COMPETENCIES
CS-AFF611319	Select Rice Seed Variety
CS-AFF611320	Perform Land Preparation
CS-AFF611321	Establish Rice Crops
CS-AFF611322	Care and Maintain Rice Crops
CS-AFF611323	Conduct Harvest and Postharvest Operation

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

- Rice Farmer

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 **INBRED RICE 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 are identified and followed. 1.6 Defined workplace procedures for the location and	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 in the workplace 1.7 Gathering and providing basic information in response to

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	storage of information are used. 1.7 Personal interaction is carried out clearly and concisely.		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 conditions of employment are sought and asked from ***appropriate sources***. 2.6 Meetings outcomes are interpreted and implemented.	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 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	3.1 Effective verbal and non-verbal communication	3.1 Completing work-related documents

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	3.2 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	3.2 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	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	May include: 2.1 Memorandum 2.2 Circular 2.3 Notice 2.4 Information dissemination 2.5 Follow-up or verbal instructions 2.6 Face-to-face communication 2.7 Electronic media (disk files, cyberspace)
3. Storage	May include: 3.1 Manual filing system 3.2 Computer-based filing system
4. Workplace interactions	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	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	4.1 Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY : WORK IN TEAM ENVIRONMENT

UNIT CODE : 400311211

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify one's roles and responsibilities as a member of a team.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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
3. Work as a team member	3.1 Effective and appropriate forms of communications are used and interactions undertaken with team members	3.1 Communication Process 3.2 Workplace communication protocol	3.1 Communicating appropriately, consistent with the culture of the workplace

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	3.3 Team planning and decision making 3.4 Team thinking 3.5 Team roles 3.6 Process of team development 3.7 Workplace context	3.2 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	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	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	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 solutions are developed, **documented**, ranked and presented to ***appropriate***	2.1 Current industry hardware and software products and services 2.2 Industry service and helpdesk practices, processes and procedures 2.3 Operating systems	2.1 Identifying current industry hardware and software products and services 2.2 Identifying services and helpdesk practices,

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	person for decision.	2.4 Industry standard diagnostic tools 2.5 Malfunctions and resolutions. 2.6 Root cause analysis	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	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	May include: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	May include: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	May include: 4.1 Priority requirements 4.2 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	4.1 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 teacher feedback are contemplated. 2.2 Progress when seeking and responding to	2.1 Basic SWOT analysis 2.2 Strategies to improve one's attitude in the workplace 2.3 Gibbs' Reflective Cycle/Model (Description, Feelings,	2.1 Using the basic SWOT analysis as self-assessment strategy 2.2 Developing reflective practice through realization of limitations, likes/

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	Evaluation, Analysis, Conclusion, and Action plan)	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 and weaknesses

RANGE OF VARIABLES

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

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 resources 2.2 Case studies
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration or simulation with oral questioning 3.2 Case problems involving work improvement and sustainability issues 3.3 Third-party report
4. Context for Assessment	4.1 Competency assessment may occur in workplace or any appropriately simulated environment

UNIT OF COMPETENCY : CONTRIBUTE TO WORKPLACE INNOVATION

UNIT CODE : 400311214

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to make a pro-active and positive contribution to workplace innovation.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify opportunities to 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. 2.5 ***Critical inquiry method*** is used to discuss and develop ideas with others.	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 outside own scope of responsibility 2.4 Communicating ideas for change through small group

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
			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	May include: 1.1 Systems 1.2 Processes 1.3 Procedures 1.4 Protocols 1.5 Codes 1.6 Practices
2. Information	May include: 2.1 Workplace communication problems 2.2 Performance evaluation results 2.3 Team dynamics issues and concerns 2.4 Challenges on return of investment 2.5 New tools, processes and procedures 2.6 New people in the organization
3. People who could 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	May include: 4.1 Preparation 4.2 Discussion 4.3 Clarification of goals 4.4 Negotiate towards a Win-Win outcome 4.5 Agreement 4.6 Implementation of a course of action 4.7 Effective verbal communication. See our pages: Verbal Communication and Effective Speaking 4.8 Listening 4.9 Reducing misunderstandings is a key part of effective negotiation 4.10 Rapport Building 4.11 Problem Solving 4.12 Decision Making 4.13 Assertiveness 4.14 Dealing with Difficult Situations
5. Reporting skills	May include: 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 applied to assess data/ information.	2.1 Business mathematics and statistics 2.2 Data analysis techniques/ procedures 2.3 Reporting requirements to a	2.1 Computing business mathematics and statistics 2.2 Describing data analysis techniques/ procedures

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	range of audiences 2.4 Legislation, policy and procedures relating to the conduct of evaluations 2.5 Organisational values, ethics and codes of conduct	2.3 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	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	4.1 In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

UNIT OF COMPETENCY : PRACTICE OCCUPATIONAL SAFETY AND HEALTH POLICIES AND PROCEDURES

UNIT CODE : 400311216

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to identify OSH compliance requirements, prepare OSH requirements for compliance, 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 workplace policies and procedures.	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 2.5 Different OSH control measures	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 identification skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3 Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards.		
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	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	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	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	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	4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : EXERCISE EFFICIENT AND EFFECTIVE SUSTAINABLE PRACTICES IN THE WORKPLACE

UNIT CODE : 400311217

UNIT DESCRIPTOR : This unit covers knowledge, skills and attitude to identify the efficiency and effectiveness of resource utilization, determine causes of inefficiency and/or ineffectiveness of resource utilization and Convey inefficient and ineffective environmental practices.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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 through deductive reasoning. 2.3 Identified causes of inefficiency and/or ineffectiveness are validated thru established environmental procedures.	2.1 Causes of environmental inefficiencies and ineffective-ness	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
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	May include: 1.1 Utilization of Energy, Water, Fuel Procedures 1.2 Waster Segregation Procedures 1.3 Waste Disposal and Reuse Procedures 1.4 Waste Collection Procedures 1.5 Usage of Hazardous Materials Procedures 1.6 Chemical Application Procedures 1.7 Labeling Procedures
2. Appropriate Personnel	May include: 2.1 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 are being undertaken whether individually or in-group

