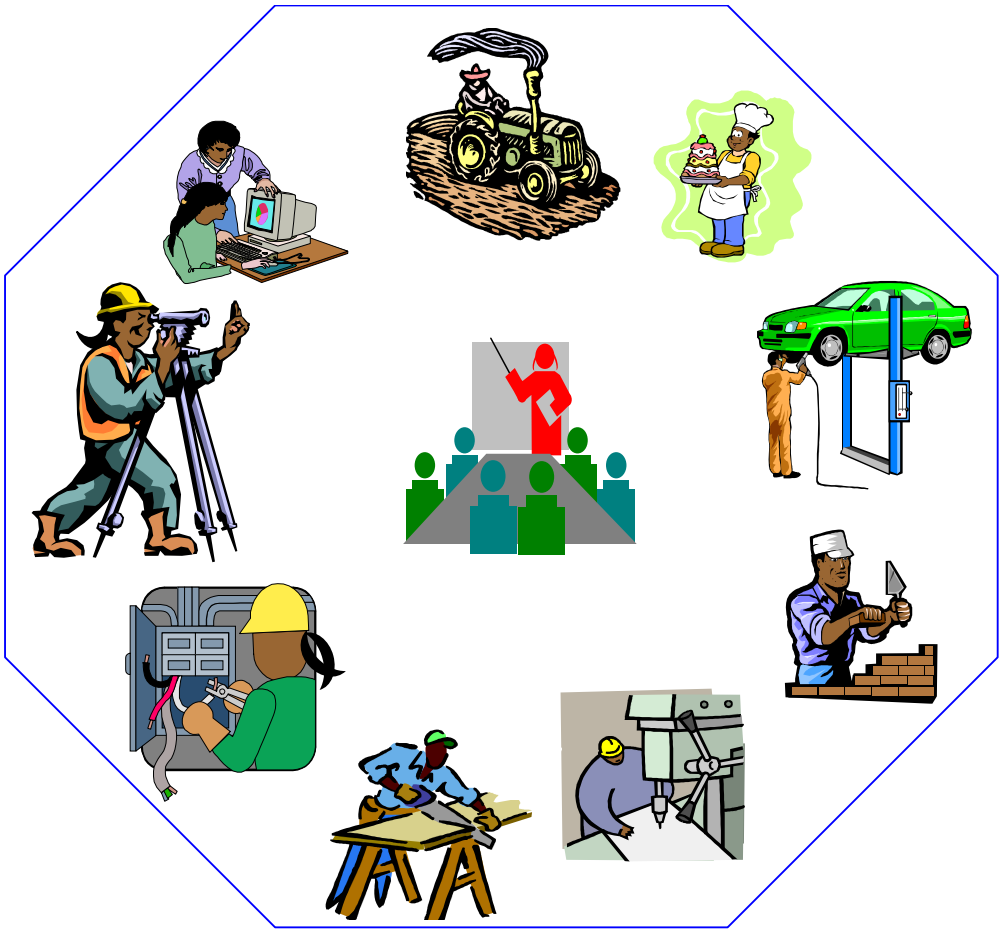
Federal Democratic Republic of Ethiopia

OCCUPATIONAL STANDARD

RUBBER TREE PLANTATION & DEVELOPMENT

NTQF Level II



Ministry of Education
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Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopian Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopia Occupational Standard which comprised of Units of Competence.

A Unit Title describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title and NTQF level
- Unit title
- Unit code
- Unit descriptor
- Elements and Performance criteria
- Variables and Range
- Evidence guide

Together all the parts of a Unit Title guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the occupation with all the key components of a Unit Title:

- chart with an overview of all Units of Competence for the respective level including the Unit Codes and the Unit Titles
- contents of each Unit Title(competence standard)
- occupational map providing the Technical and Vocational Education and Training (TVET) providers with information and important requirements to consider when designing training programs for this standards and for the individual, a career path

UNIT OF COMPETENCE CHART

Occupational Standard: Rubber Tree Plantation & Development		
Occupational Code: IND RPD		
NTQF Level II		
IND RPD2 01 0616 Follow OHS and Environmental Policy and Procedures	IND RPD2 02 0616 Apply Nursery Practice	IND RPD2 03 0616 Design and Prepare Growing Media
IND RPD2 04 0616 Detect, Protect and Control Rubber Tree Pest, Weed and Disease	IND RPD2 05 0616 Perform Rubber Trees Tending Operations	IND RPD2 06 0616 Apply Ergonomics of the Work Environment
IND RPD2 07 0616 Assist Rubber Tree Plantation Establishment	IND RPD2 08 0616 Assist Preparation of Organic Fertilizers	IND RPD2 09 0616 Implement Indigenous Soil and Water Conservation Practices
IND RPD2 10 0616 Detect Forest Fires	IND RPD2 11 0616 Apply Agro-forestry Techniques	IND RPD2 12 0616 Conduct Erosion and Sediment Control Activities
IND RPD2 13 0616 Maintain Rubber Tree Tools and Equipment	IND RPD2 14 0616 Measure Rubber Trees	IND RPD2 15 0616 Apply Rubber Tree Latex Harvesting Technologies
IND RPD2 16 0616 Apply Post-Harvest Handling Techniques of Rubber Tree Products	IND RPD2 17 0616 Record and Organize Data	IND RPD2 18 0616 Undertake Propagation Activities
IND RPD2 19 0616 Implement a Propagation Plan	IND RPD2 20 0616 Participate in Workplace Communication	IND RPD2 21 0616 Work in Team Environment
IND RPD2 22 0616 Develop Business Practice	IND RPD2 23 0616 Standardize and Sustain 3S	

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Follow OHS and Environmental Policy and Procedures**
Unit Code	IND RPD2 01 0616
Unit Descriptor	This competence standard covers the process of carrying out enterprise Occupational Health and Safety (OHS) policies and procedures. The unit is also concerned with OHS responsibilities of employees with supervisory responsibilities. It requires the ability to work in accordance with workplace procedures in hazard identification and risk control, carry out safe practices during work operations, and participate in arrangements for maintaining the health and safety of all people in the workplace. Carrying out OHS policies and procedures requires knowledge of employee and employer responsibilities under the OHS Act, enterprise procedures relating to hazards, fires, emergencies, accidents and risk control, and OHS signs and symbols relevant to area of work. It involves awareness of safe handling of farm hand tools, latex harvesting equipment and Chemical handling.

Elements	Performance Criteria
1. Identify OHS legislative requirements	1.1 Applicable ***OHS legislative requirements*** (appropriate workplace procedure) relevant to own work, role and responsibilities, OHS are identified and explained by Ministry of Labour and Social Affairs (MoLSA) of Ethiopia. 1.2 ***Duty of care requirements*** are identified. 1.3 Own responsibilities are identified and explained to comply with ***safe work practices***. 1.4 Employee responsibilities prescribed in enterprise OHS policies and procedures (including ***emergency*** procedures) are identified and carried out.
2. Identify and understand rights and responsibilities of employer and employee	2.1. Rights and responsibilities of employer and employee are identified. 2.2. Responsibilities and duties of employees are understood and demonstrated in day to day actions. 2.3. Minimum legal requirements for such areas as Health and Safety at Work, and minimum standards and conditions related to hours, and the treatment of people in the workplace are understood.
3. Follow workplace procedures for hazard identification and risk control	3.1. ***Hazards*** in the work area are recognised and reported to ***designated personnel*** according to ***workplace procedures.*** 3.2. OHS legislative requirements, workplace procedures and work instructions are followed to ***control risks***.

	3.3. Safe work practices are complied. 3.4. Duty of care requirements is implemented. 3.5. ***Job Safety Analysis (JSA)*** sheets are completed according to work requirements, including ***hazard identification*** and ***risk assessment***. 3.6. ***Personal protective materials and equipment*** are used and maintained according to work requirements.
4. Assist in workplace hazard identification and risk control	4.1 Information regarding hazard identification and risk control is provided and explained regularly. 4.2 Hazards in the workplace are recognized and reported to designated personnel according to enterprise procedures. 4.3 Assessment of risk associated with identified hazards is made in accordance with enterprise procedures. 4.4 Workplace procedures and work instructions for controlling risks are followed accurately. 4.5 ***Risks*** to fellow workers, other people and animals are recognized and action is taken to eliminate or reduce them. 4.6 Safety training is undertaken or provided as necessary.
5. Observe safe work practices during work operations	5.1 Work requiring Personal Protective Equipment (PPE) is identified, used, maintained and stored according to enterprise procedures. 5.2 Basic safety checks on all machinery and equipment are undertaken before operation according to enterprise procedures. 5.3 Hazards associated with handling of hazardous substances are identified and notified, and risk assessed in accordance with enterprise procedures and OHS requirements. 5.4 Noise hazards are identified and notified, and risk assessed in accordance with enterprise procedures and OHS requirements. 5.5 Manual handling risks are assessed prior to activity, and work carried out according to currently recommended safe practice. 5.6 Information on OHS for specific work operations is accessed as required.
6. Identify OHS incident response procedures	6.1. Individuals have input into ongoing monitoring and reporting on all aspects of workplace safety. 6.2. OHS issues are raised with designated personnel in accordance with enterprise procedures and relevant OHS legislation.

	6.3. Contributions to participative arrangements in the workplace are made within organizational procedures and scope of responsibilities and competencies. 6.4. Suggestions are made to assist the development of effective solutions to control the level of risk with enterprise activities. 6.5. Procedures are identified for accessing first aid. 6.6. Requirements are identified and demonstrated for the selection and use of relevant personal protective materials and Equipment.
7. Contribute to the management of OHS	7.1. OHS issues are raised with designated personnel according to workplace procedures and relevant OHS legislation. 7.2. Contribute to ***Participative arrangements*** for OHS management in the workplace within organisational procedures and scope of responsibilities and competencies.
8. Contribute to the management of workplace environmental issues	8.1. Environmental issues are raised with designated personnel according to workplace procedures and relevant ***environmental requirements*** and legislation. 8.2. Contribute to Participative arrangements for environmental management in the workplace within organisational procedures and scope of responsibilities and competencies. 8.3. All OHS issues, risks and hazards are recorded and reported to designated personnel.

Variable	**Range**
OHS legislative requirements	May include: • Ethiopian standards (e.g. ESA) • duty of care • health and safety representatives and supervisors • industry OHS standards and guidelines • licences, tickets or certificates of competency • national safety standards • OHS and Welfare Acts and regulations • safety codes of practice
Duty of care requirements	May include: • own responsibilities to comply with safe work practices: • activities that require licenses • tickets • certificates of competency • relevant state OHS requirements, including: ➢ employers and self-employed persons

	➢ inspectors ➢ persons in control of the work site
Safe work practices	May include: • Access to site amenities: • drinking water • toilets • clean air/ventilation • appropriate warning labels on cabinets and enclosures • avoiding coming into contact with chemicals, breathing in fumes and vapours, and digesting such materials • being aware of what to do and how to treat any potential accident • drugs and alcohol at work • general requirements for: • safe use of plant and equipment • use of personal protective materials, equipment and clothing • housekeeping to ensure a clean, tidy and safe work area • hazardous solvents or chemicals left on site at the completion of the work • preventing bullying and harassment relevant Ethiopian standards (use appropriate workplace procedure)of required health and safety precautions • follow non-smoking in working areas • specific organisational safety requirements • storing and removing debris • Using a wet cleaning process and making sure all solvent residues are disposed of according to environmental policy.
Emergency	May include: • Electrocution, fire, flood, chemical spills, storms and cyclones, gases in confined spaces, gas leaks, serious injury associated with tractors, machinery and equipment, animals, vehicles, firearms and grain suffocation
Hazards	May include: • Equipment and machinery operation and maintenance • (including powered tools), vehicles, noise, chemicals, gases, • dust, manual handling, plants and animals/livestock, solar • radiation, electricity, overhead hazards including power lines, confined spaces, tripping hazards, water bodies, firearms, explosives, damaged or broken structures, damaged or worn equipment, items blocking exits, items of equipment in areas used for access, poor surfaces, and spillages and breakages.
Designated personnel	May include: • management

	• managers • OHS personnel • other persons authorised or nominated by the enterprise or industry to: ➢ approve specified work ➢ direct specified work ➢ inspect specified work ➢ perform specified work ➢ supervisors ➢ Team leaders.
Workplace procedures	May include: • assessing risks • consulting and stewardship • preventing and controlling hazards • emergency responses to: • accidents • emergencies • fires • identifying hazards • reporting OHS issues • resolving OHS issues • Using personal protective Equipment.
Control Risks	• three steps in risk management process: • identify hazard • assess risk • Implement control methods.
Job Safety Analysis (JSA)	May include: • health, safety and environmental hazards • each new workplace or worksite situation • sheets to record the steps in the risk management process: • assessment • identification • control • Primary application of assessment.
Hazard identification	May include: • checking Equipment and work area: • before work commences • during work or • periodic functionality test • housekeeping • reviewing accident or incident records • Workplace inspections.
Risk assessment	May include: • a scale: • low • medium

	• high • awareness of likelihood and consequence factors • JSA.
Personal protective materials and equipment	May include: • aprons • arm guards • breathing apparatus • dust masks • respirators • clothing: • boots • gloves • overalls • Rain coat e • Eye protection • face and head protection: • face masks • goggles • helmets • gloves • hard hat • hearing protection • protective, well fitting clothing • respiratory protection • safety footwear
Risks	May include: • assessing the risks involved • consulting and reporting with regard to ensuring the involvement of relevant workers • controlling the hazard • identifying hazards • Reviewing to identify change or improvement.
Participative arrangements	May include: • committees: • consultative • OHS • planning • purchasing • concerns • health and safety representatives • OHS informal meetings • reports • requests • suggestions
Environmental requirements	May include: • work-flow based workshop/office/workplace layouts

	• clean-up management • dust • noise and waste management.
Measures for controlling hazards and risk	May include: • administrative control • elimination • engineering control • isolation • personal protective equipment • Substitution.

