



TECHNICAL &
VOCATIONAL
EDUCATION &
TRAINING



National Competency Standard for AGRICULTURE

Standard Code: FNA04S18V1



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PREFACE

The ADB Loan 2028 MLD, Employment Skills Training Project's (ESTP) objective is to increase the number of Maldivians, men and women, actively participating in the labor force, employed and self-employed. The Project will support the expansion of demand driven employment-oriented skills training in priority occupations and improve the capacity to develop and deliver Competency Based Skill Training (CBST). The Project aims to (i) provide youth with employment-oriented skills training; (ii) improve public perception of training and employment in locally available skills-oriented occupations; (iii) make available employment-related information to more Maldivians; and (iv) strengthen the capacity for labor administration and for labor market analysis.

The objective of the project is to deliver CBST programs to satisfy employer demand-driven needs. The National Competency Standards (NCS) provide the base for this training. Initially training will be focused on five key sectors: tourism, fisheries and agriculture, transport, construction and the social sectors. These sectors are included as priority sectors in the national development plan and play a vital role in the continued economic growth of the country.

The NCS are developed in consultation with Employment Sector Councils representing employers. They are designed using a consensus format endorsed by the Maldives Accreditation Board (MAB) to maintain uniformity of approach and the consistency of content amongst occupations. This single format also simplifies benchmarking the NCS against relevant regional and international standards.

NCS specify the standards of performance of a competent worker and the various contexts in which the work may take place. NCS also describes the knowledge, skills and attitudes required in a particular occupation. They provide explicit advice to assessors and employers regarding the knowledge, skills and attitudes to be demonstrated by the candidates seeking formal recognition for the competency acquired following training or through work experience. By sharing this information, all participants in the training process have the same understanding of the training required and the standard to be reached for certification. Certification also becomes portable and can be recognized by other employers and in other countries with similar standards.

NCS are the foundation for the implementation of the Technical and Vocational Education and Training (TVET) system in Maldives. They ensure that all skills, regardless of where or how they were developed can be assessed and recognized. They also form the foundation for certifying skills in the Maldives National Qualification Framework (MNQF).

NCS are developed by the TVET Section of Ministry of Higher Education, Employment and Social Security. The NCS are endorsed by the Employment Sector Councils of the respective sectors and validated by the Maldives Accreditation Board.

KEY FOR CODING

Coding Competency Standards and Related Materials

DESCRIPTION	REPRESENTED BY
Industry Sector as per ESC (Three letters)	Construction Sector (CON) Fisheries and Agriculture Sector (FNA) Transport sector (TRN) Tourism Sector (TOU) Social Sector (SOC) Foundation (FOU)
Competency Standard	S
Occupation with in a industry Sector	Two digits 01-99
Unit	U
Common Competency	1
Core Competency	2
Optional/ Elective Competency	3
Assessment Resources Materials	A
Learning Resources Materials	L
Curricula	C
Qualification	Q1, Q2 etc
MNQF level of Qualification	L1, L2 etc
Version Number	V1, V2 etc
Year of endorsement of standard, qualification	By two digits Example- 07

1. Endorsement Application for Qualification 01

2. NATIONAL CERTIFICATE I IN AGRICULTURE

3. Qualification code: FNA04SQ1L218

4. Total Number of Credits: 12

4. To develop skilled and trained farmers and farmhands. The agriculture sector needs well trained and qualified farmers and field officers, to further enhance its growth and expansion. The holders of this qualification will be will be competent to work in the agriculture Sector as an Assistant Agriculture officer, Assistant horticulture officer, field officer, or farmer. The level III qualification presented here will facilitate preparing students to the entry level workplace tasks and the competency units are mapped in such a way to fulfill the knowledge and skills requirements of the agriculture officer on and off the field.

5. Regulations for the qualification

- National Certificate I in agriculture will be awarded to those who are competent in units 1+2+4+8

6. Schedule of Units

No.	Unit Title	Code
1	Working effectively in an Agricultural organization	SOC ₀₄ S ₁ U ₀₁ V ₁
2	Applying occupational health and safety procedures	SOC ₀₄ S ₁ U ₀₂ V ₁
4	Land maintenance and preparation	SOC ₀₄ S ₁ U ₀₄ V ₁
8	Fruits and vegetable production	SOC ₀₄ S ₁ U ₀₈ V ₁

7. Accreditation requirements

The training provider should have a demonstration farm setup area and a training facility to provide the trainees the hands-on experience related to this qualification.