UNIT OF COMPETENCY : PRACTICE ENTREPRENEURIAL SKILLS IN THE WORKPLACE

UNIT CODE : 400311218

UNIT DESCRIPTOR : This unit covers the outcomes required to apply entrepreneurial workplace best practices and implement cost-effective operations.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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 • Resourceful-ness	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 utilization are communicated based on industry standards.	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: • Patience • Honesty • Quality-consciousness • Safety-consciousness • Resourceful-ness	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol
3. Implement cost-effective operations	3.1 Preservation and optimization of workplace	3.1 Optimization of workplace resources	3.1 Implementing preservation and optimizing

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	3.2 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	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	May include: 1.1 Economy in use of resources 1.2 Documentation of quality practices
2. Resources utilization	May include: 2.1 Consumption/ use of consumables 2.2 Use/Maintenance of assigned equipment and furniture 2.3 Optimum use of allotted /available time

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 for 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. 2.2 Outfits are worn according to farm requirements. 2.3 Effectivity/shelf life/expiration of	2.1 Uses and functions of tools 2.2 Outfits and how to wear it 2.3 Expiration/shelf life of materials 2.4 Proper disposal of expired materials	2.1 Using tools and materials in the workplace 2.2 Wearing of outfits 2.3 Observing expiration/shelf life of materials

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	materials are strictly observed. 2.4 ***Emergency procedures*** are known and followed to ensure a safework requirement. 2.5 Hazards in the workplace are identified and reported in line with farm guidelines.	2.5 Environmental rules and regulations 2.6 Emergency procedures 2.7 Hazards identification and reporting 2.8 Communication skills 2.9 OSHS	2.4 Disposing of expired materials 2.5 Following emergency procedures 2.6 Identifying and reporting of hazards in workplace area
3. Safekeep /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 manufacturer's 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 Labeling and storing unused materials 3.3 Disposing waste materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the subsectors: 1.1 Crop Production 1.2 Post-harvest 1.3 Agri-marketing 1.4 Farm Equipment
2. Place	2.1 Stock room/storage areas/warehouse 2.2 Field/farm/orchard
3. Time	3.1 Fertilizer and pesticides application 3.2 Feed mixing and feeding 3.3 Harvesting and hauling
4. Tools, materials and outfits	4.1 Tools 4.1.1 Wrenches 4.1.2 Screw driver 4.1.3 Pliers 4.2 Outfit 4.2.1 Masks 4.2.2 Gloves 4.2.3 Boots 4.2.4 Overall coats 4.2.5 Hat 4.2.6 Eye goggles
5. Emergency procedures	5.1 Location of first aid kit 5.2 Evacuation 5.3 Agencies contract 5.4 Farm emergency procedures
6. Hazards	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. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Practical demonstration 3.2 Third Party Report
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

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	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 with farm procedures. 2.5 Farm equipment is used according to its function. 2.6 Safety procedures are followed.	2.1 Types and operations of farm equipment 2.2 Standards operating procedures of farm equipment 2.3 Instructional manual of equipment 2.4 Pre-operation check-up 2.5 Equipment Specification 2.6 Procedures in calibrating and use of equipment 2.7 Equipment faults identification and reporting 2.8 Operation of equipment	2.1 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 2.7 Following safety procedures

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		2.9 Codes and Regulations on environmental protection 2.10 Safety and keeping of equipment every after use 2.11 Safety measures	
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 routinely 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	May include: 1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	May include: 2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools
3. Pre-operation check-up	May include: 3.1 Tires 3.2 Brake fluid 3.3 Fuel 3.4 Water 3.5 Oil 3.6 Lubricants 3.7 Battery

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. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Direct observation 3.2 Practical demonstration 3.3 Third Party Report
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 : 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	1.1 ***System and units of measurement*** to be followed are ascertained. 1.2 Calculation needed to complete work tasks are performed using the ***four basic mathematical operation***. 1.3 Calculate whole fraction, percentage and mixed when are used to complete the instructions.	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
	1.4 Number computed is checked following work requirements		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Four basic mathematical operation	Includes: 1.1 Addition 1.2 Subtraction 1.3 Multiplication 1.4 Division
2. System of measurement	Includes: 2.1 English 2.2 Metric
3. Units of measurement	Includes: 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. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Practical demonstration 3.2 Written examination
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

CORE COMPETENCIES

UNIT OF COMPETENCY : SELECT RICE VARIETY

UNIT CODE : CS-AFF611319

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to select rice seed variety. These include determination of high-quality seeds and recommended variety, and perform seed germination test.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Determine high quality seeds	1.1 ***Different growth stages of rice*** are identified based on recognized rice agricultural system. 1.2 ***Recommended rice varieties*** are sourced from NSIC and PSB as reference in accordance to industry standard. 1.3 ***High-quality seeds*** are identified based on recognized rice agricultural system. 1.4 ***Varietal characteristics*** of rice seeds is identified based on recommended varieties adopted to local conditions. 1.5 ***Agronomic characteristics*** of regional and provincial varieties is identified based on industry standard. 1.6 ***Classes of rice seeds*** are identified based on the standard of NSQCS.	**SCIENCE** 1.1 Morphology of rice crop 1.2 Growth phases and stages of rice plant 1.3 Characteristics of high-quality rice seeds 1.4 Seed dormancy **TECHNOLOGY** 1.5 Identification of high quality seeds 1.6 Sources of the recommended lists of rice varieties 1.7 Binhing Palay App 1.8 PalayCheck System **ENVIRONMENT AND OTHER RELATED LAWS** 1.9 Bureau of Plant Industry - National Seed Quality Control Services (BPI-NSQCS) 1.10 Awareness on RA 11058 - An Act Strengthening	1.1 Identifying different stages of rice 1.2 Identifying varietal characteristics 1.3 Determining the agronomic characteristics of rice seeds