Evidence Guide	
Critical Aspects of Competence	Demonstrate skill and knowledge of competencies to: • OHS legislative and safety requirements for rubber tree development work, including duty of care • the range of common rubber tree development hazards and procedures for the assessment of risk and application of the hierarchy of control • OHS communication processes, information and documentation including the role of OHS committees and representatives, the meaning of common safety signs and symbols, and procedures for reporting hazards, incidents and injuries • general procedures for responding to incidents and emergencies, including evacuation, first aid, fire safety Equipment and personal protective Equipment • recognise and report hazards to designated personnel • follow workplace procedures necessary to control risks in the workplace • Safely handle of chemicals and environment.
Underpinning Knowledge and Attitudes	Demonstrates knowledge and understanding of: • employee and employer responsibilities under the OHS Act • enterprise procedures relating to hazards, fires, emergencies, accidents, and risk control • OHS signs and symbols relevant to area of work.
Underpinning Skills	Demonstrate Skills in: • apply workplace procedures for hazard identification and risk control • ability to direct others in identifying hazards, controlling risks, and following other OHS enterprise requirements • ability to read safety warning signs • observe and direct others to follow safe working operations • participate in arrangements for maintaining the health and safety of all people in the workplace • accurately record incidents in the work area in accordance with OHS legal requirements

	• communicate ideas and information by raising OHS issues verbally with other employees • collect, analyze and organize information by recognizing hazards, keeping maintenance records and reporting accidents and dangerous occurrences • plan and organize activities to carry out OHS procedures • work with others and in teams in carrying out OHS procedures • use mathematical ideas and techniques to determine liquids and weights used in the workplace
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Apply Nursery Practice**
Unit Code	IND RPD2 02 0616
Unit Descriptor	This competency standard covers the process of tending containerized nursery plants. Plant maintenance is likely to be carried out under routine supervision with intermittent checking. Responsibility for some roles and co-ordination within a team may be required. Competency is demonstrated by the application of knowledge and skills to a range of plant maintenance tasks. Maintenance of nursery plants usually follows established enterprise guidelines.

Element	Performance Criteria
1. Maintain the nursery environment	1.1 OHS hazards in the nursery environment are identified, risks assessed and reported to the supervisor. 1.2 Plant growth and health requirements are clarified with the supervisor. 1.3 ***Irrigation system components*** are serviced and faulty parts are repaired or replaced. 1.4 ***Performance parameters*** of the irrigation system are checked to ensure optimum performance. 1.5 Temperature controls are monitored to ensure specified temperatures are maintained. 1.6 ***Nursery hygiene practices*** are followed to minimize risk of contamination.
2. Maintain nursery plants	2.1 Suitable ***Personal Protective Equipment (PPE)*** is selected, used and maintained. 2.2 ***Common problems*** in ***nursery plants*** are recognized, and rectified and/or reported to the supervisor. 2.3 ***Tools and equipment*** are selected and used for plant maintenance. 2.4 ***Treatments*** are applied to assist plant growth as directed by the supervisor. 2.5 ***Water is applied*** in the quantity and method specified by ***enterprise work procedures***. 2.6 Nursery operations are undertaken according to ***OHS requirements***.
3. Complete nursery plant maintenance operations	3.1 ***Workplace information*** is recorded in the appropriate format. 3.*2* ***Waste*** is collected and disposed of or recycled to minimize damage to the ***external environment***.

	3.3 Tools and equipment are cleaned and stored according to enterprise work procedures.

Variable	Range
Irrigation system components	May include: • Pumps, lines, pipes, sprinklers, sprinkler heads, solenoids, filters, controllers, sprayers and drippers.
Performance parameters	May include: • Identifying dry spots and blockages, water dumping, abnormal water flow, and leaking heads, lines and pipes.
Nursery hygiene practices	May include: • Practices removing weeds, dead or diseased plant material; washing the work area on transfer of plants; disinfecting tools, equipment and work areas, and using foot baths on entry to different work areas.
PPE	May include: • Hat, boots, overalls, gloves, sunscreen lotion, goggles, face mask, respirator, spray jacket or suit.
Common problems	May include: • Dehydration, pests, diseases, nutrient deficiencies and deformed plants.
Nursery plants	May include: • Containerized, balled and bagged, in-ground, aquatic, stock plants, cuttings and rootling.
Tools and equipment	May include: • Secateurs, water spray containers, dibblers, sprayers, plant supports, ties and rubbish bins.
Treatments	May include: • Pesticides, fungicides, fertilizer, mulching, removing weeds, removing dead material, tip pruning, formative pruning, aeration, staking, tying, spacing and thinning.
Applying water	May include: • Water may be applied manually or by operating the irrigation system.
Enterprise work procedures	May include: • Work procedures will be based on sound horticultural principles and practices and may include supervisors oral or written instructions, plant care program, enterprise Standard Operating Procedures (SOPs), specifications, production schedules, routine maintenance schedules, work notes, product labels, and Material Safety Data Sheets (MSDSs); Integrated Pest Management (IPM) programs; manufacturers service specifications and operators manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.
OHS requirements	May include identifying hazards, assessing and reporting risks, cleaning, maintaining and storing tools and equipment, appropriate use of personal protective equipment including

	sun protection, safe operation of tools and equipment, safe handling, use and storage of chemicals and hazardous substances, correct manual handling, basic first aid, personal hygiene and reporting problems to supervisors.
Workplace information	May include records may include environmental parameters, date of treatments, type of treatment and rate of treatment.
Waste	May include: • Left over treatments, unused containers, plant debris or faulty irrigation components.
External environment	May include: • Environmental implications may include the contamination of off-site ground water or soils from solids, nursery debris, nutrients or chemicals.

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to : • Maintain nursery environment • apply daily water requirements • treat plants and record workplace information
Underpinning Knowledge and Attitudes	Demonstrates knowledge and understanding of: • environmental requirements of a range of containerized plants growing in a nursery setting • applied understanding of the importance of hygiene and quality control when tending nursery plants • common problems that may occur with containerized plants in a controlled environment and their treatment • principles and operations of a range of irrigation systems used in nurseries • methods of disposing of waste to minimize damage to the external environment
Underpinning Skills	Demonstrates skills to: • participate in teams and co-coordinate work activities with other members of the work team and contribute to team objectives • read and interpret enterprise work procedures • communicate ideas and information effectively with team members and supervisor • apply mathematical ideas and techniques to measure quantities and calibrate spray equipment and determining quantities and application rates for treatment of nursery plants • minimize noise, dust and water run-off to prevent nuisance-level environmental disturbance • collect, analyze and organize information • Enterprise work procedures, such as a daily watering plan, should be consulted, interpreted and applied to co-ordinate plant maintenance activities with further clarification sought from the supervisor where necessary.

	• plan and organize activities, materials, tools, equipment and work activities for daily plant maintenance routines • solve problems relating to maintenance of the nursery environment, the nursery plants, treatments, watering, tools and equipment, workplace safety and other team members may arise during the maintenance of nursery plants • use of technology in the preparation, use and maintenance of horticultural equipment and machinery
Resource Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Methods of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • interview /Questioning/ Written exam/test on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Design and Prepare Growing Media**
Unit Code	IND RPD2 03 0616
Unit Descriptor	This competency standard covers the process of determining the requirements of a growing media for various plants, and preparing and storing the media in accordance with the production specifications. This competency standard is likely to be undertaken without supervision. General guidance may be sought. Responsibility for and limited organization of the work of others in media preparation and storage may be involved. Designing, preparing and storing growing media requires a broad range of skills, and involves the application of extensive knowledge in some areas including nutrition requirements and growing media properties.

Element	Performance Criteria
1. Research specifications of growing media	1.1 Various ***media components*** are investigated for specific plant requirements. 1.2 Components of a ***growing media*** are determined by plant requirements and accepted industry practice. 1.3 ***Nutrient requirements*** are determined for growing period. 1.4 Different sources of nutrients are investigated for their suitability. 1.5 Growing media analyzed for ***chemical, physical and biological characteristics*** to determine suitability for plants. 1.6 ***Sterilization*** methods of the growing media are determined. 1.7 Growing media composition established.
2. Prepare and store growing media	2.1 Work is undertaken according to OHS legislation and codes of practice requirements. 2.2 Required ***equipment*** is maintained in a safe, clean and effective condition. 2.3 Components are stored in a safe and hygienic manner and in a non-contaminated environment. 2.4 Components are identified and weighed, mixed and incorporated into the growing media in accordance with ***production requirements***. 2.5 Waste is handled and disposed of safely in accordance with relevant legislation and OHS requirements. 2.6 Work is undertaken according to OHS legislation and codes of practice requirements.

	2.7 Media is stored in safe and hygienic manner in accordance with ***enterprise standards***. 2.8 Records are kept in accordance with enterprise standards.

Variable	Range
Media components	May include: • Organic or inorganic materials that provide an anchor for the root system of the plant, and make available nutrients either directly or indirectly to the root zone. These materials would be compatible to plant health.
Growing media	May include: • A growing media provides water, air and nutrients through the root system to the plants depending on the physical, chemical and biological properties of the media. Each plant may require different components, and there may be a variation in those requirements according to the growth cycle of the plant.
Nutrient requirements	May include: • Plants require different nutrient levels at different stages of growth. These nutrients include air, water, macro-nutrients (Nitrogen, Phosphorous and Potassium), and micro-nutrients and trace elements. Nutrient requirements might be determined by plant analysis, by experience and experimenting, or by accessing information from research papers.
Chemical, physical and biological characteristics	May include: • Physical characteristics may include colour, texture, structure, and any impermeable layer that may exist. • Chemical characteristics may include pH, salinity, free lime and nutrient content. • Biological characteristics may include decaying plant material, humus and micro biotic content.
Sterilization	May include: • Destroy soil or media borne pathogens known to be harmful to plants or seedlings. The acceptable techniques may include high temperature or chemicals.
Equipment	May include: • This will vary in size depending on the extent of the operation. The equipment will range from wheelbarrows and shovels to bobcats and front end loaders. Weighing and volume measuring apparatus will also be necessary.
Production requirement	May include: • The production requirement is the recipe of component materials that provides the media with the physical, chemical and biological characteristics required for the particular plant to grow.

Enterprise standards	May include: • Enterprise standards constitute the normal practice for storage of materials. In this instance, it would include direction on OHS, equipment use, hygiene and maintenance of product, and recordkeeping guidelines.

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to : • research and identify the requirements of a growing media to satisfy the physical, chemical and biological needs of particular plants • describe requirements of a growing media • mix the growing media from its constituent components in a safe and accurate manner, and to a level of hygiene required by the particular plants
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • requirements of a growing media • ingredients used in the preparation of growing media • properties of the various ingredients used in the preparation of the growing media • physical, chemical and biological characteristics required of the media • plant nutrition • hygiene in the preparation and storage of the media • alternative methods of incorporating ingredients into a growing media • volume and weight determination • OHS requirements in relation to chemical use.
Underpinning Skills	Demonstrate skills in: • collect and analyze data • interpret published research and historical records to identify acceptable media parameters • interpret chemical labels • record and store information • weigh and measure volumes • operate machinery • co-ordinate own activities • determine requirements and schedules of contractors and other work colleagues
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Detect, Protect and Control Rubber Tree pest, Weed and Disease**
Unit Code	IND RPD2 04 0616
Unit Descriptor	This unit of competence covers application of preventive and controlling mechanism to detect, protect and control Rubber Tree pest and diseases.

Element	Performance Criteria
1. Prepare requirements	1.1 ***Organizational occupational health and safety*** procedures, practices, policies, and precautions are observed and followed. 1.2 ***Disease, weed and pest*** surveillance is conducted according to disease, weed and pest control work procedures. 1.3 Important disease, weed and pest are identified according to disease, weed and pest control work procedures..
2. Apply preventive and / or control mechanism	2.1 Organizational occupational health and safety procedures, practices, policies, and precautions are observed and followed. 2.2 Preventive techniques are identified to protect pest, weed and disease occurrence in Rubber Tree according to Rubber Tree pest, weed and disease prevention guidelines 2.3 Control mechanisms are applied to control pest, weed and disease in Rubber Tree according to Rubber Tree pest, weed and disease control guidelines by using appropriate ***tools and equipments*** 2.4 Monitoring and evaluation are conducted according to the assessment procedures by accurate ***information***.

Variable	Range
Occupational Health & safety	May include: • The use of personal protective equipment and clothing • Safety equipment • First aid equipment • Rubber Tree pest, weed and disease fighting equipment • Hazard and risk control • Elimination of hazardous materials and substances • Appropriate fitness for the task
Disease, weed and pest	May include: • those organisms that affects the normal growths of the Rubber Tree • Abnormalities caused by biotic and a biotic factor.

Tools and equipments	May include: • Chemicals, safety equipments,
Information	May include: • Organizational rules, regulation and guidelines • Internet, related books and related materials • Technical manuals • sharing best practice • Virtual library • Workplace guidelines • Recorded documents/logo/history

Evidence Guide	
Critical Aspects of competence	A candidate must able to demonstrate the ability to : • Comply with applicable licensing or certification requirements • Effectively communicate and work safely with others in the work area • Efficiently follow Rubber Tree disease, weed and pest prevention and control mechanisms in accordance with environmental legislation and workplace procedures
Underpinning Knowledge	Demonstrate Knowledge of: • Knowledge of disease, weed and pest detection and identification • skill of implementing technical know how • Knowledge of implementing organizational rules, regulation and guidelines.
Underpinning Skills	Demonstrate Skills to: • prepare requirements • Apply preventive and / or control mechanism
Resource Implication	The following resources must be provided. • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Method of Assessment	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Perform Rubber Trees Tending Operations**
Unit Code	IND RPD2 05 0616
Unit Descriptor	This unit specifies the outcomes required to undertake tree planting operations by hand. It includes the selection and planting of suitable tree stock, and use and maintenance of equipment. This unit supports the attainment of skills and knowledge required for competent workplace performance in forest and forest products operations of all sizes. The unit applies to a forest environment and involves application of skills and knowledge at a production worker level.

Element	Performance Criteria
1. Prepare for planting operations	1.1 Applicable Occupational Health and Safety (OHS),legislative, organizational and ***environmental requirements*** relevant to planting trees by hand are identified and complied with. 1.2 ***Planting requirements*** and ***factors*** are identified from work order and applied in accordance with site and quality control requirements. 1.3 ***Equipment*** appropriate to work requirements is selected and checked for operational effectiveness in accordance with manufacturer's recommendations. 1.4 Potential and existing risks, hazards and site conditions are identified and assessed in accordance with OHS requirements. 1.5 Planting stock is appropriately stored in accordance with operational requirements. 1.6 ***Communication*** with others is established and maintained in accordance with OHS requirements.
2. Plant forest trees	2.1 Plant site is ***assessed*** for suitability and ***prepared*** in accordance with tree stock and work order requirements. 2.2 Tree stock is selected and ***planted*** in accordance with production target, quality, safety and specific job requirements. 2.3 Work methods and patterns are selected to suit particular operation and make efficient use of equipment and available time and resources. 2.4 ***Problems*** are identified and resolved in accordance with site procedures. 2.5 Equipment is maintained and stored in accordance with manufacturer's recommendations and workplace procedures.