8. Recommended sequencing of units

As appearing under the section 06

1. Endorsement Application for Qualification 02		
2. NATIONAL CERTIFICATE III IN AGRICULTURE		
3. Qualification code: FNA04SQL318	Total Number of Credits: 52	
<p>4. Purpose of the qualification the purpose being to develop skilled personal in the mentioned areas, with certified levels of knowledge on agriculture, to reduce the dependency on foreign labor and consultants to develop and carry out simple on farm activities and project document development. The holders of the level IV qualifications are expected to possess all the relevant knowledge and skills to work as an Assistant Agriculture officer, senior field officer, Assistant plant protection officer, Assistant agriculture officer.</p>		
5. Regulations for the qualification	National Certificate III in Agriculture will be awarded to those who are competent in units 1+2+3+4+5+6+8+9+15+16	
6. Schedule of Units		
Unit No.	Unit Title	Code
1	Working effectively in an Agricultural organization	FNA ₀₄ S ₁ U ₀₁ V ₁
2	Applying occupational health and safety procedures	FNA ₀₄ S ₁ U ₀₂ V ₁
4	Land maintenance and preparation	FNA ₀₄ S ₁ U ₀₄ V ₁
8	Fruits and vegetable production	FNA ₀₄ S ₁ U ₀₈ V ₁
3	Introduction to basic agricultural mechanics	FNA ₀₄ S ₁ U ₀₃ V ₁
5	Designing suitable models' goat and poultry keeping	FNA ₀₄ S ₁ U ₀₅ V ₁
6	Setting up a basic hydroponic system	FNA ₀₄ S ₁ U ₀₆ V ₁
9	Application of fertilizers and soil improves	FNA ₀₄ S ₁ U ₀₉ V ₁
15	Planting and propagation	FNA ₀₄ S ₁ U ₁₅ V ₁
16	Pest Management	FNA ₀₄ S ₁ U ₁₆ V ₁
7. Accreditation requirements	The training provider should have a demonstration farm setup area and a training facility to provide the trainees the hands-on experience related to this qualification. In addition to this simulated, or actual organizational work environment should be provided.	
8. Recommended sequencing of units	As appearing under the section 06	

2. Endorsement Application for Qualification 03

2. NATIONAL CERTIFICATE IV IN AGRICULTURE

3. Qualification code: FNA04SQL418

Total Number of Credits: 172

4. Purpose of the qualification the purpose being to develop skilled personal in the mentioned areas, with certified levels of knowledge on agriculture, to reduce the dependency on foreign labor and consultants to develop and carry out simple on farm activities and project document development. The holders of the level IV qualifications are expected to possess all the relevant knowledge and skills to work as an Assistant Agriculture officer, senior field officer, Assistant plant protection officer, Assistant agriculture officer, assistant agricultural engineer, Agricultural Products Sales officer, assistant project officer

5. Regulations for the qualification

- National Certificate IV in agriculture will be awarded to those who are competent in units
1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18

6. Schedule of Units

Unit No.	Unit Title	Unit Code
1	Working effectively in an Agricultural organization	FNA ₀₄ S ₁ U ₀₁ V ₁
2	Applying occupational health and safety procedures	FNA ₀₄ S ₁ U ₀₂ V ₁
3	Introduction to basic agricultural mechanics	FNA ₀₄ S ₃ U ₀₃ V ₁
4	Land maintenance and preparation (planting bed, pit and container)	FNA ₀₄ S ₁ U ₀₄ V ₁
5	Designing suitable models for goat and poultry keeping.	FNA ₀₄ S ₃ U ₀₅ V ₁
6	Setting up a basic hydroponic system	FNA ₀₄ S ₃ U ₀₆ V ₁
7	Maintaining a material and equipment inventory	FNA ₀₄ S ₂ U ₀₇ V ₁
8	Fruits and vegetable production	FNA ₀₄ S ₁ U ₀₈ V ₁
9	Application of fertilizers and soil improves	FNA ₀₄ S ₃ U ₀₉ V ₁
10	Irrigation setup	FNA ₀₄ S ₂ U ₁₀ V ₁
11	Harvesting and handling	FNA ₀₄ S ₂ U ₁₁ V ₁
12	Managing finance	FNA ₀₄ S ₂ U ₁₂ V ₁
13	Marketing of produce and creating supply channels	FNA ₀₄ S ₂ U ₁₃ V ₁