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 1.11 PNS 141:2019 Good Agricultural Practices for Rice	
2. Perform seed germination test	2.1 ***Tools, materials and supplies*** are prepared based on the industry requirement. 2.2 Growing media is prepared based on industry procedure. 2.3 ***Seed dormancy-treatment*** is applied based on industry practices. 2.4 Seed germination test is conducted in accordance to industry procedure. 2.5 Record keeping is performed based on industry procedure. 2.6 ***Personal protective equipment (PPE)*** is used following OSHS.	**SCIENCE** 2.1 Types of growing media 2.2 Seed dormancy treatment **TECHNOLOGY** 2.3 Method and procedures of seed germination 2.4 Use of tools, supplies and materials 2.5 Use of PPE **ENVIRONMENT AND OTHER RELATED LAWS** 2.6 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof **MATHEMATICS** 2.7 Seed germination rate computation 2.8 Ratio and proportion of growing media **COMMUNICATION** 2.9 Record keeping	2.1 Preparing tools materials and supplies 2.2 Preparing growing media 2.3 applying seed dormancy treatment 2.4 Conducting seed germination tests 2.5 Computing seed germination rate 2.6 Performing record keeping 2.7 Wearing PPEs

RANGE OF VARIABLES

VARIABLE	RANGE
1. Different growth stages of rice	Different growth stages of rice may include: 1.1 Vegetative 1.1.1 Germination to emergence 1.1.2 Seedling 1.1.3 Tillering 1.1.4 Stem elongation 1.2 Reproductive 1.2.1 Panicle initiation to booting 1.2.2 Heading 1.2.3 Flowering 1.3 Ripening 1.3.1 Milk grain 1.3.2 Dough grain 1.3.3 Mature grain
2. Recommended rice varieties	Recommended varieties may include: 2.1 Resistant to biotic and abiotic stresses 2.2 Produced relatively stable and high yields 2.3 Preferred by farmers and local consumers
3. High-quality seeds	High quality seeds may include: 3.1 Pure, and fewer weeds 3.2 Higher percentage of germination 3.3 Free from visible seed borne diseases 3.4 Full and uniform in size 3.5 Certified by the National Seed Quality Control Services (NSQCS)
4. Varietal Characteristics of rice	Varietal Characteristics of rice may include: 4.1 National recommended varieties 4.1.1 NSIC Rc 216 4.1.2 NSIC Rc 160 4.1.3 NSIC Rc 218 4.1.4 NSIC Rc 222 4.2 Regional and provincial recommended varieties (Location specific)
5. Agronomic characteristics	Agronomic characteristics may include: 5.1 Average Yield 5.2 Maximum Yield 5.3 Maturity (days after sowing) 5.4 Height 5.5 Number of tillers 5.6 Recommendation domain
6. Classes of rice seeds	Classes of rice seeds may include: 6.1 Breeder seeds 6.2 Foundation seeds 6.3 Registered seeds 6.4 Certified seeds

VARIABLE	RANGE
7. Tools	Tools may include: 7.1 Measuring instrument 7.2 Trowel 7.3 Hand Sprayer 7.4 Tray 7.5 Tweezer
8. Materials	Materials may include: 8.1 Seedling tray 8.2 Paper towel
9. Supplies	Supplies may include: 9.1 Palay Seeds 9.2 Growing media
10. Seed dormancy treatment	Seed dormancy treatment may include: 10.1 Expose to high temperature 10.2 Seed priming 10.3 Pre-germination
11. PPE	PPE may include: 11.1 Long sleeves 11.2 Hat 11.3 Gloves

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Determined high quality seeds. 1.1.1 Identified high-quality seeds. 1.1.2 Identified varietal characteristic of rice seeds. 1.1.3 Identified classes of rice seeds. 1.2 Performed seed germination test. 1.2.1 Prepared tools materials and supplies. 1.2.2 Conducted seed germination test. 1.2.3 Performed record keeping. 1.2.4 Used PPE.
2. Resource Implications	The following resources MUST be provided: 2.1 Farm site/ simulated workplace 2.2 NSIC approved rice seed varieties 2.3 PPE 2.4 Tools and equipment relevant to the proposed activity or tasks 2.5 Reference –PNS; Quality Standards; PhilGap (rice)
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration and oral questioning 3.2 Direct observation 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the actual workplace or simulated environment provided by the institutions with TESDA registered programs.

UNIT OF COMPETENCY : PERFORM LAND PREPARATION

UNIT CODE : CS-AFF611320

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform land preparation which includes pre-tillage operation, tillage operation, and post tillage operation.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre-tillage operation	1.1 ***Tools, materials and equipment*** are made ready for land preparation. 1.2 ***Land clearing activities*** are conducted according to ***topography***, and area. 1.3 Safety procedures is followed according to OSHS. 1.4 Machinery services are sourced out following work requirement. 1.5 Dikes are ***constructed and repaired*** according to recognized rice agricultural system.	**SCIENCE** 1.1 Different topography 1.2 Climatic condition **TECHNOLOGY** 1.3 Land clearing activities 1.3.1 Importance of land cleaning in rice production 1.4 Tools, materials, and equipment required in land preparations 1.5 Procedures in preparation of tools, material and equipment 1.6 PPE 1.7 Different machinery services for land preparations 1.8 Palay Check System 2022 1.9 Activities in repairing dikes **ENVIRONMENT AND OTHER RELATED LAWS** 1.10 Awareness on RA 11058 - An Act Strengthening Compliance with	1.1 Preparing tools, materials and equipment 1.2 Clearing the area. 1.3 Constructing and repairing dikes 1.4 Sourcing of machinery services 1.5 Practicing OSHS 1.6 Wearing PPE 1.7 Practicing PhilGAP