Variable	Range
Environmental requirements	May include: • the use of personal protective equipment and clothing • safety equipment • first aid equipment • firefighting equipment • hazard and risk control • elimination of hazardous materials and substances • safe forest practices including required actions relating to • forest fire • manual handling including shifting, lifting and carrying • award and enterprise agreements • industrial relations • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care • heritage and traditional land holding issues • legal, organizational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OHS, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines)
Planting requirements	May include planting site requirements, and examination of stock sampling, examination and assessment criteria
Factors	May include planting depth, spacing, root placement, firmed vertical and undamaged
Equipment	May include spade, planting frame, harness, box seedlings, auger, and personal protective equipment
Communication	May include verbal and non-verbal language, constructive feedback, active listening, questioning to clarify and confirm understanding, use of positive, confident and cooperative language, use of language and concepts appropriate to individual social and cultural differences, control of tone of voice and body language, and systems between the driver and planter
Assessed	May include checking for appropriate atmosphere moisture content and season, and appropriate spacing and growth suitability for each tree
Prepared	May include hole depth, width, cultivation, potiputki, planting bag

Planted	May include minimal handling of tree stock to minimize foliage and root damage, and monitoring planting tonsure quality
Problems	May include: • equipment faults and malfunctions, quality of stock, unsuitability of stock, common diseases, pests, nutritional deficiencies, communication misunderstandings, environmental issues or damage, production quality and safety

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to : • Safely and efficiently plant trees by hand in accordance with organizational and environmental requirements • Comply with applicable legislative and regulatory requirements and codes of practice, including OHS, environmental and organizational policies and procedures, relevant to planting trees by hand • Communicate effectively and work safely with others in the work setting • Efficiently plant tree stock by hand with minimal handling and adapting work methods or patterns to suit particular operation • identify and resolve problems accurately including potential site or equipment hazards, unsuitable planting stock, pests, disease and nutritional deficiencies
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • basic knowledge and understanding of applicable legislation, regulations, standards and codes of practice relevant to planting trees by hand • organizational and site standards, requirements, policies and procedures for planting trees by hand • principles of cultural diversity and access and equity • environmental protection requirements, including the safe disposal of waste material • established communication channels and protocols in the workplace including communication systems between the planter and driver • problem identification and resolution • types of tools and equipment and procedures for their use, operation and maintenance • typical stock defects including pests, diseases and nutritional deficiencies • techniques for operation in forest settings • appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks • procedures for recording and reporting workplace information

Underpinning Skills	Demonstrates skills to: • comply with site, OHS and environmental legislation, regulations, standards, codes of practice and established safe practices and procedures for planting trees by hand • review and accurately identify work requirements • use and maintain relevant planting equipment • identify problems and equipment faults and demonstrate appropriate response procedures • use appropriate communication and interpersonal techniques with colleagues and others • accurately locate, record and report information • accurately recognize common diseases, pests and nutritional deficiencies • efficiently and safely select and handle tree stock • Communicate ideas and information to confirm work requirements, and to convey information and requests to colleagues about tree planting operations • Collect, analyze and organize information to undertake tree planting • Plan and organize activities in the correct sequence for tree planting operations to be completed within the designated timeframes • apply communication and interpersonal techniques to maximize confidence, safety and productivity during tree planting operations • Apply mathematical ideas and techniques to complete tasks and estimating tools, equipment and stock requirements • Solve problems by establishing safe and effective tree planting processes which anticipate likely problems to avoid wastage and downtime
Resources Implication	The following resources must be provided. • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Methods of Assessment	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competency is to be assessed in the workplace or realistically simulated workplace area.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Apply Ergonomics of the Work Environment**
Unit Code	IND RPD2 06 0616
Unit Descriptor	This unit of competence covers skill, knowledge & attitude of applying ergonomics rules and procedures in order to create worthy working and living situation for forest workers. It requires the ability to understand the required physical work load and physical working capacity for different forestry operation. It also include energy balance and nutrition, work posture, heat stress, health and hygiene, noise and vibration, appropriate technology and labor, motivation and work organization, design of work system and safety and accidents.

Element	Performance Criteria
1. Understand Physical work load and physical working capacity	1.1 ***Physical work load*** and ***physical work capacity*** for forest operations are identified. 1.2 Daily ***energy requirements*** for various occupations are identified.
2. Determine energy balance and nutrition, health and hygiene procedures postural	2.1 The effect of body weight and ***nutrition*** on energy requirement are determined. 2.2 ***Health and hygiene*** that are needed for the various physical work load and physical work capacity are undertaken.
3. Apply work posture, heat stress, noise and vibration reduction measures	3.1 Appropriate measures for ***posture*** maintenance & ***heat stress*** reduction 3.2 ***Noise*** and ***vibration*** mitigation in a work place are applied.
4. Apply appropriate technology and labor	4.1 ***Appropriate technologies*** and labor in accordance with the working environment are identified. 4.2 Technologies and labor in accordance with the working environment are applied.
5. Design the required work system, safety and accidents reduction methods.	5.1 Steps in ergonomic ***system design*** are developed. 5.2 Organizational safety procedure and ***accident*** reduction mechanisms are applied.
6. Motivation and work organization	6.1 Appropriate ergonomic system design that enhance ***motivation*** of worker are applied. 6.2 Tasks such as space, privacy, environmental control, supportive furnishings and utilities that promote the interaction between various users and that developed good ***working environment*** are applied.

Variable	Range
Physical work load	May include: • When a human being is physically active, the muscles involved use oxygen and nutrients, which are delivered by the blood and transformed in to mechanical energy, heat and other west products.
Physical work capacity	May include: • The amount of physical work a worker can afford to exert without overloading himself depends on his physical working capacity.
Energy requirements	May include: • The daily amount of energy needed to exert physical work load.
Nutrition	May include: • The nutritional value of the food depends not only on its composition and quantity, but also on the distribution of meals over the working day, particularly in the case of heavy physical work.
Health and hygiene	• The favorable living conditions (health situations) in working environment, such as the quality and quantity of the food, the quality of drinking water, housing and living habits and the working conditions.
Posture	May include: • The selection and placement of furniture and equipment will also determine the postural requirements in a workplace.
Heat stress	May include: • The aggregate of environmental factors, which together with the heat production from the working muscles constitute the total heat exposure of the human body.
Noise	May include: • In ergonomics which is the reduction of all sound which can result in hearing impairment or otherwise be harmful to health, or dangerous.
Vibration	May include: • Is more or less regular displacement of a mass around certain equilibrium
Appropriate technologies	May include: • The highest contribution to sustainable socio-economical development under the given circumstances.
System design	May include: • Technical, organizational, human and personnel aspects are developed simultaneously and fitted together.
Accident	May include: • Is unwanted, unexpected occurrence mostly caused by an unsafe action and/or an unsafe situation leading to injury or death and/or delay and damage.

Motivation	May include: • The total of all the driving forces and passions stimulating a person to a more or less intensive behavior often activated by external factors or needs.
Working environment	May include the circumstances, conditions, and influences that affect the behavior and performance of people in the workplace; physical factors such as noise, vibration, lighting, temperature humidity and air flow as they factor in job design.

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to : • apply workplace information on health and safety policies and procedures relating to own work • Check regularly own work area to identify health and safety hazards. • Recognize and take action to remove hazards according to workplace procedure and level of responsibility • Report hazards according to workplace procedure. • Follow safe work procedures. • demonstrate procedures used to control OHS risks • Participate in arrangements to manage and improve OHS in the workplace • Maintain housekeeping standards in work area • Identify and respond to emergency procedures including evacuation • Participate in incident investigations/risk assessments • Use emergency equipment • Demonstrate Manual techniques • Explain Correct procedures for manual handling • Use safe waste handle procedures • Select and wear appropriate personal protective equipment for the task • Identified company policy and legislative requirements relating to all workplace activities • List hazards which may be encountered in the workplace and given procedures for reporting hazards. • Demonstrate emergency and evacuation procedures • List persons or services to be contacted in the event of a range of accidents and means of communication with emergency personnel • Recognize hazards in the work area and reported to supervisor
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant legislation from all levels of government on environmental issues. • Relevant environmental policies and workplace/industry practices and procedures.

	• Good practice approaches relevant to work area particularly in regard to minimizing environment hazards and risks, and improving environmental performance. • Environmental issues, especially in regard to water catchments, air, noise, ecosystems, habitat, efficient use of resources, sustainability and waste minimization. • Potential environmental threats and problems relevant to a given region and occupation. • General work place practices and their potential impact on the environment
Underpinning Skills	Skills include the ability to: • Communicate with supervisors and workplace colleagues. • Recognize basic environmental hazards and threats. • Follow workplace directions and instructions. • Keep simple records.
Resource Implications	The following resources must be provided. • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Methods of Assessment	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge.
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Assist Rubber Tree Plantation Establishment**
Unit Code	IND RPD2 07 0616
Unit Descriptor	This competency standard covers the assistance provided to others in preparing for field crop establishment. This assistance is likely to be under routine supervision with intermittent checking. Competency at this level requires the application of limited knowledge and skills to a range of agricultural crop establishment tasks, including assistance with vehicle and machinery preparation and in some cases i.e., sugar, the handling and planting of a range of planting materials (billets). The work undertaken is usually within established routines, methods and procedures.

Element	Performance Criteria
1. Prepare for field crop establishment operations	1.1 ***Instructions*** about planting are interpreted and clarified with the supervisor. 1.2 ***Machinery, equipment and tools*** are selected and prepared for the task being undertaken. 1.3 ***OHS hazards*** are identified, risks assessed and reported to the supervisor 1.4 The ***environmental implications*** of the crop production plan are identified and discussed with the supervisor. 1.5 Suitable ***personal protective equipment*** is selected, used and maintained.
2. Prepare the site for crop establishment	2.1 Old crop and other waste materials are removed and disposed of in full consideration of environmental implications. 2.2 ***Soil treatment/amendments*** are applied according to soil test results and the supervisor's instructions. 2.3 ***Site is worked*** according to the crop production plan. 2.4 Crop protection is implemented according to enterprise guidelines. 2.5 The planting pattern is marked out according to the crop production plan. 2.6 Machinery, equipment and tools are operated according to enterprise guidelines.
3. Carry out establishment operations	3.1 ***Planting material*** is selected according to the type of ***crop establishment*** and enterprise quality standards. 3.2 Planting material is ***treated*** according to the ***Crop protection*** and supervisor's instructions. 3.3 Planting material is handled and transported to the site with no signs of transport damage.

	3.4 Planting is carried out according to the planting plan.
4. Complete establishment operations	4.1 Tools and equipment are cleaned and sterilized according to the manufacturers specifications, enterprise procedures and regulations. 4.2 All containers, leftover fluids, waste and debris are disposed of safely and appropriately. 4.3 All required workplace records are completed accurately and promptly in accordance with enterprise requirements.

Variable	**Range**
Instructions	May include: • Standard Operating Procedures (SOPs), company policy and procedures in regard to crop establishment, specifications, work notes, Material Safety Data Sheets (MSDS), manufacturer's instructions, product labels, or verbal directions from the manager, supervisor, or senior operator.
Machinery, equipment and tools	May include: • tractors and associated land preparation and seeding equipment, cultivators, fertilizer spreaders, seeding or planting machinery bagged or bulk seed, fuel, field tool boxes, cane knives, and planting trailers.
OHS Hazards	May include: • use of machinery, moving machinery and machinery parts, plant debris, chemicals and hazardous substances, manual handling, solar radiation, dust, and noise.
Environmental implications	May include: • The contamination of off-site ground water or soils from solids, debris, nutrients or chemicals; land disturbance, spread of noxious weeds and water run-off.
Personal protective equipment	May include: • Hat, boots, overalls, gloves, goggles, respirator or face mask, hearing protection, and sunscreen lotion.
Soil treatments/ amendments	May include: • Gypsum, lime, organic matter, fertilizers, or the planting of a temporary or permanent cover crop.
Site is worked	May include: • Any sustainable production technique that produces a clean, weed free paddock of appropriate tilth ready to receive the crop.
Planting material	May include: • Wheat and other coarse grain seed, legume seed; pasture seed, cottonseed, oilseed, and cane as billets or whole sticks.
Crop establishment	May include: • Agricultural crop establishment includes preparation of

	machinery, tools and equipment, assisting with land preparation tasks, (ploughing, seeding, cultivating, land shaping and forming) and communicating with other staff regarding the progress of work. • Waste disposal may include disinfestations, ploughing organic waste into the soil, mulching or composting of plant material, bagging and removal of seed heads, and disposing of noxious or poisonous material at approved disposal sights.
Treatments	May include: • Pest and disease prevention and control, weed prevention and control, frost, fertilizers, and mulch.
Crop protection	May include: • wind protection such as permanent shelter belts or temporary plantings of cereals, and mulch, including straw, cover crop or • any vegetative material.

Evidence Guide	
Critical Aspects of Competence	A candidate must be able to demonstrate the ability to: • interpret a site map, • clear the site of old plantings, • prepare the soil and site for plantings, • prepare the plants, • plant the crop and maintain the new crop.
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • importance of field hygiene and quality control in regard to crop establishment • operations of a range of crop establishment machinery • the importance of correct timing and procedures for crop planting • range of pre-planting soil treatments and their importance • methods of waste disposal causing minimal impact on the environment
Underpinning Skills	Demonstrate Skills in: • participate in teams and contribute to team objectives • communicate with team members and supervisor • read and interpret a range of workplace information • calibrate equipment • measure quantities of treatment • determine spacing and planting patterns • operate machinery to manufacturers specifications and • enterprise procedures • safely apply appropriate agricultural chemicals
Resources Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment,

	• Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Methods of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • interview /Questioning/ Written exam/test on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Assist Preparation of Organic Fertilizers**
Unit Code	IND RPD2 08 0616
Unit Descriptor	This unit of competency specifies the outcomes required to recognize raw materials and products, their characteristics, potential contamination, site location, and handling and management requirements; and recognize the function and relative location of key production processes. It also covers carrying out basic site maintenance. The unit involves identifying the nature of enterprise processes and products in order to carry out day-to-day work responsibilities, including site maintenance. Composting is used as a general expression for the processing of organic materials; with this unit being relevant for aerobic and anaerobic composting and vermin culture technologies.