14	Sustainable natural resource and environmental management	FNA ₀₄ S ₂ U ₁₄ V ₁
15	Planting and propagation	FNA ₀₄ S ₃ U ₁₅ V ₁
16	Pest Management	FNA ₀₄ S ₃ U ₁₆ V ₁
17	Planning for agricultural work tasks	FNA ₀₄ S ₂ U ₁₇ V ₁
18	Managing soil quality	FNA ₀₄ S ₂ U ₁₈ V ₁
7. Accreditation requirements		The training provider should have access to a demonstration farm setup area and a training facility to provide the trainees the hands-on experience related to this qualification. In addition to this simulated, or actual organizational work environment should be provided, marketing, packaging practices, exposure to equipment and machineries should be provided.
8. Recommended sequencing of units		As appearing under the section 06

Units Details

Unit Title	Unit Title	Code	Level	No of credits
1	Working effectively in an Agricultural organization	FNA ₀₄ S ₁ U ₀₁ V ₁	2	3
2	Applying occupational health and safety procedures	FNA ₀₄ S ₁ U ₀₂ V ₁	2	3
3	Introduction to basic agricultural mechanics	FNA ₀₄ S ₂ U ₀₃ V ₁	3	3
4	Land maintenance and preparation (planting bed, pit and container)	FNA ₀₄ S ₁ U ₀₄ V ₁	2	3
5	Designing suitable models for goat and poultry keeping.	FNA ₀₄ S ₂ U ₀₅ V ₁	3	6
6	Setting up a basic hydroponic system	FNA ₀₄ S ₂ U ₀₆ V ₁	3	6
7	Maintaining a material and equipment inventory	FNA ₀₄ S ₂ U ₀₇ V ₁	4	15
8	Fruits and vegetable production	FNA ₀₄ S ₁ U ₀₈ V ₁	2	3
9	Application of fertilizers and soil improves	FNA ₀₄ S ₁ U ₀₉ V ₁	3	6
10	Irrigation setup	FNA ₀₄ S ₂ U ₁₀ V ₁	3	15
11	Harvesting and handling	FNA ₀₄ S ₂ U ₁₁ V ₁	4	15
12	Managing finance	FNA ₀₄ S ₂ U ₁₂ V ₁	4	15
13	Marketing of produce and creating supply channels	FNA ₀₄ S ₂ U ₁₃ V ₁	4	15
14	Sustainable natural resource and environmental management	FNA ₀₄ S ₂ U ₁₄ V ₁	4	15
15	Planting and propagation	FNA ₀₄ S ₁ U ₁₅ V ₁	2	6
16	Pest Management	FNA ₀₄ S ₁ U ₁₆ V ₁	3	6
17	Planning for agricultural work tasks	FNA ₀₄ S ₂ U ₁₇ V ₁	2	15
18	Managing soil quality	FNA ₀₄ S ₂ U ₀₁₈ V ₁	4	15

Packaging of National Qualifications:

National Certificate I in Agriculture will be awarded to those who are competent in units.

1+2+4+8

Qualification Code: FNA₀₄SQ₁L₂₁₈

National Certificate III in Agriculture will be awarded to those who are competent in units

1+2+3+4+5+6+8+9+15+16

Qualification Code: FNA₀₄SQ₂L₃₁₈

National Certificate IV Agriculture will be awarded to those who are competent in units

1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18

Qualification Code: FNA₀₄SQ₃L₄₁₈

Competency Standard for AGRICULTURE

Unit No	Unit Title
1	Working effectively in an Agricultural organization
2	Applying occupational health and safety procedures
3	Introduction to basic agricultural mechanics
4	Land maintenance and preparation (planting bed, pit and container)
5	Designing suitable models for goat and poultry keeping.
6	Setting up a basic hydroponic system
7	Maintaining a material and equipment inventory
8	Fruits and vegetable production
9	Application of fertilizers and soil improves
10	Irrigation setup
11	Harvesting and handling
12	Managing finance
13	Marketing of produce and creating supply channels
14	Sustainable natural resource and environmental management
15	Planting and propagation
16	Pest Management
17	Planning for agricultural work tasks
18	Managing soil quality

DESCRIPTION OF AN AGRICULTURE OFFICER

An Agricultural field officer can either provide technical support to farmers in need and also can be actively involved in farming. They could work closely with the farmers and could aid in maximizing the reach of the Agriculture ministry to farmers. But mostly they are expected work independently as a farmer

Skills & Interests

Agricultural officers need to be:

- Familiarize with agriculture in the particular target island
- Good at communicating with people
- able to explain technical issues clearly,
- Familiar with different types of crops and pest and disease issues.
- Be physically involved in activities as well as have some theoretical understanding

COMPETENCY STANDARD DEVELOPMENT PROCESS

The competencies were determined based on the analysis and past experience, of the tasks expected to be performed by the agriculture officer in the field. The task analysis was based on the existing job descriptions used in both private and public sector. Competency standards used for similar type of training in other countries were also examined.