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 1.11 Philippine Good Agricultural Practices (PhilGAP)	
2. Conduct tillage operations	2.1 ***Tillage operation*** is carried-out according to standard tillage practices. 2.2 Tillage operation is ***monitored*** following standard tillage practices. 2.3 Safety measures are practiced according to OSH standards.	**SCIENCE** 2.1 Characteristics of a well prepared wetland and dryland fields **TECHNOLOGY** 2.2 Tillage operation and practices 2.3 Monitoring tillage operation 2.4 PalayCheck System **ENVIRONMENT AND OTHER RELATED LAWS** 2.5 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 2.5.1 Safety procedures for land preparation 2.6 PNS 141:2019 Good Agricultural Practices for Rice 2.7 Awareness on RA 8749 – Philippine Clean Air Act of 1999	2.1 Repairing damaged dikes 2.2 Disposing wastes 2.3 Completing transactions with machinery service provider 2.4 Performing record keeping 2.5 Communication skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Perform post-tillage operations	3.1 Damaged dikes are repaired following recognized rice agricultural system. 3.2 Transaction with the machinery service provider is completed with reference to work contract. 3.3 Record keeping is done following workplace procedures. 3.4 Work area is cleaned following good housekeeping practices. 3.5 Wastes are disposed following waste management.	**TECHNOLOGY** 3.1 Activities of repairing dikes 3.2 Proper wastes disposal 3.3 Procedures in closing transaction with machinery services provider **ENVIRONMENT AND OTHER RELATED LAWS** 3.4 Awareness on RA 9003 Solid Waste Management Act 3.5 5S **COMMUNICATION** 3.6 Simple recordkeeping	3.1 Repairing damaged dikes 3.2 Disposing wastes 3.3 Applying waste management 3.4 Completing transactions with machinery service provider 3.5 Performing record keeping 3.6 Communication skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools	Tools may include: 1.1 Bolo 1.2 Shovel
2. Materials	Materials may include: 2.1 Fuel 2.2 Engine oil 2.3 Sharpening stone
3. Equipment	Equipment may include: 3.1 Grass cutter 3.2 Knapsack sprayer 3.3 PPE 3.3.1 Field boots 3.3.2 Dust mask 3.3.3 Gloves 3.3.4 Eye Goggles 3.3.5 Hat 3.3.6 Reflectorized vest 3.4 Hand Tractor with plows, harrows and leveler
4. Land clearing activities	Land clearing activities may include: 4.1 For irrigated 4.1.1 Cleaning of dikes and leaves 4.1.2 Cleaning of irrigation and drainage canals 4.1.3 Spreading of remaining crop stubbles 4.2 For rainfed 4.2.1 Cleaning of rice field
5. Topography	Topography may include: 5.1 Flat 5.2 Sloping 5.3 Mountainous 5.4 Plateau
6. Constructing dikes	Constructing dikes may include: 6.1 Installing screen mesh to water inlets and outlets 6.2 Elevating water dikes
7. Repairing dikes	Repairing dikes include: 7.1 Sealing and patching rat burrows, cracks, damaged dikes 7.2 Reinforcing dikes 7.3 Using bamboo poles 7.4 Elevating dikes
8. Tillage Operation	Tilling operation includes: 8.1 Wet tillage practices 8.2 Dry land tillage practices 8.3 Wet and dry tillage practices

VARIABLE	RANGE
9. Monitoring of tillage operation	Monitoring of tillage operation includes: 9.1 Field condition 9.2 Water level 9.3 Unplowed soil 9.4 Decomposed Rice stubbles and weeds

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Performed pre-tillage operations. 1.1.1 Prepared tools, materials and equipment. 1.1.2 Conducted land clearing activities. 1.1.3 Constructed and repaired dikes. 1.2 Conducted tillage operation. 1.2.1 Carried-out tillage operation. 1.2.2 Monitored tillage operation. 1.2.3 Practiced safety measures. 1.3 Performed post-tillage operations. 1.3.1 Repaired damaged dikes. 1.3.2 Performed record keeping. 1.3.3 Cleaned work area. 1.3.4 Disposed wastes.
2. Resource Implications	The following resources MUST be provided: 2.1 Farm site/ simulated workshop 2.2 Tools, materials, farm implements and equipment for land preparation activities 2.3 PPE
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration and oral questioning 3.2 Direct observation 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the actual workplace or simulated environment provided by the institutions with TESDA registered programs.

UNIT OF COMPETENCY : ESTABLISH RICE CROPS

UNIT CODE : CS-AFF611321

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to establish rice crops which includes conduct of preparatory activities, direct seeding operation, seedbed preparation, transplanting, and perform post operation activities.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct preparatory activities	1.1 Cropping calendar is prepared based on community planting schedule. 1.2 Recommended seeding rate is followed as per recognized rice agricultural system. 1.3 Wearing of PPE is practiced following the OSHS standards. 1.4 Tools, equipment and materials are prepared based on work requirements.	**TECHNOLOGY** 1.1 Importance of cropping calendar 1.2 Palay Check System 1.2.1 Synchro-nous planting 1.2.2 Asynchro-nous planting 1.3 PPEs 1.4 Preparation of tools, equipment and materials **ENVIRONMENT AND OTHER RELATED LAWS** 1.5 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof **MATHEMATICS** 1.6 Seeding rate 1.7 Cropping calendar (counting days)	1.1 Wearing PPE 1.2 Coordination skills 1.3 Communication skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		COMMUNICATION 1.8 Gathering of information	
2. Conduct direct seeding operation	2.1 Seed is prepared following industry procedure. 2.2 Canalets is constructed based on recognized rice agricultural system. 2.3 Broadcasting method is performed based on industry procedure. 2.4 Wearing of PPE is practiced according to OSHS standards. 2.5 Plant density is monitored following recognized rice agricultural system. 2.6 Recordkeeping is performed following recognized rice agricultural system.	**SCIENCE** 2.1 Importance of seed density 2.2 Seed preparation **TECHNOLOGY** 2.3 Industry standards in seed sowing 2.4 Use of drum seeder 2.5 PalayCheck system 2.6 Safety gears used in direct seeding **ENVIRONMENT AND OTHER RELATED LAWS** 2.7 OSHS in direct seeding 2.8 Awareness on RA 6969 – Hazardous chemicals **MATHEMATICS** 2.9 Computation of fertilizer rate 2.10 Area computation	2.1 Mathematical skills in measuring area 2.2 Soaking seed 2.3 Incubating seed 2.4 Handling pre-germinated seeds 2.5 Sowing seed 2.6 Wearing safety PPEs 2.7 Checking water level
3. Prepare seedbed for transplanting	3.1 Site selection is performed following industry procedure. 3.2 Seedbed is constructed according to industry procedure. 3.3 Seed sowing is performed following industry procedure. 3.4 Seedling is maintained following industry procedure.	**SCIENCE** 3.1 Importance of seedbed preparation 3.2 Principles of seed sowing **TECHNOLOGY** 3.3 Criteria in selecting seedbed 3.4 Industry standards in seed sowing 3.5 Seedling management	3.1 Selecting seedbed site 3.2 Preparing seedbed 3.3 Mathematical skills in measuring seedbed area 3.4 Sowing seed 3.5 Applying seedling management 3.6 Computing for fertilizer rate