Element	Performance Criteria
1. Organize for work.	1.1 Specifications for ***raw materials*** for composting operation, acceptance criteria and receival procedures are confirmed according to supervisor instructions and enterprise procedures. 1.2 ***Hand tools*** appropriate to job requirements are selected and checked for serviceability according to manufacturer specifications and enterprise procedures. 1.3 Existing and potential ***hazards*** to health and safety are identified, assessed and reported according to Occupational Health and Safety (OHS) and enterprise procedures. 1.4 Suitable ***Personal Protective Equipment (PPE)*** is selected, used, maintained and stored according to OHS procedures.
2. Identify, handle and locate raw materials on site	2.1 Raw materials are identified for potential purpose. 2.2 Characteristics of raw materials, including handling risks and potential or common contaminants, are compared to site operating guidelines. 2.3 Potential hazards in handling raw materials are identified and reported to supervisor. 2.4 Initial handling requirements, stockpiling location and arrangement on site are confirmed from site operating guidelines. 2.5 Visible or physical ***contaminants*** present in raw materials are identified and recorded. 2.6. Physical contaminants are removed from raw materials according to enterprise procedures.

	2.7. Raw materials are segregated, stockpiled and contained in appropriate areas or otherwise managed according to enterprise procedures 2.8 Physical contaminant handling, stockpiling location and arrangement on site are confirmed from site operating guidelines. 2.9. Raw material stockpiles are monitored to ensure adequate available storage capacity and containment, and non-conformances are reported to supervisor. 2.10 Raw material stockpiles are clearly labelled according to job and enterprise procedures.
3. Identify and locate key processes and technologies.	3.1 ***Composting technologies and methods***, key process control steps and technologies are identified and locations on site are confirmed from site map. 3.2 Windrows or vessels are identified by reference to batch or code numbers. 3.3 Machinery, plant and ***equipment*** and their functional uses are confirmed from site operating guidelines.
4. Identify, handle and locate compost and other products on site.	4.1 Compost and other ***products*** are identified for their intended use. 4.2 Characteristics of products, including handling risks and potential or common contaminants, are compared to site operating guidelines. 4.3 Potential hazards in handling products are identified and reported to supervisor. 4.4 Handling requirements, stockpiling location and arrangement on site are confirmed from site operating guidelines. 4.5 Potential for contamination of products is identified and action is taken according to enterprise procedures. 4.6 Batching sheets or other product formulas are matched to end product. 4.7 Visible or physical contaminants present in products are identified and reported to supervisor. 4.8 Physical contaminant handling, stockpiling location and arrangement on site are identified.
5. Identify and carry out site maintenance requirements	5.1 ***Site maintenance*** requirements are identified and carried out according to enterprise procedures. 5.2 Traffic access routes and site traffic/pedestrian safety rules are identified from site operating plan and maintained according to enterprise and Occupational Health and Safety (OHS) procedures.

	5.3 Vehicle access routes on site are maintained according to enterprise procedures. 5.4 Machinery and site security requirements are identified and maintained according to enterprise procedures.

Variable	Range
Raw materials	May include: • animal mortalities • biosolids such as sewage sludge • crop residuals • dairy waste • fats and oils • food organics such as: ➢ food waste ➢ kitchen waste ➢ food processing waste ➢ forestry residuals ➢ manures ➢ organic sludges ➢ paper mill wastes ➢ paper-based materials • plant materials such as: ➢ garden organics ➢ green organics ➢ green waste ➢ yard waste ➢ sewage facility grit and screenings ➢ wood and timber (not treated) ➢ other organic waste or by-product of processing
Hand tools	May include: • bins and buckets • grabbers • mechanical hands • other physical contaminant removal hand tools and • receptacles • shovels and scoops
Hazards	May include: • biological hazards • ergonomic hazards associated with manual handling physical hazards such as: ➢ compressed air and water ➢ dusts ➢ manual handling hazards to pedestrians ➢ hot or cold weather conditions • mechanical hazards such as: ➢ grinders ➢ hammer mills

	➢ shredders ➢ noise • physical hazards such as: ➢ mobile machinery ➢ vehicles • sharps or other physical contaminants in materials underfoot conditions must be addressed by observing enterprise and OHS procedures for: ➢ hazard identification ➢ risk assessment ➢ risk control
PPE	May include: • dust masks • earmuffs • fire extinguishers • gloves • hard hats • high visibility vests • protective clothing • safety footwear • safety glasses
Contaminants	May include: • biological contaminants such as pathogens • chemical contaminants such as: ➢ pesticides ➢ binding and rubble ➢ glass ➢ heavy metals • physical contaminants such as: ➢ glass, plastics and metals ➢ rubble, stone and soil ➢ sharps ➢ other non-biodegradable materials
Composting technologies and methods	May include: • aerated static pile • agitated bay • in-vessel composting technologies • rotating drum • turned pile • vermin culture beds • windrow
Equipment	May include: • conveyor belts and associated attachments such as: ➢ magnetic and blower or suction separators ➢ elevators ➢ excavators ➢ first-response firefighting equipment ➢ front-end loaders

	➢ gantry cranes ➢ hoppers, bins and other containers for contaminant ➢ disposal • personal protective equipment such as: ➢ dust mask ➢ earmuffs ➢ hard hats ➢ protective clothing ➢ reflector high visibility vests ➢ respirators ➢ safety footwear ➢ safety glasses and gloves ➢ safety and road signs ➢ size reduction machinery for grinding or chipping • static machinery, such as weighbridges and windrow turners
Products	May include: • additives blended with recycled organic products after • composting such as: ➢ inorganic fertilizers ➢ lime and gypsum ➢ organic fertilizers ➢ sand ➢ soil ➢ wetting agents • recycled organic products such as: ➢ composts ➢ landscaping soils and materials ➢ mulches ➢ potting mixes ➢ soft fall products ➢ soil conditioners ➢ vermin cast
Site maintenance	May include: • implementation of site machinery and traffic access and • circulation plans • location and management of compost piles, and recipe or batch blends • location of material during curing processes • placement and management of raw materials, products and other inputs or material for disposal

Evidence Guide	
Critical Aspects of Competence	A candidate must be able to demonstrate the ability to: • identify, confirm, locate, handle and maintain raw materials, products and physical contaminants on site • inspect and assess raw materials for contamination and acceptability against established criteria

	• maintain site arrangement and segregation of materials and products to avoid contamination • recognize and locate key process control stages of production cycle and associated machinery on site • read and follow batch numbers and codes, and site operating plan • measure and assess quantity of raw material • handle and report non-conformances • record raw material quantity and calculate fee • maintain appropriate documentation • identify hazards in handling raw materials and implement risk control measures
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • characteristics of a range of raw materials • company policies and procedures, including OHS requirements • key process control stages critical to consistent quality in compost production • overview of systems and technologies used in compost production, particularly as relevant to workplace • range and characteristics of products • risks associated with movement of vehicles and machinery on site • safety risks to self and product posed by contaminants in raw materials and products • standard risk control measures used in the industry to minimize risk associated with handling raw materials and products • standard risk control measures used in the industry to minimise risk associated with handling raw materials and products
Underpinning Skills	Demonstrates skills in: • applying communication skills including active listening, questioning and asking for clarification from supervisor • applying literacy and numeracy skills sufficient to read and follow enterprise policies and procedures • identifying and handling physical contaminants • identifying and handling raw materials and products • recognizing and complying with site traffic and security requirements • basic mathematics for volume estimation and calculation of quantities and fees • operating a weighbridge
Resources Implication	The candidate should also have access to the following resources: • personal protective equipment • commercial-scale compost piles

	• raw materials and products for recognition and handling • access to a commercial-scale compost facility with • documented management system and batch documentation • weighbridge and scales • load-shifting equipment • hand tools/equipment for removing physical contaminants
Methods of Assessment	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge.
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Implement Indigenous Soil and Water Conservation Practices**
Unit Code	IND RPD2 09 0616
Unit Descriptor	This competency standard covers the process of the construction/installation and maintenance of a range of indigenous soil and water conservation measures specified on plans. It requires the ability to prepare for implementation and construction, carry out implementation and construction works, and carry out repairs and maintenance procedures. Implementing indigenous soil and water conservation measures requires a knowledge of Indigenous soil/water management practices, cultural customs and heritage, application of protocols, relevant land legislation, interaction between natural and cultural processes, and cultural knowledge on plants, animals and relationship to country, materials cartage, pollution control, sequence of working and timing, occupational health and safety issues relating to the site, equipment used, construction techniques and specifications and standards.

Element	Performance criteria
1. Explore contemporary Indigenous soil and water management practices	1.1 Relevant contemporary ***Indigenous soil and water management*** practices are outlined according to community guidelines and cultural protocols. 1.2 Relevant issues connected with this practice are defined. 1.3 Relevant and appropriate people are consulted according to community guidelines and cultural protocols. 1.4 Associated issues related to contemporary Indigenous land and water management practices are identified. 1.5 Details of consultation/research are documented.
2. Prepare for implementation and construction	2.1 Indigenous soil and water conservation plan and schedule of works match site conditions. 2.2 Survey pegs and site indicators are identified on site. 2.3 ***Equipment and tools*** are matched to program works and terrain on site. 2.4 Work readiness of selected equipment and tools are verified by following ***Occupational Health & Safety*** procedures. 2.5 Materials are selected to complete proposed works in line with construction schedule.
3. Carry out implementation and construction	3.1 Indigenous Conservation practices are constructed in accordance with details specified in the plan and to industry standards.

	3.2 Indigenous soil and water conservation control products and materials are installed in accordance with community and manufacturer's recommendation guidelines and plans.
4. Carry out repairs and Maintenance procedures	4.1 Site works maintenance inspection schedule is applied to re-establish operating effectiveness of indigenous soil and water conservation measures on site.

Variable	**Range**
Indigenous soil and water management	May include: • Traditional soil and water conservation practices (e.g. stone bund and bench terraces of Konso)
Equipment and tools	May include: • Knives, trowels, spades, forks, hammer, rakes, hoes, shovels, buckets, brooms, wheelbarrows, sand bags, stationery, pegs, measuring tapes, spades, GPS, Gabion wire range pole.
Occupational Health & Safety	May include: • OHS hazard identification, risk assessment and control • implement procedures for dealing with hazardous events • Hazards may include disturbance or interruption of services, solar radiation, dust, soil- and water-borne micro-organisms, sharp hand tools and equipment, manual handling, falling objects, and uneven Surfaces. • Make first aid kits easily accessible at work place in case of emergency
Types and Sources of Information	May include: • Organizational rules, regulation and guidelines • Internet, related books and related materials • Technical manuals • sharing best practice • Virtual library • Workplace guidelines • Recorded documents/logo/history

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate • Constructed indigenous soil and water conservation measures according to community guidelines and industry best practice • Transferred skills and knowledge required to implement indigenous soil and water conservation measures to a range of work environments and contexts
Underpinning Knowledge	Demonstrate knowledge of: • Indigenous soil and water management practices • Cultural customs and heritage

	• Application of protocols • Relevant federal/ regional land acts/legislation • Research processes • Interaction between natural and cultural processes
Underpinning skills	Demonstrate Skills in: • Explore contemporary indigenous soil and water conservation practices • Prepare for implementation and construction • Carry out implementation and construction • Carry out repair and maintenance procedures
Resource Implication	The following resources must be provided. • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions
Method of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • Interview/questioning /Written exam/test on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Detect Forest Fires**
Unit Code	IND RPD2 10 0616
Unit Descriptor	This unit supports the attainment of skills and knowledge required for competent workplace performance in forest and forest products operations of all sizes. It applies to a forest environment and involves application of skills and knowledge at a production worker level.

Element	Performance Criteria
1. Locate position in the field	1.1 Applicable Occupational Health and Safety (OHS), legislative, organizational, certification and ***environmental requirements*** relevant to ***detecting fires*** are identified and complied with. 1.2 ***Smoke*** and current position in the field are identified using landmarks and key geographical features. 1.3 Current position in the field is located on a map or plan in accordance with site procedures. 1.4 ***Communication*** with others is established and maintained in accordance with OHS requirements.
2. Record smoke and other sightings	2.1 Smoke and other sightings are noted and reported promptly in accordance with organizational procedures. 2.2 ***Sighting details*** are recorded in accordance with required formats, conventions and site procedures. 2.3 An accurate chronological log is maintained in accordance with required formats, conventions and site procedures. 2.4 Situations requiring ***specialist advice*** are identified and assistance sought as required in accordance with site procedures.
3. Communicate with fire command/control	3.1 ***Communications equipment*** is used to relay information accurately and clearly in accordance with ***safe working practices***, ***training*** and site procedures. 3.2 Location of own position and sightings are accurately and clearly relayed to fire command or control using conventional descriptions. 3.3 ***Relevant information*** and conditions are accurately recorded and relayed using required formats and conventions in accordance with instructions. 3.4 Fire detecting processes and outcomes are ***recorded and reported*** to the ***appropriate personnel***.