UNIT 01

UNITE TITLE	Working effectively in an Agricultural organization				
DESCRIPTOR	This unit defines the competency required to assimilate into the agriculture sector. This is fundamental for working in a public or private organization.				
CODE	FNA04S1U01V1	Level	1	Credit	3

ELEMENTS OF COMPETENCIES	PERFORMANCE CRITERIA
1. Comply with general policies and procedures	1.1 Roles of key players of the agricultural organization are determined and briefly explained 1.2 Career choices and options are determined 1.3 Policies and procedures are complied with, as directed by supervisor/top policy makers. 1.4 Policies including, attendance, uniform personal health and safety requirements, maintaining professionalism in handling confidential data and information, managing general office documents etc are to be assessed.
2. Promote the organization and the agriculture sector in a Manner consistent with the organization mission	2.1 Role of the technical support officers, tasks within the organization is briefly explained 2.2 Organization is promoted in a positive way
3. Identify the approach and resources available related to agriculture that can be utilized by the organization	3.1 Capable people with sufficient technical knowledge and capacities within the organization are identified. 3.2 Machineries and Equipment, location and service requirements are identified according to organizational requirements

range statement

Key player

May include but are not limited to: Agricultural organizations, vendors of agricultural products and services, agricultural professional bodies in the private or international sector, industry publications and Government Departments involved in agriculture industry promotion, employer organizations, and relevant unions.

Clients

Variables may include but are not limited to: internal and external customers, employers and employees.

Organizational

Variables may include but are not limited to: Equal employment opportunity, anti-discrimination, occupational health and safety policies, procedures and ethical work practices.

Size and type of organization and organizational values and culture may vary.

Agriculture Department

The structure of the agriculture department may be a separate branch, department, division or an integrated function of an organization.

Agriculture Components

Can include all forms of publications or other communications packages.

Client user

May be a department within an organization or a third party and so the relationship and ease of access will vary.

Documentation and Reporting

Audit trails, national and international standards and regulations, varietal monitoring and control, stakeholder agreements.

Occupational health and Safety standards

As per company, statutory formalities and requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Organisational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best practice examples from industry will be used.

Assessment Guide

Forms of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in a workplace or a simulated working environment.

Critical aspects for Assessment

Assessment must confirm the ability to assimilate into the Agriculture department by demonstrating organizational values through the organizational code of conduct in work place interactions.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Basic principles of ethical practice when promoting the organization in a manner consistent with the organisational mission• Broad knowledge of organisational code of conduct and values that are consistent with the organizational mission• Basic understanding of organizational systems, current industry accepted technological and field products with broad knowledge of general features and capabilities	<ul style="list-style-type: none">• Reading and writing at a level where general workplace documents can be written and understood.• Verbal communication is clear and precise, for example when explaining the role of key players in the Agriculture organization.• Problem-solving is limited to basic known problems within normal routines, for example, when complying with policies and procedures as directed by supervisor

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- Broad knowledge base of product application directions

- Basic analysis skills in relation to normal routine work
 - Basic skills in interpreting technical information, for example, when complying with policies and procedures as directed.
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UNIT 2

Unit Title	Apply occupational health and safety procedures				
Descriptor	This unit defines the competency required to support the organization's Occupational Health and Safety principles and practices.				
Code	FNA04S1U02V1	Level	1	Credit	3

Element of competencies	Performance Criteria
1. Determine Occupational Health and Safety (OH&S) issues relating to immediate work environment	<p>1.1 Occupational Health and Safety issues in the immediate workplace are assessed and action to rectify the problem is taken or reported to supervisor</p> <p>1.2 Workplace and OH&S procedures are followed to ensure safe working environment</p> <p>1.3 On farm, risk factors would include, machineries and tools, chemicals live animals and zoonotic diseases.</p>
2. Document and disseminate Occupational Health & Safety requirements	<p>2.1 Information relating to Occupational Health and Safety regulations and requirements are obtained</p> <p>2.2 OH&S regulations impacting upon the common locations of interaction are determined and documented</p> <p>2.3 Documents are submitted to supervisor for verification</p> <p>2.4 Occupational Health and Safety documents are provided to all work stations, this should include a list of personal safety items based on the line of work.</p> <p>2.5 Occupational Health and Safety documents relating to Agriculture are issued and updated.</p>
3. Provide basic ergonomic advice	<p>3.1 Ergonomic requirements of organization are assessed</p> <p>3.2 Advice is provided based on organizations requirement, workplace policies and the latest OH&S information</p> <p>3.3 Advice is documented and passed on to supervisor</p>
4. Transportation	<p>4.1 Ability to swim or float when in water, since main mode of transportation in Maldives is by sea.</p> <p>4.2 Knowledge on basic operation of general vehicles on an island. (motor cycles, trailer bikes, pickup)</p>

	4.3 Knowledge of sea transportation network In Maldives.(can be site specific)
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Range Statement

Organisational

Variables may include, but are not limited to: Occupational Health and Safety legislation; organization safety procedures; work stations and work environment procedures; presence and impact of OH&S manager, national level policies.