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		3.6 PalayCheck system 3.7 Methods of seedbed preparation: 3.7.1 Dapog system 3.7.2 Modified dapog 3.7.3 Mat tray **ENVIRONMENT AND OTHER RELATED LAWS** 3.8 Awareness on RA 6969 – Hazardous chemicals 3.9 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 3.10 PNS 141:2019 Good Agricultural Practices for Rice **MATHEMATICS** 3.11 Ratio 3.12 Computation of area 3.13 Computation of fertilizer rate	
4. Conduct transplanting	4.1 Seedlings are pulled based on recognized rice agricultural system. 4.2 Transplanting is done based on work requirement. 4.3 Wearing of safety gears are practiced according to OSHS standards	**TECHNOLOGY** 4.1 Pre- transplanting procedures 4.2 Transplanting procedures 4.3 Machine operation	4.1 Wearing safety gears 4.2 Transplanting seedlings

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	4.4 Sufficient healthy seedling is checked based on recognized rice agricultural system.	**ENVIRONMENT AND OTHER RELATED LAWS** 4.4 Safety gears used in transplanting 4.5 OSHS in transplanting **MATHEMATICS** 4.6 Computation of fertilizer rate 4.7 Estimation of water level 4.8 Area computation	
5. Perform post-operation activities	5.1 Replanting of missing hiils is performed based on recognized rice agricultural system. 5.2 Tools and equipment are cleaned and sanitized based on industry practice. 5.3 Tools, equipment and materials are stored based on industry standard. 5.4 Record is maintained based on work requirement. 5.5 Wastes are disposed based on industry standards.	**SCIENCE** 5.1 Importance of replanting **TECHNOLOGY** 5.2 Replanting procedure 5.3 Tools, materials and equipment **ENVIRONMENT AND OTHER RELATED LAWS** 5.4 Waste disposal **COMMUNICATION** 5.5 Recordkeeping	5.1 Replanting procedure 5.2 Maintenance of tools and equipment 5.3 Basic record keeping 5.4 Waste disposal

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools	Tools may include: 1.1 Direct seeding 1.1.1 Seed container 1.2 Transplanting 1.2.1 Bolo 1.2.2 Rice seedling tray 1.2.3 Meter stick
2. Equipment	Equipment may include: 2.1 Direct seeding 2.1.1 Weighing scale 2.1.2 Drum seeder 2.2 Transplanting 2.2.1 Rice transplanter 2.2.2 Weighing scale
3. Materials	Materials may include: 3.1 Direct seeding 3.1.1 Empty sack 3.1.2 Pre-germinated seed 3.2 Transplanting 3.2.1 Seedlings 3.2.2 Planting guide 3.2.3 Fuel
4. Seed preparation	Seed preparation may include: 4.1 Seed soaking 4.2 Seed incubation 4.3 Handling and transporting germinated seeds
5. PPE	PPE may include: 5.1 Long sleeves shirt 5.2 Hat 5.3 Towel
6. Seedling maintenance	Seedling maintenance may include: 6.1 Nutrient management 6.2 Water management 6.3 Pests management
7. Transplanting	Transplanting may include: 7.1 Manual 7.2 Mechanical

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted preparatory activities. 1.1.1 Prepared cropping calendar. 1.1.2 Followed recommended seeding rate. 1.2 Conducted direct seeding operations. 1.2.1 Prepared seed. 1.2.2 Constructed canalet. 1.2.3 Performed broadcasting method. 1.2.4 Monitored plant density. 1.2.5 Performed recordkeeping. 1.3 Prepared seedbed for transplanting. 1.3.1 Performed site selection. 1.3.2 Constructed seedbed. 1.3.3 Performed seed sowing. 1.3.4 Maintained seedling. 1.4 Conducted transplanting. 1.4.1 Performed transplanting. 1.5 Performed post-operation activities. 1.5.1 Replanted missing hills. 1.5.2 Maintained record.
2. Resource Implications	The following resources MUST be provided: 2.1 Farm site/ simulated workplace 2.2 Planting Calendar 2.3 Tools, materials and equipment for crop establishment operations 2.4 Seeds and germinated seeds 2.5 Operator's manual 2.6 PPE
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration and oral questioning 3.2 Direct observation 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the actual workplace or simulated environment provided by the institutions with TESDA registered programs.

UNIT OF COMPETENCY : CARE AND MAINTAIN RICE CROPS

UNIT CODE : CS-AFF611322

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to conduct preparatory activities, apply nutrient management, perform water management, and apply Integrated Pest Management, and perform post activities.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct preparatory activities	1.1 ***Tools and materials*** are prepared according to ***work requirement***. 1.2 ***Equipment*** is calibrated according to ***work requirement***. 1.3 Safety procedures is followed according to OSHS. 1.4 PPEs are selected according to ***work requirement***.	**TECHNOLOGY** 1.1 Tools, equipment and materials for work requirement 1.2 Nutrient management 1.3 Water management 1.4 Integrated pest management **ENVIRONMENT AND OTHER RELATED LAWS** 1.5 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 1.6 Awareness on RA 6969 - Toxic Substances and Hazardous and Nuclear Wastes Control **COMMUNICATION** 1.7 Manufacturer's manual	1.1 Preparing tools, materials and equipment 1.2 Calibrating equipment 1.3 Practicing OSHS 1,4 Wearing PPE
2. Conduct nutrient management	2.1 Soil is collected for sampling based on industry standard.	**SCIENCE** 2.1 Rice Morphology 2.2 Soil sampling	2.1 Collecting soil for sampling