Variable	Range
Environmental requirements	May include: • the use of personal protective equipment and clothing • safety equipment • first aid equipment • firefighting equipment • hazard and risk control • elimination of hazardous materials and substances • safe forest practices including required actions relating to forest fire • manual handling including shifting, lifting and carrying • award and enterprise agreements • industrial relations • Ethiopian Standards • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care • heritage and traditional land owner issues • legal, organizational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OHS, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines
Detecting fires	May include: • may be from all types and locations commonly found in forested and grassland country, towers or aircraft
Smoke	May include: • assessed for colour, type and meaning
Communication	May include: • verbal and non-verbal language, relaying of information using prescribed formats and conventions, constructive feedback, active listening, questioning to clarify and confirm understanding, use of positive, confident and cooperative language, use of language and concepts appropriate to individual social and cultural differences, control of tone of voice and body language
Sighting details	May include: • locations, bearings, and estimated distances

Specialist advice	May include: • sought from supervisor, fire command/control, colleagues, local fire brigade
Communications equipment	May include: • public radio and telephone networks or those used by the organization, local fire brigades, emergency management organizations
Safe working practices	May include: • evacuation procedures when threatened by fire, wind, appropriate clothing, hydration and nutrition requirements
Training	May include: • from fire command/control, supervisor or colleagues
Relevant information	May include: • meteorological readings and satellite imagery
Records and reports	May include: • chronological log of sightings and noteworthy events such as significant changes in smoke column colour or size, locations and bearings of sightings, estimated distances to sightings, meteorological readings and conditions • may be manual, using a computer-based system or another appropriate organizational communication system
Appropriate personnel	May include: • supervisors, fire control, colleagues and managers

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to : • safely and accurately detect fires and accurately report and record details of sightings • Comply with applicable legislative and regulatory requirements and codes of practice, including OHS, environmental and organizational policies and procedures, relevant to detecting fires • Use appropriate communication systems and equipment to receive instructions and relay information using conventional descriptions to fire command or control and colleagues • Accurately locate and identify on a map or plan current position from the field or air • note and report sighting details accurately, including estimated distances in the required formats and conventions • record information accurately and clearly including a chronological log of sightings and meteorological measurements and readings

Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • basic knowledge and understanding of applicable legislation, regulations, standards and codes of practice relevant to detecting fires • organizational and site standards, requirements, policies and procedures for detecting fires • principles of cultural diversity and access and equity • environmental protection requirements, including the safe disposal of waste material • established communication channels and protocols • types of communication equipment and procedures for their use • problem identification and resolution • precautions which must be taken in a range of extreme weather conditions • smoke types, colour and meaning • organizational and fire command or control conventions for recording and reporting fire sightings in an emergency situation • terrain and features visible from a tower or aircraft • common scales used on maps and plans and procedures for their use and manipulation • map types and features • procedures for measuring and recording meteorological data • appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks • procedures for recording and reporting workplace information
Underpinning Skills	Demonstrates skills to: • comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for detecting fires • review and accurately identify work requirements • identify problems and hazards and demonstrate appropriate response procedures • use appropriate communication methods, equipment and interpersonal techniques with colleagues and others • accurately locate, record and report information • effectively use landmarks and geographical features to locate position • effectively and safely climb fire towers • accurately interpret map details and features • apply mathematical processes to measure and record meteorological data • accurately read a compass and estimate distances

	• Collect, analyze and organize information including interpretation of maps, plans, landmarks, geographical features and meteorological data • Plan and organize activities for fire detecting in the correct sequence for the process to be completed within the designated timeframes • use effective communication systems and interpersonal techniques with colleagues and others to maximize safety, confidence, satisfaction and emergency response during the fire detecting process • Use mathematical ideas and techniques time to complete tasks and measuring meteorological data and estimate distances • Solve problems by establishing safe and effective fire detecting processes which anticipate and identify likely problems, hazards and emergencies
Resources Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Methods of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • Written exam/test on underpinning knowledge • questioning or interview on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competency is to be assessed in the workplace or realistically simulated site.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Apply Agro-forestry Techniques**
Unit Code	IND RPD2 11 0616
Unit Descriptor	This unit of competence covers skill, knowledge & attitude of applying Agro- forestry techniques. It requires the ability to select site, prepare materials, tools and equipment for Agro-forestry activities, undertake Agro- forestry work activities, store and stockpile materials, and clean up on completion of work. Applying Agro- forestry techniques requires knowledge of safe work practices, characterization of traditional agro forestry potentials, identification of components, interactions and agro-forestry species.

Element	Performance criteria
1. Classify the Agro forestry systems	1.1 Agro forestry systems are identified based on presence of components. 1.2 Agro forestry systems are identified depending on their benefits. 1.3 Agro forestry systems are identified depending on the arrangements of components.
2. Identify Agro forestry species	2.1 Based on growth character and potential productivity following ***Occupational Health & Safety*** is essential. 2.2 Identified species are matched with site based on species requirement and environmental condition.
3. Characterize traditional Agro forestry potentials	3.1 Agro forestry potentials are characterized based on edaphic and climatic factors. 3.2 Agro forestry potentials are characterized based on farming practice ***tools and equipment***.
4. Apply Agro Forestry technology for soil productivity and protection	4.1 Different Agro-forestry practices are identified and promoted. 4.2 Agro forestry technologies are identified based on their ecological and socio economic importance. 4.3 Agro forestry technologies are practiced for soil productivity and protection.
5. Identify component inter- action in agro forestry system	5.1 Agro forestry component of positive and negative interactions are identified. 5.2 Component interactions are managed.

Variable	Range
Occupational Health & Safety	May include: • OHS hazard identification, risk assessment and control • implement procedures for dealing with hazardous events

	• Hazards may include disturbance or interruption of services, solar radiation, dust, soil- and water-borne micro-organisms, sharp hand tools and equipment, manual handling, falling objects, and uneven Surfaces.
Tools and equipment	May include: • PH meter, Altimeter, Strings, Poles, Measuring tapes, Drawing , Saw hammer, nails, Different seeds and vegetative planting materials, Pots, Watering can, Plastic bags, Clearing hand tools(machete, axes etc), First aid kits, Digging tools, Spade ,Rake , Shovel, Pegs, Hand spray and Pruning knives
Types and Sources of Information	May include: • Organizational rules, regulation and guidelines • Internet, related books and related materials • Technical manuals • sharing best practice • Virtual library • Workplace guidelines • Recorded documents/logo/history

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to : • classify Agro forestry systems • identify Agro forestry species • practice Agro forestry technologies • identify Agro forestry component interactions
Underpinning Knowledge	Demonstrate Knowledge of: • Understanding the role of agro forestry for soil productivity and conservation. • Component interaction. • Species identification.
Underpinning skills	Demonstrate skills in: • Classify the agro-forestry systems • Identify Agro forestry species • Characterize traditional agro-forestry potentials • Apply agro-forestry technology for soil productivity and protection • Identify component interaction in agro forestry system
Resource Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel

Method of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • Written exam/test on underpinning knowledge • questioning or interview on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Conduct Erosion and Sediment Control Activities**
Unit Code	IND RPD2 12 0616
Unit Descriptor	This competency standard covers the process of carrying out erosion and sediment control activities in both urban and rural environments. It requires the ability to identify erosion and sediment control structures, carry out routine work in compliance with control measures, undertake work in accordance to legislation and community expectation and project specifications. Conducting erosion and sediment control activities requires knowledge of basic issues related to erosion and sedimentation, role of vegetation, characteristics of soils with an emphasis on erosion prone soils, relevant legislation and local environmental parameters.

Element	Performance Criteria
1. Align work site practices with erosion and sediment control principles	1.1 Erosion and sedimentation legislation is adhered to at the work site as a part of contract works. 1.2 Procedures relating to ***erosion and sediment control*** are applied on the work site align with industry standards.
2. Implement erosion and sediment control principles in the workplace	2.1 Breaches of erosion and sediment control legislation are noted and reported. 2.2 ***Industry*** practices for erosion and sediment control is applied in the work place.

Variable	Range
Erosion and sediment control	May include: • Land shaping including batter stabilization, banks, channels, and sediment basins, traps, filters and fences. Also includes re-vegetation. • Grade stabilizing structures, outlet protection structures, storm water detention measures, dust control, and rural roads and tracks.
Industry	May include earthmoving machine operators, cartage contractors, timber harvest machine operators, product suppliers, laborers, trade personnel, fuel suppliers, engineers, landholders, land care groups, fitters, contractor support staff, project supervisors, forest and plantation workers, supervisors, surveyors and foresters.

Evidence Guide	
Critical Aspects of Competence	A candidate must demonstrate ability to: • complete erosion and sediment control work properly according to community and agency guidelines and best practice procedures

	• Identify and describe erosion and sediment control structures/ measures/ practices. • Undertake activities in accordance with legislation/ community expectation and project specifications. • Communicate ideas and information • Collect, analyze and organize information • Plan and organize erosion and sediment control activities on development sites • Work with others and in teams • Conduct erosion and sediment control activities on development sites • Use mathematical ideas and techniques to measurement and timing
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Relevant legislation. • Cost to the community of erosion and sedimentation. • Loss of habitat. • Water quality. • Loss of production/asset/amenity. • Re-occurring maintenance/repair/monitoring. • Agents/processes of erosion and sedimentation. • Basic catchments issues. • Role of vegetation. • Characteristics of soils with an emphasis on erodible soils.
Underpinning Skills	Demonstrate skills to: • Identify erosion and sediment control structures/ measures/ practices. • Carry out routine work with control measures and structures. • Undertake activities in accordance with legislation/ community expectation and project specifications. • Communicate ideas and information • Collect, analyze and organize information • Plan and organize erosion and sediment control activities on development sites • Work with others and in teams • Conduct erosion and sediment control activities on development sites • apply mathematical ideas and techniques to measurement and timing • Solve technical and organizational problems while conducting erosion and sediment control activities on development sites,
Resources Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and

	equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Methods of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • Written exam/test on underpinning knowledge • questioning or interview on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Maintain Rubber Tree Tools and Equipment**
Unit Code	IND RPD2 13 0616
Unit Descriptor	This unit of competence covers scheduling action plan for preventive maintenance, organizing material inputs and following up of implementation accordingly and repairing when breakdown is occurred. it includes scheduling action plan, organizing material inputs and following up of the implementation of the action plan for the preventive maintenance and repairing when fault is occurred.

Element	Performance Criteria
1. Prepare schedule for preventive maintenance	1.1 Equipments which require special care are identified. 1.2 Preventive maintenance schedule is prepared according to the equipment history and its technical service manuals.
2. Organize material input for preventive maintenance	2.1 Service manuals are organized for each equipments 2.2 Logbook is prepared for each equipment including ***Occupational Health & Safety (OHS)***. 2.3 Different tools, spare parts, accessories and other material required for the preventive maintenance are organized.
3. Apply preventive maintenance Repair equipments	3.1 Availability of materials for preventive maintenance is checked regularly 3.2 ***Tools & equipments*** are assessed and inspected according to the schedule prepared. 3.3 Effectiveness of the implementation is monitored according to the organization's procedure.
4. Repair equipments	4.1 Broken/defected equipments are identified and sorted out ***Sources of Information*** according to the service user's manual. 4.2 Decision is made to assess the ***feasibility of repairing*** the broken equipment with regard to its economic importance. 4.3 Equipment is repaired according to the manufacturer's ***specifications*** and service manuals.

variable	Range
OHS	May include: • The use of personal protective equipment and clothing • Safety equipment • First aid equipment • Hazard and risk control

	• Elimination of hazardous materials and substances • Appropriate fitness for the task
Tools and equipments	May include: • Screw driver, cleaning brush, oils for lubrication, Electrical safety analyzer, chemicals for cleaning, Thermometer, Pliers,
Sources of Information	May include: • Organizational rules, regulation and guidelines • Internet, related books and related materials • Technical manuals • sharing best practice • Virtual library • Workplace guidelines • Recorded documents/logo/history
Feasibility of repairing	May include: • is assessing the equipments whether to prepared or throw based on cost to be incurred
Specification	May include: • Work unit guidelines, procedures and protocols including OHS procedures and protocols • for using interpreters • Supervisor or management instructions • Instructions may be: ➢ Written ➢ Verbal

Evidence Guide	
Critical Aspects of competence	A candidate must able to demonstrate the ability to: • Prepare schedules • Organize material inputs • Assess and inspect equipments/instruments and materials • Prevent Equipments/instruments and materials • Repaired equipments or materials
Underpinning knowledge	Demonstrate knowledge of: • Trouble shouting techniques • Basic safety rules • Scheduling • Repairing • Equipment operation • Designated knowledge /skill development • Hazard control • OHS • Manual handling • First Aid • Cultural awareness • Security procedures

	• Quality improvement policy and practice • Discrimination, harassment and bullying in the workplace • Formal and informal resolution of grievances • Waste management
Underpinning skills	Demonstrate skills in: • Prepare schedule for preventive maintenance. • Organize material input for preventive maintenance • Apply preventive maintenance • Repair equipments
Resource Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Method of Assessment	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge.
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Measure Rubber Trees**
Unit Code	IND RPD2 14 0616
Unit Descriptor	This unit specifies the outcomes required to measure trees and record tree measurement data. it includes identification of tree abnormalities This unit supports the attainment of skills and knowledge required for competent workplace performance in forest and forest products operations of all sizes. The unit applies to a forest environment and involves application of skills and knowledge at a production worker level.

Element	Performance Criteria
1. Identify tree measuring requirements	1.1 Applicable ***Occupational Health and Safety (OHS)***,***legislative*** and ***organizational requirements*** relevant to measuring ***trees*** are identified and complied with. 1.2 Work order is reviewed and checked as required with ***appropriate personnel***. 1.3 ***Tools*** are selected appropriate to work requirements and checked for operational effectiveness in accordance with manufacturer's recommendations. 1.4 ***Measurements*** including tolerances, allowances, calibration requirements and special procedures are obtained and checked. 1.5 ***Communication*** with others is established and maintained in accordance with OHS requirements.
2. Measure trees	2.1 All work is conducted using established safe operating practices and in accordance with site procedures. 2.2 Suitable personal protective equipment and clothing is selected, used and maintained. 2.3 Site environmental concerns are identified and complied with in accordance with relevant national, state, and local legislation and regulations. 2.4 Forest area to be worked within is identified from work order instructions and located on the ground. 2.5 ***Tree measurements*** are accurately taken and recorded in the appropriate style and format in accordance with organizational requirements. 2.6 ***Tree abnormalities*** are identified, assessed and recorded in accordance with workplace procedures.