Advice on ergonomics

Includes: Occupational Health and Safety procedures; using and cleaning Visual Display Units (VDUs); advice on footrests, exercises, times for breaks, armrests, chairs, equipment cleaning and maintenance, disposal and handling guides for specific materials.

Literacy skills

In relation to work place documentation may vary

OH and S standard

As per company, statutory and organization requirements. Ergonomic and environmental factors such as a laboratory or a quarantine facility as well as a normal office environment must be considered during the demonstration of this competency as well as Occupational Health and Safety guidelines related to use of screen-based equipment, computing equipment and peripherals, and ergonomic work stations, security procedures and customization requirements.

Organisational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best practice examples from industry will be used.

Quality process

Some organizations may be quality certified and have well-documented standards for addressing quality while others will not.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Assessment must confirm the ability to comply with Occupational Health and Safety requirements relating to the use of computing equipment through the practical demonstration of the identification of unsafe practices and taking action to correct them.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• General ergonomic principles to avoid back, wrist and eye strain and other physical injuries caused by equipment and machineries used.• Procedures and exercises for avoiding strain and injury• Current business practices in relation to preparing reports• Broad knowledge of Organizational Health and Safety requirements in relation to work safety, environmental factors and ergonomic considerations	<ul style="list-style-type: none">• Reading and writing are at a level where basic workplace documents are understood and presented• Questioning and active listening is employed to confirm information• Plain English literacy and communication skills in relation to dealing with clients and team members• Problem solving skills for a defined range of predictable problems

UNIT 3

Unit Title	Introduction to basic agricultural mechanics				
Descriptor	This unit defines the competency required to correctly setup a shade house, doing basic construction and plumbing work and identify the important tools involved in agricultural field work.				
Code	FNA04S2U03V1	Level	3	Credit	3

Element of competencies	Performance Criteria
1. Create a structural drawing of the shade house.	<p>1.1 Identify the following from a technical drawing of a structure</p> <ul style="list-style-type: none"> • Square feet of the building • Height of the building • Number of rafter/trusses used or required • Scale of the drawing <p>1.2 Preparing a basic drawing with measurements indicated.</p> <p>1.3 Identifying the common building materials used based on requirement.</p>
2. Materials and tools used according to design and requirement.	<p>2.1 Identify and explain the uses of the following tools</p> <ul style="list-style-type: none"> • Saw/table saw/jig saw • Cutoff • Welding equipment • General tools (screw drivers, wrench etc) • Petrol/electrical pumps and small generators • Shade nets of different shade levels • Polythene and other roofing materials • GI sheets • Farming tools (spade, shovel, wheel burrow etc)
3. Safety measure while using the equipment.	<p>3.1 Demonstrate how to safely setup and turn off welding and cutoff equipment.</p> <p>3.2 Identify the safety and operational procedures and service intervals based on machinery or equipment operators' manual.</p>

4. Plumbing and concreting	4.1 Demonstrate the following skills: <ul style="list-style-type: none">• Soldering/sweating a copper joint• Cementing PVC fittings• Threading black pipe• Preparing concrete for “foundation” base• Constructing forms• Pouring concrete, finishing and curing.
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Range Statement

The Range of Variables statement contextualizes the unit of competence and provides a focus for assessment. The information provided is intended to define the scope of assessment and to assist assessors define the performance to be achieved by an individual in a given workplace.

Materials and equipment

Variables may include but are not limited to personal preference or market availability.

Document (Drawings and item specifications)

Variables may include but are not limited to: software used for the document preparations and market availability of items.

Organisational

Variables may include but are not limited to: Procurement of items as per organization guidelines

Workplace environment

May involve two entirely different working environments. This in case would require different set of guidelines and procedures.

Documentation and Reporting

Documentation for quality control may follow national standards which are handles by related authorities.(building codes of Housing ministry). Building standards, quality control, project management and report writing styles will vary according to organisational approach, information gathering processes may have associated templates.