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.2 ***Nutrient diagnostic support tools*** are used based on manufacturers manual. 2.3 Nutrient requirements of the rice crop are determined through visual observation. 2.4 Nutrient requirements of the rice crops are determined based on the result of nutrient diagnostic support tools. 2.5 ***Kind of fertilizer*** is selected based on visual observation and result of nutrient diagnostic support tools. 2.6 Amount of fertilizer is ***computed*** based on result of diagnostic support tools. 2.7 Fertilizer is applied based on visual observation and result of nutrient diagnostic support tools. 2.8 Recordkeeping is performed following industry procedure. 2.9 PPE are used following OSHS.	2.3 Nutrient requirements of rice crop 2.4 Right Element of fertilizer 2.5 Right timing of fertilizer application 2.5.1 Maturity of variety 2.5.2 Stages of the rice crop 2.5.3 Weather condition **TECHNOLOGY** 2.6 Nutrient diagnostic tools 2.6.1 Introduce 2.6.2 Importance 2.7 PalayCheck System **ENVIRONMENT AND OTHER RELATED LAWS** 2.8 PNS 141:2019 Good Agricultural Practices for Rice **MATHEMATICS** 2.9 Fertilizer computation	2.2 Practicing visual observation of deficiency symptoms 2.3 Using Nutrient Diagnostic support Tools 2.4 Selecting fertilizers 2.5 Applying right amount of fertilizer 2.6 Scheduling Fertilizer application
3. Perform water management	3.1 ***Water resources*** are identified based on locality. 3.2 Water level is checked based on growth stages of rice crops.	**SCIENCE** 3.1 Importance of water management on the different growth stages of rice crops 3.2 Water requirements on	3.1 Reading and interpreting the measuring instrument for water level 3.2 Assessing water level

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.3 Water needs is assessed based on ***climate condition***. 3.4 ***Water management strategy*** is applied based on the different growth stages. 3.5 Water level monitoring is conducted to observe the depth of water level.	the different growth stages 3.3 Symptoms of water stress on the different growth stages of rice. 3.4 Different Water resources **TECHNOLOGY** 3.5 Procedures of monitoring activities 3.6 Monitoring checklist 3.7 PalayCheck system **ENVIRONMENT AND OTHER RELATED LAWS** 3.8 Awareness on Philippine Clean Water Act of 2004 (Republic Act No. 9275) 3.9 Awareness on RA 10969 - Free Irrigation Service **MATHEMATICS** 3.10 Estimation of water level	3.3 Applying water management strategies 3.4 Employing water resources 3.5 Conducting monitoring activities
4. Apply Integrated Pest Management	4.1 Occurrence of ***pests and diseases*** are identified based on recognized rice agricultural system. 4.2 Pests and diseases damage is assessed based on recognized rice agricultural system. 4.3 Control of pests and diseases is applied based on ***IPM Strategies***.	**SCIENCE** 4.1 Classification of common rice pests and diseases 4.2 Classification of Natural enemies (Nes) 4.3 Integrated pest management concepts and principles 4.4 Knowledge on the origin and	4.1 Assessing occurrence of pests and diseases based on Palaycheck system 4.2 Identifying rice pest and diseases 4.3 Conducting AESA 4.4 Adopting IPM strategies and Management

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	4.4 Field monitoring is conducted following Agro ecosystem Analysis (AESA) procedure. 4.5 Action is taken to prevent further ***rice crop damages*** and losses based on recognized rice agricultural system. 4.6 PPEs are used following OSHS.	occurrence of a particular disease 4.5 Fundamental Concept of Disease Triangle **TECHNOLOGY** 4.6 Principle of Agro ecosystem Analysis (AESA) in monitoring pest and disease damage 4.7 Damage assessment using PalayCheck system 4.8 Management options for a particular pest/ disease (IPM) **ENVIRONMENT AND OTHER RELATED LAWS** 4.9 PNS 141:2019 Good Agricultural Practices for Rice 4.10 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 4.11 Awareness on RA 6969 - Toxic Substances and Hazardous and Nuclear Wastes Control	4.5 Applying right kind and dosage of pesticides
5. Conduct post activities	5.1 Recordkeeping is done following workplace procedures.	**TECHNOLOGY** 5.1 Proper wastes disposal	5.1 Practicing Good Housekeeping 5.2 Disposing wastes

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	5.2 Work area is cleaned following good housekeeping practices. 5.3 Wastes are disposed following waste management. 5.4 Equipment is cleaned and stored following workplace procedure.	**ENVIRONMENT AND OTHER RELATED LAWS** 5.2 Awareness on RA 9003 Solid Waste Management Act 5.3 5S **COMMUNICATION** 5.4 Record Keeping	5.3 Performing recordkeeping

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools	Tools may include: 1.1 Nutrient Management 1.1.1 Nutrient Diagnostic Support Tools 1.2 Water Management 1.2.1 Observation well 1.2.2 Meter stick 1.3 Pest Management 1.3.1 Catching net 1.3.2 Killing bottles 1.3.3 Rat bait
2. Materials	Materials may include: 2.1 Nutrient Management 2.1.1 Fertilizer 2.1.2 Fertilizer bag 2.2 Water Management 2.2.1 Fuel 2.2.2 Engine oil 2.3 Pest Management 2.3.1 Insect Trap 2.3.2 Herbicides 2.3.3 Molluscicides 2.3.4 Rodenticides 2.3.5 Fungicides 2.3.6 Insecticides
3. Equipment	Equipment may include: 3.1 Water Management 3.1.1 Water pump 3.2 Pest Management 3.2.1 Sprayer
4. Work requirement	Work requirement may include: 4.1 Nutrient management 4.2 Water management 4.3 Integrated pest management
5. Nutrient diagnostic support tools	Nutrient diagnostic support tools may include: 5.1 Minus-One Element Technique 5.2 Leaf Color Chart 5.3 Rice Crop Manager Advisory Service (electronic based)
6. Kind of fertilizer	Kind of fertilizer may include: 6.1 Organic fertilizer 6.2 Inorganic fertilizers
7. Fertilizer computation	Fertilizer computation may include:

VARIABLE	RANGE
	7.1 Ratio and proportion 7.2 Simple fertilizer computation
8. Water resources	Water resources may include: 8.1 National Irrigation Administration (NIA) Irrigation 8.2 Deep Well 8.3 Creek 8.4 River 8.5 Rain
9. Climate condition	Climate condition may include: 9.1 Wet 9.2 Dry
10. Water management strategy	Water management strategy may include: 10.1 Irrigation 10.2 Water flooding 10.3 Water draining 10.4 Alternate wetting and drying
11. Pests	Pests may include: 11.1 Insect pest 11.2 Weeds 11.3 Vertebrate pests (rats and birds) 11.4 Golden Apple Snail (GAS) 11.5 Nematode
12. Diseases	Diseases may include: 12.1 Fungal 12.2 Bacterial 12.3 Viral
13. IPM Strategies	IPM Strategies may include: 13.1 Cultural control 13.2 Biological control 13.3 Mechanical control 13.4 Chemical control
14. Rice crop damages	Rice crop damages may include: 14.1 Disease infections 14.2 Insect Infestations 14.3 Other crop damages

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted nutrient management. 1.1.1 Used nutrient diagnostic support tools. 1.1.2 Determined nutrient requirements of the rice crop. 1.1.3 Selected kind of fertilizer. 1.1.4 Computed the amount of fertilizer. 1.1.5 Applied fertilizer. 1.1.6 Performed recordkeeping. 1.2 Performed water management. 1.2.1 Checked water level. 1.2.2 Applied water management strategy. 1.2.3 Conducted water level monitoring. 1.3 Applied Integrated Pest Management. 1.3.1 Identified occurrence of pests and diseases. 1.3.2 Assessed pests and diseases damage. 1.3.3 Applied IPM strategies in controlling pests and diseases. 1.3.4 Conducted field monitoring. 1.3.5 Taken action to prevent further rice crop damages and losses. 1.3.6 Used PPE.
2. Resource Implications	The following resources MUST be provided: 2.1 Participatory Technology Demonstration Area 2.2 Storage area 2.3 Tools, materials and equipment for rice crop management operations 2.4 PalayCheck System Manual 2.5 PPE
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration and oral questioning 3.2 Direct observation 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the actual workplace or simulated environment provided by the institutions with TESDA registered programs.

UNIT OF COMPETENCY : **CONDUCT HARVEST AND POSTHARVEST OPERATION**

UNIT CODE : **CS-AFF611323**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to harvest rice and conduct postharvest activities such as harvesting, drying, cleaning and storing of rice grains.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare for harvest and post-harvest operations	1.1 ***Tools and materials*** are prepared based on work requirements. 1.2 ***Machines*** are pre-inspected based on work requirements. 1.3 Water is drained from the field before harvesting following recognized rice agricultural system. 1.4 ***Rice Drying Technology*** is inspected in accordance with operating procedures. 1.5 Storing facility is ***prepared*** based on recognized rice agricultural system. 1.6 Safety practices are applied based on OSHS.	**SCIENCE** 1.1 Advantages of draining water **TECHNOLOGY** 1.2 Rice drying technology 1.3 Storing facility 1.4 Manufacturer's manual 1.5 Pre-inspection procedure 1.6 Tools and materials **ENVIRONMENT AND OTHER RELATED LAWS AND ORDINANCES** 1.7 PNS 141:2019 Good Agricultural Practices for Rice 1.8 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof	1.1 Rice field inspection 1.2 Applying machine pre-inspection activities 1.3 Preparing tools and materials 1.4 Applying good housekeeping 1.5 Applying safety practices.
2. Harvest rice grain	2.1 ***Rice maturity*** is checked prior to harvesting based on recognized rice agricultural system.	**SCIENCE** 2.1 Identify the Maturity of Rice ready of harvest	2.1 Perform field inspection 2.2 Perform maturity test

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.2 Rice is harvested using mechanical rice harvester based on manufacturer's manual. 2.3 Rice is harvested using sickle based on industry practice. 2.4 Piling is performed following industry practice. 2.5 Threshing machine is operated following manufacturer's manual. 2.6 Bagging is done following industry practice. 2.7 ***PPEs*** are used as per work requirements.	**TECHNOLOGY** 2.2 Use of Harvesting Machine 2.3 PalayCheck System **ENVIRONMENT AND OTHER RELATED LAWS AND ORDINANCES** 2.4 PNS 141:2019 Good Agricultural Practices for Rice 2.5 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof **MATHEMATICS** 2.6 Estimation of Rice Maturity 2.7 Estimation of Moisture Content of the matured rice crop 2.8 Maturity indices percentage 2.8.1 For Mechanical 2.8.2 For Manual 2.9 Bagging procedure 2.10 PPEs **COMMUNICATION** 2.11 Use of Hand Signals during Machine Operation	2.3 Check moisture content 2.4 Perform rice harvesting 2.5 Operate Rice Combine Harvester 2.6 Operate Rice Thresher 2.7 Wearing PPEs
3. Perform post-harvest operations	3.1 Rice grains are dried using ***machines***.	**SCIENCE** 3.1 Rice Grain Drying Requirements 3.2 Drying Principles	3.1 Applying safety practices. 3.2 Communication Skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.2 Rice grain cleaning is done following standard operating procedures. 3.3 Rice grain moisture content is monitored based on industry procedures. 3.4 ***Impurities*** in the grains are removed based on recognized rice agricultural system. 3.5 Dried grains are bagged following industry procedure. 3.6 Bagged grains are stored based on recognized rice agricultural system.	3.3 Drying Characteristics 3.4 Moisture Content determination 3.5 Characteristics of storage area **TECHNOLOGY** 3.6 Rice Drying Operations for milling and seeds purposes 3.7 Inspect storage area 3.8 Use of moisture meter 3.9 Machine calibration 3.10 Use of Mechanical Dryer 3.11 Use of grain cleaner 3.12 Procedures of storing and stacking 3.13 Handling and packaging of palay **ENVIRONMENT AND OTHER RELATED LAWS AND** 3.14 Awareness on RA 11058 - An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations Thereof 3.15 Awareness on PD 17 Section 23 - Revising the Philippine Highway Act of Nineteen	3.3 Operating machine 3.4 Using tools and materials 3.5 Storing and stacking