Variable	Range
OHS requirements	May include: • the use of personal protective equipment and clothing • safety equipment • first aid equipment • firefighting equipment • hazard and risk control • elimination of hazardous materials and substances • safe forest practices including required actions relating to forest fire • manual handling including shifting, lifting and carrying
Legislative requirements	May include: • award and enterprise agreements • industrial relations • confidentiality and privacy • OHS • the environment • equal opportunity • anti-discrimination • relevant industry codes of practice • duty of care • heritage and traditional land owner issues
Organizational requirements:	May include: • legal, organizational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OHS, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines)
Trees	May include: • plantation and native forest trees of a variety of species and ages
Appropriate personnel	May include: • supervisors, clients, colleagues, line management
Tools	May include: • diameter tapes, length tapes, optical wedges, clinometers, Vertex
Measurements	May include: • tree diameter and girth (over or under bark at breast height or ground level), tree height, log length
Communication	May include: • verbal and non-verbal language, constructive feedback, active listening, questioning to clarify and confirm understanding, use of positive, confident and cooperative

	language, use of language and concepts appropriate to individual social and cultural differences, control of tone of voice and body language
Tree measurements	May include: • calculating stand height according to sampling technique, measuring log volume, and classifying stem form or crown class
Tree abnormalities	May include: • butt swell, double leaders, heavy branching, ramicorns

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to: • interpret written and verbal instructions to locate specified forest area to accurately carry out tree measurements within environmental and organizational requirements • Comply with applicable legislative and regulatory requirements and codes of practice, including OHS, environmental and organizational policies and procedures, relevant to measuring trees • Communicate effectively and work safely with others in the work area • Use and maintain appropriate measuring tools • Locate forest or plot area from map/plan and carry out a range of tree measuring procedures without causing damage to tree, environment, equipment or personnel
Underpinning knowledge and attitudes	Demonstrate knowledge of: • legislation, regulations, standards and codes of practice relevant to measuring trees • organizational and site standards, requirements, policies and procedures relating to • measuring trees • principles of cultural diversity and access and equity • environmental protection requirements, including the safe disposal of waste material • established communication channels and protocols • problem identification and resolution • types of tools and equipment and procedures for their safe use, operation and maintenance • tree measuring techniques including relevant mathematical calculations and basic trigonometry • species and characteristics of vegetation to be measured • types of measuring tools and procedures for their use and maintenance • procedures for recording and reporting workplace information • appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks

Underpinning skills	Demonstrate Skills in: • comply with legislation, regulations, standards, codes of practice and established safe practices and procedures relating to measuring trees • review and accurately identify work requirements • select, use and maintain relevant tools, machinery and equipment • identify problems and equipment faults and demonstrate appropriate response procedures • use appropriate communication and interpersonal techniques and methods with colleagues and others • accurately locate, record and report information • use appropriate mathematical techniques to calculate stand height and measure dimension and volume • identify tree form and abnormalities • locate forest or plot area in the field from a map or plan • conduct tree measuring procedures without causing damage to equipment, property, environment, forest trees or personnel
Resource implications	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Method of assessment	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge.
Context of assessment	Competency is to be assessed in the workplace or realistically simulated workplace area.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Apply Rubber Tree Latex Harvesting Technologies**
Unit Code	IND RPD2 15 0616
Unit Descriptor	This unit of competence covers pre-harvesting survey, maintenance of tools and equipments and harvesting procedures to be followed. This unit of competence applies to conduct harvesting survey, maintenance of tools and equipments and application of harvesting procedures with available labor force, skill and equipment.

Element	Performance criteria
1. Conduct pre-harvesting survey	1.1 The area to be harvested is delineated and estimated through preliminary survey. 1.2 Matured trees and shrubs are identified for harvesting based on their purpose. 1.3 The required resources are allocated based on ***Occupational Health & Safety (OHS)*** activities.
2.Maintain tools and equipments	2.1 Workshops are established to maintain tools and equipments based on available resource. 2.2 Harvesting ***tools and equipments*** are maintained based on their importance. 2.3 Technicians are trained based on required techniques and skills.
3. Follow appropriate harvesting procedures	3.1 Economic feasibility and environmental issues are considered during harvesting. 3.2 Stump site is cleared based on ***Sources of Information***. 3.3 Felling direction is determined based on topography, leaning direction, wind direction and others. 3.4 Trees are felled in prescribed direction. 3.5 The felled trees are debarked and cross-cut in to desired size. 3.6 ***Logs*** are transported to temporary storage site.

Variable	Range
OHS	May include: • Use kits and helmets • Apply first aid • Follow safety procedure during operating and maintaining machines • Follow tree felling procedures • Avoid environmental impact during logging and transport
Tools and equipments	May include: • Chain saw

	• Machete • Bow saw • Axe • Meter tape • Cross cut saw • Helmet • Boots • Hand gloves • Cloths and mats
Sources of Information	May include: • Organizational rules, regulation and guidelines • Internet, related books and related materials • Technical manuals • sharing best practice • Virtual library • Workplace guidelines • Recorded documents/logo/history
Logs	May include: • a felled tree cut into desired size

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to: • Harvest matured trees and shrubs • Maintain tools and equipments • Train technicians • Establish workshop
Underpinning Knowledge	Demonstrate knowledge of: • Forestry • NRM • Woodwork • Environment
Underpinning skills	Demonstrate skills to: • Conduct pre-harvesting survey • Maintain tools and equipments • Follow appropriate harvesting procedures
Resource Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Method of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • Written exam/test on underpinning knowledge

	• questioning or interview on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Apply Post-Harvest Handling Techniques of Rubber Tree Products**
Unit Code	IND RPD2 16 0616
Unit Descriptor	This unit of competence covers selection of appropriate seasoning techniques, temporary processing and storage sites, sorting up of processed products, and construction of permanent wood product storage sites. This unit of competence applies to selection of appropriate seasoning techniques, selection and construction of temporary and permanent storage sites and processing, sorting, sorting and labeling of forest products with available labor forces, skills and materials.

Element	Performance Criteria
1. Use proper seasoning techniques	1.1 use appropriate ***Occupational Health & Safety*** (***OHS)*** for seasoning techniques are identified based on nature of wood and available resource. 1.2 Air drying, sun drying and kiln drying are applied based on species types.
2. Select temporary processing and storage site	2.1 Temporary ***processing*** & storage sites are selected and designed based on their accessibility by using the right ***tools and equipments***. 2.2 Processed logs are ***stacked*** in accordance with their size.
3.Sort processed forest product	3.1 Processed forest products are classified based on their quality, size, type and use. 3.2 Processed products are ***bound*** and stacked according to their size and type. 3.3 ***Sorted*** forest products are available for market based on demand.
4. Construct permanent wood product storage site	4.1 Permanent storage sites are selected, designed and constructed based on their accessibility to road and market. 4.2 Processed logs are stacked in the storage sites in accordance with their size.

Variable	Range
OHS	May include: • Take care of chemicals while seasoning and preserving • Take care while loading and unloading
Processing	May include: • debarking, debranching, piles logs
Tools and equipments	May include: • Cars, Lorries, Rollers, Cranes

	• Store and storing equipments • Treatment chemicals • Kiln
Stacking	May include logs arranges in piles
Binding	May include: • tied logs
Sorting	May include: • classifying and arranging wood based on its quality, size and purpose
Sources of Information	May include: • Organizational rules, regulation and guidelines • Internet, related books and related materials • Technical manuals • sharing best practice • Virtual library • Workplace guidelines • Recorded documents/logo/history

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to: • Select temporary processing and storage site • Sort forest products • Stack and rack logs • Construct permanent storage site
Underpinning Knowledge	Demonstrate knowledge of: • Introduction to forest development • Principles of natural resources development • Wood engineering
Underpinning skills	Demonstrate Skills to: • Use proper seasoning techniques • Select temporary processing and storage site • Sort processed forest product • Construct permanent wood product storage site
Resource Implication	The following resources must be provided: • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • Specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Method of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • interview /questioning/ Written exam/test on underpinning knowledge

	Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Record and Organize Data**
Unit Code	IND RPD2 17 0616
Unit Descriptor	This unit of competency specifies the outcomes required to record and organize forest development and utilization data obtained from a variety of sources, such as stock counts records, quantities developed. Data collection and recording activities are usually carried out within established routines, methods and procedures. This unit of competence covers collecting, organizing, analyzing, storing and presenting forest development and utilization data.

Element	Performance Criteria
1. Identify data to be collected Record data. Present and store forest conservation and protection data.	1.1 Specific requirements of the ***data*** to be collected are determined by discussion with the supervisor or by reading work instructions. 1.2 ***Materials*** or ***tools & equipments*** are required for data collections are obtained, and where necessary, calibrated. 1.3 Difficulties that may be encountered in collecting the data are identified and advice sought from the supervisor if needed. 1.4 ***Advice*** about proposed data collection is communicated to others as required ***Occupational Health & Safety (OHS)*** requirement. 1.5 Suitable ***Personal Protective Equipment (PPE)*** is selected, used and maintained where required. 1.6 Checks are made to determine whether notices relating to site quarantine are in effect and, where required, site quarantine procedures are followed.
2. Record data.	2.1 Forest development, protection and utilization data is recorded in the correct ***format*** and to meet specific requirements. 2.2 Records are made legible, accurate and complete.
3. Present and store forest conservation and protection data.	3.1 Forest development, utilization and protection data is presented in the correct format and to meet specific requirements. 3.2 Forest development, protection and utilization data sheets are stored according to enterprise procedures. 3.3 Forest development, protection and utilization data is downloaded or entered into a computer where required, using specified formats and applications.

Variable	Range
Data	May include: • obtained from a variety of sources, such as counting stocks of animals or plants/crops at particular stages of growth, those with particular characteristics or at specified locations, show results, fertilizers, temperature, water used, carbon dioxide, relative humidity, picker identification number, quantities and grade conserved and protected. • Recorded and presented in specified written or electronic/computerized formats. Results may be presented orally to supervisors and/or work groups.
Materials	May include: • paper • pens • tally forms • data loggers • bar code scanners
Tools and equipments	May include: • paper • pens • tally forms • data loggers • Clipboards • bar code scanners • Hat • Boots • Overalls • Gloves • Water proof clothing and goggles.
Advice	May include: • Other employees working with the stock or materials may need to be advised so that the activity can proceed smoothly and stock is not moved or regrouped before data collection is complete.
OHS	May include: • The effect of wild animals attack on the human beings. It also includes landslide and others. • Control measures may be taking care of all hazards that may occur in data collection activities.
PPE	May include: • Hat • Boots • Overalls • Gloves • Apron • Water proof clothing • Spray clothing

	• Goggles • Respirator or face mask • Face guard • Hearing protection • Sunscreen lotion and hard hat.

Evidence Guide	
Critical Aspects of Competence	A candidate must able to demonstrate the ability to: • Identify and collect data • Select personal preventive equipments • Record and present data
Underpinning Knowledge	Demonstrate knowledge of: • Enterprise recording methods • Purposes for which the recorded data might be used • Software programs used for recording or storing data. • Counting moving animals in paddocks, pens or in races • Entering data accurately into specified written or electronic/computerized formats • Calibrating tools and equipment.
Underpinning skills	Demonstrate skills to: • Identify data to be collected • Record data • Present and store forest conservation and protection data.
Resource Implication	The following resources must be provided. • Access is required to real or appropriately simulated situations, including work areas, materials and equipment, • Documentation and information on workplace practices and OHS practices. • specifications and work instructions • Approved assessment tools • Certified assessor /Assessor's panel
Method of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • Written exam/test on underpinning knowledge • questioning or interview on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Undertake Propagation Activities**
Unit Code	**IND RPD2 18 0616**
Unit Descriptor	This competency standard covers the process of plant propagation undertaken in enterprises involved in plant propagation and production. The competency is demonstrated by the application of knowledge and skills to a range of propagation tasks, such as preparing parent plant stock, collecting propagation materials, pre-planting treatments and basic plant propagation techniques. This unit does not include budding and grafting.

Element	Performance Criteria
1. Prepare for plant propagation	1.1 ***Workplace information*** is interpreted and clarified according to instructions. 1.2 ***Occupational Health and Safety (OHS) hazards*** in the work area are identified, rectified and/or reported. 1.3 Suitable ***Personal Protective Equipment (PPE)*** is selected, used, maintained and stored. 1.4 ***Tools and equipment*** appropriate to the task being undertaken are selected and prepared according to enterprise guidelines. 1.5 Propagation material is ***collected*** using the appropriate method for the species and according to enterprise guidelines. 1.6 Propagation material is ***maintained and stored*** to ensure maximum viability.
2. Propagate plants	2.1 ***Pre-treatment*** is applied and/or carried out appropriate to the propagation method and species. 2.2 Propagation techniques are carried out according to the requirements of the species. 2.3 Propagation material is handled in a way that minimizes damage and maximizes viability. 2.4 Water and nutrients are applied to suit the media conditions, plant requirements and ***propagation techniques*** employed. 2.5 ***Labels*** are applied according to enterprise guidelines. 2.6 Plant health is monitored and ***remedial action*** is taken according to enterprise guidelines. 2.7 Propagation activities are carried out according to ***OHS requirements.***
3. Complete propagation	3.1 ***Records*** are completed accurately and at the required time according to enterprise guidelines.

	3.2 Tools and equipment are cleaned and stored according to manufacturer specifications and enterprise guidelines. 3.3 ***Waste*** is removed and ***hygiene practices*** are followed according to enterprise and OHS requirements.

Variable	**Range**
Workplace information	May include: • Planting program, Production Statistics, Standard Operating Procedures (SOPs), specifications,
OHS hazards	May include: • manual handling • hazardous substances • moving equipment and vehicles • sharp hand tools • Solar radiation • Slippery or uneven surfaces and insect and spider bites.
PPE	May include: • Respirators • Overalls • Boots • Gloves • Sun hat and sunscreen lotion.
Tools and equipment	May include: • Secateurs • knives and other cutting instruments • plastic containers and trays • Wheelbarrow • Trolley • mechanical trolley • Shovel • water spray container • Dibblers and rubbish bins.
Collecting	May include: • Taking leaf or stem or root cuttings • Gathering seeds • Lifting bulbs & dividing clumps.
Maintenance and storage	May include: • Controlling environmental parameters such as moisture, air, humidity and temperature by methods such as refrigeration, wrapping in wet hessian or plastic, drenching, placing in water and burying in sawdust or other media.
Pre -treatments	May include: • Hormones • Fungicides • cold/moist stratification • Rehydration

	• heat or chemical disinfestations • breaking seed coat • cleaning • Division and sterilization.
Propagation techniques	May include: • Seed - (small seed sown in modules and pricked out or sown in seedbeds by hand), cuttings - (hardwood stem, semi-ripe stem, leaf, root), simple layering, growing on tissue-cultured plants, division or splitting, spores.
Labels information	May include: • Date of propagation • Species • Variety • batch number and cultivar • Treatments applied, strike rate.
Remedial action	May include: • applying preventative fungicides • fertilizers • removing and disposing of damaged plant material • irrigation
OHS requirements	May include: • Identifying hazards, assessing and reporting risks, cleaning, maintaining and storing tools and equipment, appropriate use of personal protective equipment including sun protection, safe operation of tools and equipment, safe handling, use and storage of chemicals and hazardous substances, correct manual handling; basic first aid, personal hygiene and reporting problems to supervisors.
Records	May include: • Date of propagation • type of propagation carried out • number of plants carried out • Source of propagation material • treatments carried out, spray records.
Waste	May include: • Unused propagation material • potting media wastage, • damaged plants and damaged pots.
Hygiene practices	May include: • Removing all dirt and organic matter from production surfaces, tools and equipment, disinfecting production surfaces, tools and equipment, disinfestations and removal of plant and media waste, hand washing, footbaths, access restrictions and handling practices which minimize cross contamination.