Standards and Procedures

Will vary from formal procedures that must be adhered to with check points and sign offs with documented procedures and templates.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of Assessment

Assessment must confirm the ability to complete operations stated under basic Agricultural mechanics

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Preparing simple illustrations• Use or purpose of different equipment, tools, machineries and materials.• Taking precautionary safety measures• Creating small plumbing networks and doing basic construction.	<ul style="list-style-type: none">• Familiarizing with illustration based computer software and basic methodologies involved in preparing structural drawings.• Low level decision making in relation to a limited range of specific areas like material selection.• Machinery and equipment operation maintenance skill• Masonry and plumbing skills

UNIT 4

Unit Title	Land maintenance and preparation				
Descriptor	This unit defines the competency required to decide good soils for planting, common methods used in doing field agriculture.				
Code	FNAO4S1U04V1	Level	1	Credit	3

Element of competencies	Performance Criteria
1- Choosing land and character to look for	<p>1.1 Knowing the the importance of a good structure for a productive soil.</p> <p>1.2 Explain the importance of pH in relation to nutrient uptake.</p> <p>1.3 Realize the importance of soil organisms.</p> <p>1.4 Explain well all the important characteristics of a Maldivian soil.</p>
2- Preparing soil for cultivation	<p>2.1 Identify and explain the uses of the following in land preparation</p> <ul style="list-style-type: none">• Soil• Compost• Shovel• Spade• Water• Measuring tape
3- Container selection and preparation	<p>3.1 Demonstrate how to setup a container to grow plants.</p> <p>3.2 Identify the procedures and preparation of the potting mix to be used.</p>
4- Setting up a bed and pit method for planting.	<p>4.1 List down the steps involved in site selection</p> <p>4.2 Identify and explain the type of crops suitable for this method.</p> <p>4.3 Demonstrate the steps involved in preparing a pit and bed to grow a given set of crops.</p>

Range Statement

The information provided is intended to define the scope of assessment and to assist assessors define the performance to be achieved by an individual in a given workplace.

Materials and equipment

Variables may include but are not limited to personal preference or market availability but are subject to crop selection and growing conditions.

Document (preparing a layout design of the farm)

Variables may include but are not limited to: software used for the document preparations

Organisational

Variables may include but are not limited to: Procurement of items and standards in land preparation methods as per organization guidelines.

Workplace environment

May involve two entirely different working environments. This in case would require different set of guidelines and procedures.

Documentation and Reporting

Documentation for quality control may follow national standards, which are handles by related authorities.(council regulations on land). Standards, quality control, project management and report writing styles will vary according to organisational approach, information gathering processes may have associated templates.

OH & S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Standards and Procedures

Will vary from formal procedures that must be adhered to with check points and sign offs with documented procedures and templates.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of Assessment

Assessment must confirm the ability to adhere to specifics stated in preparation methods which are often tied to a regulation.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Selection of suitable land for agriculture.• Soil preparation and conditioning.• Knowledge of preparing own potting mixes for planting.• Standards involved in setting up beds and pit for field growing.• Strategic farm designing to maximize available space.	<ul style="list-style-type: none">• Improving the skill of visual observation in determining soil types and condition.• Deducing how much of what is required to start cultivation in an area thus helping in cost reduction.• Devising plans to attain maximum yield from a given area of space for a crop.• Familiarizing with use of farm tools and equipment.

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UNIT 5

Unite Title	Designing suitable models goat and poultry keeping.				
Descriptor	This unit defines the competency required in preparing designs for livestock keeping models. The unit will emphasize on the practices involved in preparing poultry and goat keeping sheds and the type of purpose and suitable breeds.				
Code	FNA04S2U05V1	Level	3	Credit	6

Element of competencies	Performance Criteria
1- Land/location selection	1.1 Understanding the resting patterns and shade require for the target animals. 1.2 Providing the minimum required amount of land per animal.
2- Breed selection	2.1 Identify and explain the following <ul style="list-style-type: none"> • Broilers • Layers • Dairy • Meat • Highline brown • Jamunapaaree
3- Fodder selection	3.1 Demonstrate the selection of fodder plants and material for goats and poultry. 3.2 Explain the reasons involved in the selection process mentioned for 3.1
4- Shed designing	4.4 Specify a suitable method for a model site. 4.5 List down the steps involved in site selection for shed. 4.6 Identify and explain the type of raw materials suitable for the selected method. 4.7 Preparing an illustration for a goat and poultry shed.

Range Statement

Breed

Variables may include, but are not limited to: commercial breeds, organizational specific breeds or varietal selection methodologies.