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		Hundred Fifty Three **MATHEMATICS** 3.16 Scaling 3.17 Estimation 3.18 Calculation 3.19 Stack Lay-outing **COMMUNICATION** 3.20 FIFO Operation 3.21 Recordkeeping 3.22 Hand Signal	
4. Complete harvest and post activities	4.1 Good Housekeeping in is performed according to work requirements. 4.2 Record keeping is performed following industry procedure. 4.3 Wastes are disposed following waste management.	**TECHNOLOGY** 4.1 Good housekeeping 4.2 BLOWAF Checking of Machines **ENVIRONMENT AND OTHER RELATED LAWS** 4.3 Awareness on RA 6969 Toxic Substances and Hazardous and Nuclear Wastes **MATHEMATICS** 4.4 Calibration **COMMUNICATION** 4.5 Hand Signal 4.6 Recordkeeping	4.1 Conducting BLOWAF of Machines 4.2 Performing good housekeeping 4.3 Performing record keeping

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools	Tools may include: 1.1 Harvesting 1.1.1 Manual harvesting 1.1.1.1 Moisture Meter 1.1.1.2 Sickle 1.1.2 Mechanical Harvesting 1.1.2.1 Grease Gun 1.1.2.2 Wrenches 1.1.2.3 Moisture Meter 1.2 Post-Harvest 1.2.1 Drying 1.2.1.1 Grain Scoop 1.2.1.2 Shovel 1.2.1.3 Grain Turner
2. Materials	Materials may include: 2.1 Harvesting 2.1 Sacks 2.2 Twine 2.3 Sack Sewing Needle 2.2 Post-Harvest 2.2.1 Drying 2.2.1.1 Sacks 2.2.1.2 Fuel 2.2.2 Cleaning 2.2.2.1 Empty Sacks 2.2.2.2 Fuel 2.2.3 Storage 2.2.3.1 Pallets
3. Machines	Machines may include: 3.1 Harvesting 3.1.1 Mechanical Rice Harvester 3.2 Post-Harvest 3.2.1 Drying 3.2.1.1 Mechanical Dryer
4. Rice Drying Technology	Rice Drying Technology may include: 4.1 Solar Drying 4.2 Mechanical Drying

VARIABLE	RANGE
5. Preparation of storing facility	Preparation of storing facility may include: 5.1 Cleaning of Area 5.2 Installation of Pallets 5.3 Labels
6. Rice maturity	Rice maturity may include: 6.1 Grain Color 6.2 Moisture Content 6.3 Maturity Days
7. PPEs	PPEs may include: 7.1 Face Mask 7.2 Long Sleeve shirt 7.3 Hat 7.4 Earmuff 7.5 Vest 7.6 Safety Shoes 7.7 Long Pants
8. Impurities	Impurities may include: 8.1 Chaff 8.2 Stone 8.3 Straw 8.4 Rope 8.5 Weeds 8.6 Soil 8.7 Metals

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Prepared for harvest and post-harvest operations. 1.1.1 Pre-inspected machine. 1.2 Harvested rice grain. 1.2.1 Checked rice maturity. 1.2.2 Operated threshing machine. 1.3 Perform post-harvest operations. 1.3.1 Dried grains. 1.3.2 Cleaned rice grains. 1.3.3 Stored dried grains.
2. Resource Implications	The following resources MUST be provided: 2.1 Harvester 2.2 Drying facility 2.3 Tools and materials 2.4 Storage area 2.5 Rice field
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration and oral questioning 3.2 Direct observation 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the actual workplace or simulated environment provided by the institutions with TESDA registered programs.

GLOSSARY OF TERMS

1) BREEDER SEED	This is the seed of a new variety that has the highest purity and is produced, developed, controlled, and provided directly by breeders or their institutions for further multiplication
2) BROADCASTING	In agriculture, broadcasting is the process of scattering seeds or fertilizer evenly over an area.
3) CANALETS	are small furrows/canals usually at a depth of 7 - 10cm purposely used for draining excess water (water management) to control GAS (direct seeding) or maintaining water level at 2 - 3 cm depth Source: Pinoy Rice Knowledge Bank
4) CERTIFIED SEED	The progeny of foundation, registered, or certified seeds, handled to maintain sufficient varietal identity and purity, grown by selected farmers under prescribed conditions
5) FIELD CONDITIONING	Includes draining of water
6) FOUNDATION SEED	the progeny of the breeder seed, produced by trained officers of an agricultural station in conformity with regulated national standards and handled to maintain genetic purity and identity, and has undergone field and seed inspections to ensure conformity with standards
7) INTEGRATED PEST MANAGEMENT (IPM)	is the practice of selection, integration, and implementation of pest control method that combines cultural, biological, mechanical with chemical as the last option to improve decision-making process in controlling pests.
8) 15) HILLY	The contour lines are close together while they are wider apart on flat slopes.
9) PEST	Organisms living and growing in the field that can cause damage to rice crops and spread diseases. It includes insect pests, fungi, bacteria, virus, rodents, birds and weeds.
10) PLANTING GUIDE	Refers to any technology such as rope, that helps establish hill and row spacing of seedling during crop establishment.
11) REGISTERED SEED	The progeny of the foundation seed grown by selected farmers, handled to maintain genetic purity and identity, and has undergone field and seed inspections to ensure conformity with standards
12) RICE CROP MANAGER ADVISORY SERVICES (RCMAS)	A web and mobile-based platform for collecting farmer information and providing field specific information on crop and nutrient management to increase yields and income of rice farmers in the Philippines developed by International Rice Research Institute (IRRI).
13) SEED GERMINATION	Emergence of the seeds and the development of essential structures under favorable conditions

14) SEED GERMINATION TEST	It determines the maximum germination potential of a seed lot. A high quality seed should have at least 85% emergence in the germination test.
15) SEED INCUBATION	Means that the seeds are withdrawn from the water and kept in ventilated place, ate a temperature close to 30° C, until they germinate, usually after 24 to 36 hours (RiceHub)
16) SLOPING	An inclined or oblique direction or angle considered with reference to a vertical or horizontal plane. slanting form of direction.

ACKNOWLEDGEMENTS

The Technical Education and Skills Development Authority (TESDA) is particularly grateful for the valuable technical support provided by the following industry stakeholders for the review and development of this Competency Standards. The time and inputs generously given during this undertaking are also highly appreciated and recognized as they made significant contributions to the constitution of this CS.

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