Evidence Guide	
Critical Aspects of Competence	A candidate must demonstrate the ability to: • communicate effectively with fellow team members • carryout a variety of propagation techniques • comply with enterprise requirements for handling and disposal of nursery wastes
Underpinning knowledge and attitudes	Demonstrate knowledge of: • Maintenance requirements of tools and equipment used for propagation. • OHS requirements of employees. • Quality specifications/characteristics of a range of parent plants and propagation materials. • Basic plant nutrition. • Record keeping relevant to the work function. • Enterprise requirements for handling and disposal of nursery wastes. • Enterprise hygiene requirements. • Common problems that may occur while performing propagation activities in a controlled environment • Propagation methods required for a range of plants. • OHS legislative requirements and Codes of Practice. • OHS procedures
Underpinning skills	Demonstrate skills in: • Read and interpret instructions. • Participate in teams and contribute to team objectives. • Communicate effectively with fellow team members. • Carry out a variety of propagation techniques.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment
Methods of Assessment	Competence may be assessed through: • Practical assessment by direct observation of tasks through simulation/Role-plays • interview /questioning /Written exam/test on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Implement a Propagation Plan**
Unit Code	**IND RPD2 19 0616**
Unit Descriptor	This competency standard covers the process of rubber tree propagation by both sexual and asexual methods. Competency involves the application of knowledge and skills to a range of propagation tasks, such as the selection of suitable propagation material, selection and preparation of propagation media, and the application of preparatory treatments. The work is carried out within routine methods and procedures under limited supervision, with checking only related to overall progress. Some discretion and judgment is required in the selection of equipment, work organization, services, actions and achieving outcomes within time constraints.

Element	Performance Criteria
1. Prepare for propagation activities	1.1 Workplace information is interpreted and tasks organized to achieve daily work routine within time constraints. 1.2 ***Tools, equipment and machinery*** are selected according to propagation method and ***enterprise work procedures***. 1.3 Growing environment is ***prepared*** to suit species and propagation method. 1.4 ***Hygiene practices*** are implemented according to enterprise guidelines. 1.5 ***OHS hazards*** are identified, risks assessed, controls implemented and reported to the supervisor
2. Select propagation material	2.1 Parent rubber tree is identified and selected according to health, vigor and desired characteristics. 2.2 ***Propagation material*** is selected and collected according to the propagation method, and species. 2.3 ***Conditioning and storage requirements*** are selected to ensure maximum viability of propagating material.
3. Prepare propagating media	3.1 Media components are selected according to manufacturer directions, enterprise guidelines, propagation method and rubber tree needs. 3.2 ***Propagation media*** is tested to ensure the product complies with ***media specifications***. *3.3* Media and components are handled according to ***OHS requirements***. *3.4* ***Storage requirements*** for the unused propagation media are selected.

4. Propagate rubber Tree	4.1 Propagation material is ***prepared*** according to the propagation method and species. 4.2 ***Propagation techniques*** are performed according to rubber Tree species and enterprise guidelines. 4.3 Rubber Trees are handled in a way that minimizes damage. 4.4 ***After care*** is applied to suit the media conditions, rubber Tree requirements and propagation techniques employed.
5. Complete propagation operations	5.1 Ensure work site is cleaned according to hygiene requirements. 5.2 ***Waste*** is collected and disposed of or recycled to minimize damage to the external environment in accordance with enterprise guidelines. 5.3 ***Records*** are completed accurately and at the required time according to enterprise guidelines.

Variable	**Range**
Tools and equipment	May include: • knives and other cutting instruments • sharpening grinder • linear measure • grafting machine • plastic containers • tying plastic and trays • Scalpel • laminar flow cabinet • Autoclave • Alcohol • vermiculite boxes • wheelbarrow • Trolley • mechanical trolley • Shovel • water spray container • dibblers and rubbish bins
Enterprise work procedures	• Work procedures will be based on sound rubber tree operations principles and practices and may include supervisor's oral or written instructions, propagation program, enterprise Standard Operating Procedures (SOPs), specifications, production schedules, routine maintenance schedules, work notes, product labels, and Material Safety Data Sheets (MSDSs); Integrated Pest Management (IPM) programs; manufacturers' service specifications and operator's manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.
Preparation	May Include:

	• Setting temperature controls • setting wind machines • setting humidity levels
Hygiene practices	May Include: • Storing different types of media separately to avoid cross contamination • cleaning and disinfecting work areas • tools and equipment between batches • access restrictions and footbaths
OHS hazards	May Include: • using hazardous substances • using sharp tools and equipment • slippery uneven surfaces and manual handling
Propagation material	May Include: • seeds • cuttings • rootstock • Scion • Buds • separations/divisions • tissue cultures and pantalets
Conditioning and storage requirements	May Include: • bundling • packing and labeling and controlling environmental parameters such as moisture, air, humidity and temperature.
Propagating media	May Include: • sand • potting mix • agar • Gravel • Scoria • rock woo • agro wool • sawdust • pine bark • Perlite • Vermiculite and Water (hydroponics).
Media specifications	May Include: • Tests pH • Drainage • Aeration • salinity nitrate levels • Water repellence • Hormone levels and types • Nutrient levels and Sterility.

OHS requirements	May include steps may apply to labeling, MSDSs, equipment used for handling pot media, composts and other organic material; potting areas, and appropriate safety equipment
Storage requirements	May include media should be stored in facilities that prevent infestation by root rot organisms, on surfaces and in areas that exclude run-off water and contamination by soil and other contaminated materials; in bins, trailers and trolleys.
Preparing propagation material	May Include: • Applying hormones • Fungicides • soaking buds • hot water treatment of cuttings • Disbudding • Hydration • Grading • Cold/moist stratification • Dehydration • Heat or chemical disinfestations • Breaking seed coat • Cleaning • Division and Sterilization
Propagation techniques	May Include: • Seed • Cuttings • Growing on tissue cultured rubber tree • Division or splitting • Budding • Grafting and Cloning
After care	May Include: • application of preventative fungicides • fertilizers • water and nutrients
Waste	May Include: • Pots • Discarded propagation material • Media waste and chemicals • Waste may be recyclable, re-useable, returnable, or require garbage or toxic handling procedures
Records	May Include: • Number of rubber tree propagated • Source material used • Variety • Clone, batch number and treatments applied
Propagation activities	May Include: • sexual • asexual methods of propagation including tissue culture

Evidence Guide	
Critical Aspects of Competence	A candidate must be able to demonstrate the ability to: • select propagation material • prepare growing media and growing site • implement an appropriate propagation method
Underpinning knowledge and attitudes	Demonstrates knowledge of: • quality specifications for parent rubber Tree and propagation materials • enterprise and industry hygiene standards required for propagation activities • common problems that may occur while performing propagation activities in a controlled environment, and preventative/corrective action that may apply • propagation techniques required for a range of rubber Tree • aftercare requirements for a range of propagated rubber Tree • testing methods applied to propagation media • preferred types of propagation media for different species.
Underpinning skills	Demonstrates skills to: • liaising with other work areas and customers • identifying and assessing hazards in the work area • recognizing and rectifying problems and anomalies with parent rubber Tree, propagation material, propagation media, equipment and materials • propagation techniques for a range of rubber Tree • preparing, mixing and using chemicals as required • Interpreting specifications and industry codes of practice. • Communicating of ideas and information relating to work issues, tasks and problems may be discussed with suppliers, end users and members of the work team. • collecting, analyzing and organizing information relating to propagation schedules and rubber Tree requirements • planning and organizing production plans and daily work instructions • Using of mathematical ideas and techniques to calibrate spray equipment; and calculate production statistics and quantities of treatment to apply. • Applying problem-solving skills by implementing preventative/corrective action or reporting to management. • Using of technology for measuring equipment such as pH probes.
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment
Methods of Assessment	Competence may be assessed through:

	• Practical assessment by direct observation of tasks through simulation/Role-plays • interview /questioning /Written exam/test on underpinning knowledge Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Participate in Workplace Communication**
Unit Code	**IND RPD2 20 0616**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

Elements	Performance Criteria
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 ***storage*** of information are used. 1.7 Personal interaction is carried out clearly and concisely.
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time. 2.2 Own opinions are clearly expressed and those of others are listened to without interruption. 2.3 Meeting inputs are made consistent with the meeting purpose and ***protocols*** established. 2.4 ***Workplace interactions*** are conducted in a courteous manner. 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded. 2.6 Meetings outcomes are interpreted and implemented.
3. Complete relevant work related documents	3.1 Range of ***forms*** relating to conditions of employment is completed accurately and legibly. 3.2 Workplace data is recorded on standard workplace forms and documents. 3.3 Basic mathematical processes are used for routine calculations.

	3.4 Errors in recording information on forms/ documents are identified and properly acted upon. 3.5 Reporting requirements to supervisor are completed according to organizational guidelines.

Variable	Range
Appropriate sources	May include but not limited to: • Team members • Suppliers • Trade personnel • Local government and Industry bodies
Medium	May include but not limited to: • Memorandum • Circular • Notice • Information discussion • Follow-up or verbal instructions & Face to face communication
Storage	May include but not limited to: • Manual filing and computer-based filing systems
Protocols	May include but not limited to: • Observing meeting • Compliance with meeting decisions • Obeying meeting instructions
Workplace interactions	May include but not limited to: • Face to face • Telephone • Electronic and two way radio • Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
Forms	May include but not limited to: • Personnel forms, telephone message forms, safety reports

Evidence Guide	
Critical Aspects of Competency	Demonstrates skills and knowledge to: • Prepare written communication following standard format of the organization • Access information using communication equipment • Make use of relevant terms as an aid to transfer information effectively • Convey information effectively adopting the formal or informal communication
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • Effective communication

	• Different modes of communication • Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities
Underpinning Skills	Demonstrate skills to: • Follow simple spoken language • Perform routine workplace duties following simple written notices • Participate in workplace meetings and discussions • Complete work related documents • Estimate, calculate and record routine workplace measures • Do basic mathematical processes of addition, subtraction, division and multiplication • relate to people of social range in the workplace • Gather and provide information in response to workplace Requirements
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Work in Team Environment**
Unit Code	**IND RPD2 21 0616**
Unit Descriptor	This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

Elements	Performance Criteria
1. Describe team role and scope	1.1 The ***role and objective of the team*** are identified from available ***sources of information***. 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.
2. Identify own role and responsibility within team	2.1 Individual role and responsibilities within the team environment are identified. 2.2 Roles and responsibility of other team members are identified and recognized. 2.3 Reporting relationships within team and external to team are identified.
3. Work as a team member	3.1 Effective and appropriate forms of communications are used and interactions undertaken with team members who contribute to known team activities and objectives. 3.2 Effective and appropriate contributions are made to complement team activities and objectives, based on individual skills and competencies and ***workplace context***. 3.3 Protocols are observed in reporting using standard operating procedures. 3.4 Contribution is made to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.

Variable	Range
Role and objective of team	May include but not limited to: • Work activities in a team environment with enterprise or specific sector • Limited discretion, initiative and judgment maybe demonstrated on the job, either individually or in a team environment
Sources of information	May include but not limited to: • Standard operating and/or other workplace procedures • Job procedures • Machine/equipment manufacturer's specifications and

	instructions • Organizational or external personnel • Client/supplier instructions • Quality standards • OHS and environmental standards
Workplace context	May include but not limited to: • Work procedures and practices • Conditions of work environments • Legislation and industrial agreements • Standard work practice including the storage, safe handling and disposal of chemicals • Safety, environmental, housekeeping and quality guidelines

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Operate in a team to complete workplace activity • Work effectively with others • Convey information in written or oral form • Select and use appropriate workplace language • Follow designated work plan for the job • Report outcomes
Underpinning Knowledge and Attitude	Demonstrate knowledge of: • Communication process • Team structure • Team roles • Group planning and decision making
Underpinning Skills	Demonstrate skills to: • Communicate appropriately, consistent with the culture of the workplace
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Develop Business Practice**
Unit Code	**IND RPD2 22 0616**
Unit Descriptor	This unit covers knowledge, skills and attitude required to establish a business operation from a planned concept. It includes researching the feasibility of establishing a business operation, planning the setting up of the business, implementing the plan and reviewing operations once commenced, customer handling, developing and maintaining business relationships.

Elements	Performance Criteria
1. Identify business opportunities and business skills	1.1 The concept of paradigm shift and means of divergent thinking are elaborated and strategies to look beyond the boundaries are discussed. 1.2 ***Unusual business opportunities*** are identified. 1.3 Feasibility on ***business skills and personal attributes*** is assessed and matched against those perceived as necessary for a particular business opportunity. 1.4 New behavior on how problems can be the pivotal source of business opportunity is elaborated and experience taken. 1.5 Assistance sought with feasibility study of ***specialist and relevant parties*** is discussed, as required. 1.6 Impact of emerging or changing technology, including e-commerce, on business operations is evaluated. 1.7 Practicability of business opportunity is assessed in line with perceived ***business risks***, returns sought, personal preferences and resources available. 1.8 Business plan is revised in accordance with the identified opportunities.
2. Plan for the establishment of business operation	2.1 Organizational structure and operations are determined and documented. 2.2 Procedures are developed and documented to guide operations. 2.3 Financial backing is secured for business operation. 2.4 Business legal and regulatory requirements are identified and compiled. 2.5 ***Human and physical resources*** required to commence business operation are determined.