Land/location

Variables may include, but are not limited to: Habited islands. May include uninhabited islands or large scale producers as well.

Fodder

Will include locally available plant materials and imported commercial feed.

Organization

Variables may include, but are not limited to: contacting arrangements relating to material purchasing; licensing requirements and supplier options; storage and retrieval of products storage equipment and documentation, testing standards. Requirements may vary.

Client

May be a department within the organization or a third party and so the relation and ease of access will vary.

Development methods/tools

Will vary from the traditional Systems with little or no formalization to a very well structured design.

OH & S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Organizational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best-practice examples from industry will be used.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of Assessment

Assessment must confirm the ability to adhere to specifics stated in preparation methods which are often tied to a regulation.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Selection of suitable land for livestock keeping.• Fodder selection• Knowledge of preparing own potting mixes for planting.• Standards involved in setting up sheds in habited islands.• Strategic farm designing to maximize available space.	<ul style="list-style-type: none">• Create awareness to the importance of accessibility to water, feed and shade.• Selection of suitable fodder plants and materials to enhance production.• The use of feed according to the life stage of animals.• Devising suitable models according to the available area of land.• Familiarizing with use of farm tools and equipment.

UNIT 6

Unite Title	Setting up a basic hydroponic system				
Descriptor	This unit defines the competency required in preparing design for basic hydroponic system and understanding the principle involved.				
Code	FNA04S2U06V1	Level	3	Credit	6

Element of competencies	Performance Criteria
1- Preparing a hydroponic solution	1.1 Knowing the mixing ratios 1.2 Explain the importance of pH in relation to nutrient uptake. 1.3 Realize the importance of water quality 1.4 Explain well all the different characteristics of rain water and ground water
2- Preparing a pipe system	2.1 Identify and explain the uses of the following used in system preparation <ul style="list-style-type: none"> • PVC Pipes, joints adhesives. • Cutting equipment • Sponge / growing media • Nutrient solution • EC and PH meters • Pumps and water tank • Related crops
3- Stand and shade	3.1 Demonstrate how to setup a stand to support the system. 3.2 Design a small shade with a list of suitable materials required.

Range Statement

Seed Varieties

Variables may include, but are not limited to: commercial varieties, organizational specific varieties or varietal selection methodologies.

Land/location

Variables may include, but are not limited to: Habited islands. May include uninhabited islands or large scale producers as well.

Type of system

Will depend on requirement (home garden or commercial production) but are not limited to readily available systems.

Organisation

Variables may include, but are not limited to: contacting arrangements relating to material purchasing, supplier options; storage and retrieval of products storage equipment and documentation, testing standards. Requirements may vary.

Client

May be a department within the organization or a third party and so the relation and ease of access will vary.

Development methods/tools

Will vary from the conventional Systems with little or no formalization to a very well structured design.

OH & S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Organizational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best-practice examples from industry will be used.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of Assessment

Assessment must confirm the ability to adhere to specifics stated in preparation methods which are often tied to a regulation.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Selection of suitable hydroponic systems based on requirement.• Nutrient solution preparation• Standards involved in setting up hydroponic systems• Strategic designing to maximize available space.• Understanding of the key aspects PH and EC• Effect of rain water in hydroponics.	<ul style="list-style-type: none">• Preparation of own formulations for the nutrient solution.• Deducing what is required to start cultivation in a system that is feasible.• Devising plans to attain maximum yield from a given area of space for a crop.• Familiarizing with use tools and equipment.• Maintaining EC and PH in favorable range.• Water harvesting and storage.

UNIT 7

Unit Title	Maintaining Equipment/material inventory				
Descriptor	This unit defines the competency required to record and store the equipment, relevant materials and technical documentation.				
Code	FNA04S2U07V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Document and update inventory	1.1 Inventory is maintained to include Information on equipment movements, new purchases or redundant equipment 1.2 Machinery and software inventory and licenses are maintained and updated in line with upgrades 1.3 Manuals and associated technical documentation are recorded and stored 1.4 Unused equipment and material is stored according to technical manuals
2. Store technical documentation	2.1 Technical documentation is stored as required by organizational guidelines 2.2 Technical documentation is accessed and disseminated as required to meet client requirements

Range Statement

Equipment

Variables may include but are not limited to: farming tools and equipment, fertilizers/chemicals and related inputs, pumps, lawn mowers, vehicles, hydroponic systems, personal organizers, communications equipment. Peripherals may include printers, scanners, speakers, multi-media kits. Keyboard equipment may include mouse, touch pad keyboard, pens.