	2.6 Recruitment and procurement strategies are developed.
3. Implement Business Development Plan	3.1 Physical and human resources are obtained to implement business operation. 3.2 ***Operational unit*** is established to support and coordinate business operation. 3.3 Simulations on the development plan are well discussed and understood. 3.4 Implementation manual is discussed and understood. 3.5 Marketing the business operation is undertaken. 3.6 Monitoring process is developed and implemented for managing operation. 3.7 ***Legal documents*** are carefully maintained and relevant records kept and updated to ensure validity and accessibility. 3.8 Contractual procurement rights for goods and services including ***contracts with relevant people*** are negotiated and secured as required in accordance with the business plan. 3.9 Options for leasing/ownership of business premises are identified and contractual arrangements completed in accordance with the business plan.
4. Review implementation process and take corrective measures	4.1 Review process is developed and implemented for implementation of business operation. 4.2 Improvements in business operation and associated management process are identified. 4.3 Identified improvements are implemented and monitored for effectiveness.
5. Establish contact with customers and clarify needs of customer	5.1 Persuasion strategies are developed and discussed. 5.2 Welcoming customer environment is maintained and Customer is greeted warmly according to enterprise policies and procedures. 5.3 Information is provided to satisfy customer needs. 5.4 Information on customers and service history is gathered for analysis. 5.5 Customer data is maintained to ensure database relevance and currency. 5.6 Customer needs are accurately assessed against the products/services of the enterprise. 5.7 Customer details are documented clearly and accurately in

	required format. 5.8 Negotiations are conducted in a business-like and professional manner. 5.9 Benefits for all parties are maximized in the ***negotiation through use of established techniques*** and in the context of establishing long term relationships. 5.10 The results of negotiations are communicated to appropriate colleagues and stakeholders within appropriate timeframes. 5.11 ***Opportunities to maintain regular contact*** with customers are identified and taken-up.
6. Develop and Maintain Business Relationship	6.1 Features and benefits of products/services provided by the enterprise are described/ recommended to meet customer needs. 6.2 Alternative sources of information/advice are discussed with the customer. 6.3 Information needed is pro-actively sought, reviewed and acted upon to maintain sound business relationships. 6.4 Agreements are honored within the scope of individual responsibility. 6.5 Adjustments to agreements are made in consultation with the customer and information shared with appropriate colleagues. 6.6 Relationships are nurtured through regular contact and use of effective interpersonal and communication styles.

Variable	**Range**
Unusual Business opportunities	May include but not limited to: • Public holidays • Ceremonies • Natural disaster • Campaigns
Business opportunities	May include but not limited to: • Expected financial viability • Skills of operator • Amount and types of finance available • Returns expected or required by owners • Likely return on investment • finance required • Lifestyle issues
Business skills and personal attributes	May include but not limited to: • Technical and/ or specialist skills

	• Managerial skills • Entrepreneurial skills • Taking calculated risk skills • Willingness to take calculated risks • Willingness to work under pressure
Specialist and relevant parties	May include but not limited to: • Chamber of commerce • Financial planners and financial institution representatives, business planning specialists and marketing specialists • Accountants • Lawyers and providers of legal advice • Government agencies • Industry/trade associations • Online gateways • Business brokers/business consultants
Business risks	May include but not limited to: • Occupational health and safety • Environmental risks • Relevant legislative requirements • Security of investment • Market competition • Security of premises/location • Supply and demand • Resources available
Human and physical resources	May include but not limited to: • Software and hardware • Office premises and equipment • Communications equipment • Specialist services through outsourcing, contracting and consultancy • Staff • Vehicles
Operational unit	May include but not limited to: • different departments, sections, teams, divisions, etc. staffed with required personnel and equipped to service and support business
Legal documents	May include but not limited to: • Partnership agreements, constitution documents, statutory books for companies (register of members, register of directors and minute books), certificate of Incorporation, franchise agreements and financial documentation, appropriate software for financial records • Occupational Health Safety (OHS)

	• Recordkeeping including personnel, financial, taxation, and environmental

Contracts with relevant people	May include but not limited to: • business owners, suppliers, employees, agents, land owners, distributors, customers or any person with whom the business has, or seeks to have, a performance-based relationship
Negotiation techniques	May include but not limited to: • Identification of goals, limits • Clarification of needs of all parties • Listening and questioning • Non-verbal communication techniques • Appropriate language and situation • Bargaining • Developing options • Appropriate cultural behavior • Confirming agreements
Opportunities to maintain regular contact	to maintain regular contact with customers may include: • Informal social occasions • Ceremonies • Exhibitions • Industry functions • Association membership • Co-operative promotions • Program of regular telephone contact

Evidence Guide	
Critical Aspects of Competence	Demonstrates knowledge and skills in: • that a business operation has been planned and implemented from initial research of feasibility of the business and completion of the plan, through implementing the plan and commencing operations • the ability to evaluate the results of research and assess the likely viability and practicability of a business opportunity, taking into account the current business/market climate and resources available • treating customers in a courteous and professional manner • building and maintaining relationships to achieve successful business outcomes
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: • Paradigm shift • Unusual business opportunities • Feasibility study • Business structure

	• Federal and regional government legislative requirements affecting business operations, especially in regard to OHS, EEO, industrial relations and anti-discrimination • Procurement and recruitment strategy • Operational unit • Monitoring process • Business systems and operations • Relevant marketing, management, sales and financial concepts • Options for financing • Business premises and ownership • Lease • Methods for researching business opportunities • Methods of identifying relevant specialist services to complement the business • Advertising and promotion • Distribution and logistics • Terms and conditions in contractual agreement • Record keeping duties • Operational factors relating to the business (provision of professional services, products) • Customer need assessment • Source of information • Operational knowledge of enterprise policies and procedures in regard to: ➢ customer service ➢ dealing with difficult customers ➢ maintenance of customer databases ➢ allocated duties/responsibilities ➢ General knowledge of the range of enterprise merchandise and services, location of telephone extensions and departments/sections • Basic operational knowledge of industry/workplace codes of practice in relation to customer service • negotiation and communication techniques appropriate to negotiations that may be of significant commercial value
Underpinning Skills	Demonstrate skills of: • Hunting and exploiting unusual business opportunities • Interpreting legal requirements, company policies and procedures and immediate, day-to-day demands • Conducting feasibility study • Developing new behavior • Using technology • Marketing skills • Business planning skills

	• Entrepreneurial skills • Time management skills • Customer handling skills • Communication skills including questioning, clarifying, reporting, and giving and receiving constructive feedback • Technical and analytical skills to interpret business documents, reports and financial statements and projections • Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • Problem solving skills to develop contingency plans • Using computers and software packages to record and manage data and to produce reports • Interpreting business information, numeracy skills for data analysis to aid research • Negotiation to conduct business activities • Research to identify a business opportunity and to conduct a feasibility study • Analytical skills to assess personal attributes and to identify business risks • Observation skills for identifying appropriate people, resources and to monitor work • Persuasion and networking skills • Welcoming customers • Information seeking skills to collect, organize and understand information related to collating and analyzing customer information to identify needs • Establish diagnostic processes which identify and recommend improvements to customer service
Resource Implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rubber Tree Plantation & Development Level II	
Unit Title	**Standardize and Sustain 3S**
Unit Code	**IND RPD2 23 0616**
Unit Descriptor	This unit of competence covers the knowledge, skills and attitudes required by worker to standardize and sustain 3S to his/her workplace. It covers responsibility for the day- to-day operations of the workplace and ensuring that continuous improvements of Kaizen elements are initiated and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	1.1 Work instructions are used to determine job requirements, including method, material and equipment. 1.2 Job specifications are read and interpreted following working manual. 1.3 ***OHS requirements***, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work. 1.4 ***Safety equipment and tools*** are identified and checked for safe and effective operation. 1.5 ***Tools and equipment*** are prepared and used to implement 3S.
2. Standardize 3S.	2.1 Plan is prepared and used to standardize 3S activities. 2.2 ***Tools and techniques*** to standardize 3S are prepared and implemented based on ***relevant procedures***. 2.3 Checklists are followed for standardize activities and ***reported*** to ***relevant personnel***. 2.4 The workplace is kept to the specified standard. 2.5 Problems are avoided by standardizing activities.
3. Sustain 3S.	3.1 Plan is prepared and followed to standardize 3S activities. 3.2 ***Tools and techniques*** to sustain 3S are discussed, prepared and implemented based on relevant procedures. 3.3 Workplace is inspected regularly for compliance to specified standard and sustainability of 3S techniques. 3.4 Workplace is cleaned up after completion of job and before commencing next job or end of shift. 3.5 Situations are identified where compliance to standards is unlikely and actions specified in procedures are taken. 3.6 Improvements are recommended to lift the level of compliance in the workplace. 3.7 Checklists are followed to sustain activities and report to

	relevant personnel. 3.8 Problems are avoided by sustaining activities.

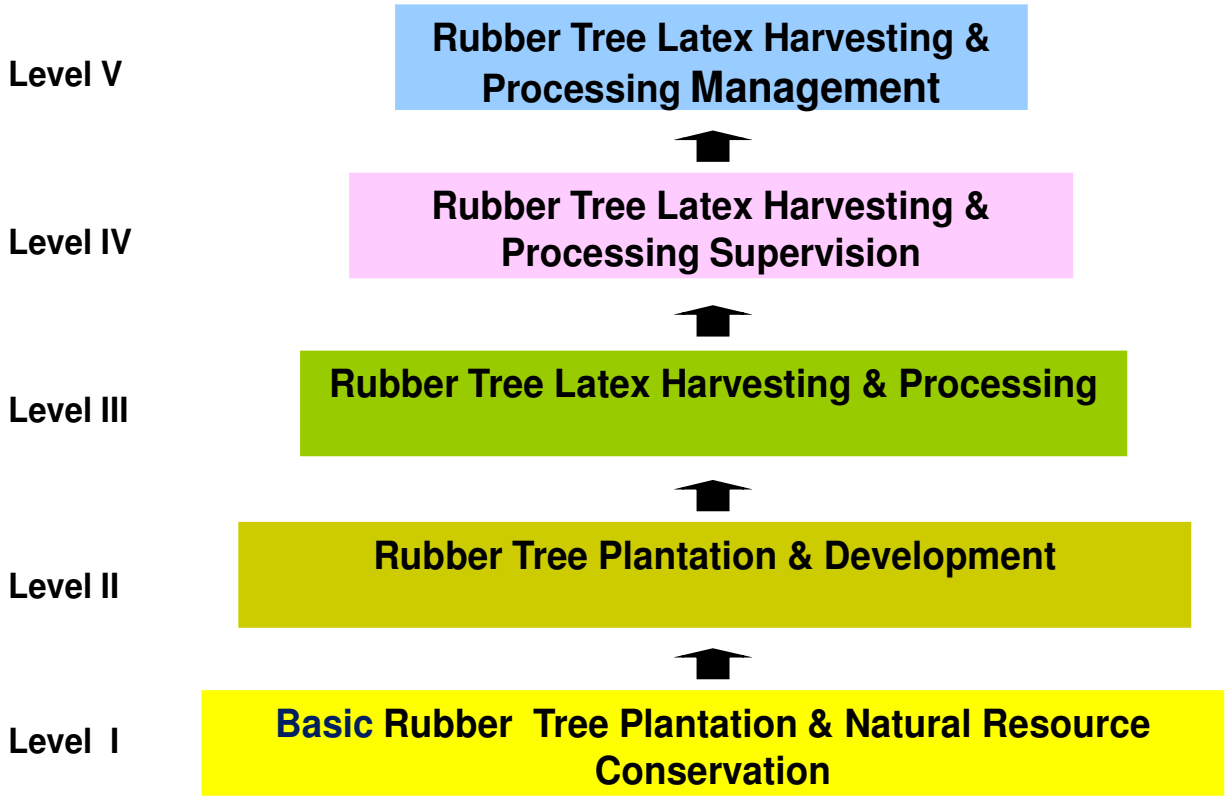
Variable	Range
OHS requirements	May include but not limited to: • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.
Safety equipment and tools	May include but not limited to: • dust masks / goggles • glove • working cloth • first aid and safety shoes
Tools and equipment	May include but not limited to: • paint • hook • sticker • signboard • nails • shelves • chip wood • sponge • broom • pencil • shadow board/ tools board
Tools and techniques	May include but not limited to: • 5S Job Cycle Charts • Visual 5S • The Five Minute 5S • Standardization level checklist • 5S checklist

	• The five Whys and one How approach(5W1H) • Suspension • Incorporation and Use Elimination
Relevant procedures	May include but not limited to: • Assign 3S responsibilities • Integrate 3S duties into regular work duties • Check on 3S maintenance level • OHS measures such as signage, symbols / coding and labeling of workplace and equipment • Creating conditions to sustain your plans • Roles in implementation
Reporting	May include but not limited to: • verbal responses • data entry into enterprise database • brief written reports using enterprise report formats
Relevant personnel	May include but not limited to: • supervisors, managers and quality managers • administrative, laboratory and production personnel • internal/external contractors, customers and suppliers
Tools and techniques	May include but not limited to: • 5S slogans • 5S posters • 5S photo exhibits and storyboards • 5S newsletter • 5S maps • 5S pocket manuals • 5S department/benchmarking tours • 5S months • 5S audit • Awarding system • Big cleaning day • Patrolling system may include: ➢ Top management Patrol ➢ 5S Committee members and Promotion office Patrol ➢ Mutual patrol ➢ Self-patrol ➢ Checklist patrol ➢ Camera patrol

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge to: • Discuss the relationship between Kaizen elements. • Standardize and sustain 3S activities by applying appropriate tools and techniques.

Underpinning Knowledge and Attitudes	Demonstrates knowledge of: • Elements of Kaizen • Ways to improve Kaizen elements • Benefits of improving kaizen elements • Relationship between Kaizen elements • The fourth pillar of 5S • Benefits of standardizing and sustaining 3S • Procedures for standardizing and sustaining 3S activities • Tools and techniques to sustain 3S • Relevant Occupational Health and Safety (OHS) and environment requirements • Plan and report • Method of communication
Underpinning Skills	Demonstrates skills of: • improving Kaizen elements by applying 5S • standardizing and sustaining procedures and techniques to avoid problems • technical drawing • procedures to standardizing 3S activities • analyzing and preparing shop layout of the workplace • standardizing and sustaining checklists • preparing and implementing tools and techniques to sustain 3S • working with others • reading and interpreting documents • observing situations • solving problems by applying 5S • communication skills • preparing labels, slogans, etc. • gathering evidence by using different means • using Kaizen board properly in accordance the procedure • reporting activities and results using report formats
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competence may be assessed through: • Interview / Written Test • Observation / Demonstration with Oral Questioning
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Sector: INDUSTRY DEVELOPMENT
Sub-Sector: RUBBER TREE DEVELOPMENT



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This Occupational Standard was developed on June 2016 at Center of Excellence for Engineering (CEE), Addis Ababa, Ethiopia.

COMMENT TEMPLATE

The Federal TVET Agency values your feedback of the document.
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