Software

Variables may include but are not limited to: commercial software applications; organisational specific software; word processing, spreadsheet, database, graphic, mail, Internet browsers and presentation functionalities.

Organisation

Variables may include but are not limited to: security procedures; storage and retrieval of product licenses; storage of Information Technology equipment and documentation; disposal policy; technical manuals, in-house, product and vendors.

Literacy

Regarding technical documentation.

Client user

Can be a department within the organization or a third party and so the relation and ease of access will vary.

Documentation and Reporting

Audit trails, standards, varietal control of plant and animal species. Updated versions of computer software.

OH and S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Organizational Standards

Based on formal, well-documented methodologies, or non-existent. For training delivery purposes, best practice examples from industry will be used.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Assessment must confirm the ability to accurately and regularly update and maintain the inventory software or hard files, equipment and technical documentation inventory according to identified storage and retrieval policy and procedures. Software licensing requirements and expiring chemicals are adhered according to organization specifications; Inventories are regularly accessed and kept up to date; Literacy skills in regard to workplace documentation and technical manuals are demonstrated.

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Basic understanding of systems, organisational• Basic software licensing requirements understanding• General copyright regulations• Broad knowledge of inventory principles and procedures• Current business practices in relation to preparing reports	<ul style="list-style-type: none">• Basic reading, writing and interpretation skills in regard to workplace documentation• Plain English literacy and communication skills in relation to the presentation of information• Problem-solving skills for a defined range of predictable problems• Low level decision-making skills

UNIT 8

Unit Title	Fruits and vegetable production				
Descriptor	This unit describes the outcomes required to prepare a planting site; estimate planting numbers and growing space required; prepare and plant trees and shrubs and provide aftercare.				
Code	FNA04S1U08V1	Level	1	Credit	3

Element of competencies	Performance Criteria
1. Prepare for planting	<p>1.1 The planting site is marked out according to the planting plan and/or supervisor's instructions.</p> <p>1.2 Competing plants are controlled as required.</p> <p>1.3 The soil is prepared and modified according to the cultural requirements of the trees to be planted.</p> <p>1.4 Tools and equipment are prepared and used according to specifications.</p>
2. Plant fruit trees	<p>2.1 Planting holes are dug to a size sufficient to ensure the roots can grow outwards and downwards according to the needs of the species and size of the plant's root system.</p> <p>2.2 Sides of planting holes are gouged to remove the glazing of the side-walls and allow for root penetration into surrounding soil.</p> <p>2.3 Depth of planting holes sufficient to ensure that planting is no deeper than the junction of the roots and the stem.</p> <p>2.4 Trees and shrubs are watered prior to planting, ensuring the entire root ball is damp.</p> <p>2.5 Plants are removed from containers without damage.</p> <p>2.6 Roots are treated for binding or breakage, according to the needs of the species and standard horticulture practice, prior to placement in the hole.</p>
3. After planting care	<p>3.1 Plant hole is backfilled with soil that is free from large lumps and consolidated lightly, with a shallow basin formed for water retention.</p> <p>3.2 Plants are watered with sufficient volume to eliminate air pockets.</p>

	<p>3.3 Mulch material is applied evenly to the depth specified in the workplace guidelines.</p> <p>3.4 Trees and shrubs are secured by the appropriate method for the plant and conditions.</p> <p>3.5 Formative pruning and removal of damaged or dead materials is performed.</p> <p>3.6 Canopy reduction, thinning and lifting is undertaken as required.</p> <p>3.7 Fertilizer is applied according to the supervisor's instructions and manufacturers' guidelines.</p> <p>3.8 Necessary aftercare is applied.</p>
<p>4. Perform follow up and clean-up</p>	<p>4.1 Waste is removed and disposed of.</p> <p>4.2 Tools and equipment used are cleaned, maintained and stored according to workplace specifications.</p> <p>4.3 Records of activities, data and observations are completed according to required work procedures.</p>

Range Statement

Tools and equipment may include:

- Auger
- Rake
- Secateurs
- Shovel
- Spade
- Spray equipment

Trees and shrubs may include:

- Bare-rooted
- Container-grown
- Plants that do not require mechanized lifting devices for planting
- Tube-grown

Plant securing may be done by:

- Anchoring or guying

- Bracing
- Installing tree guards and protective materials
- Staking
- Tying

Aftercare may include:

- Fertilizing
- Mulching
- Ongoing protection through staking and tying
- Pruning
- Watering
- Weed and disease control

Documentation and Reporting

Audit trails, standards, varietal control of plant species.

OH and S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Assessment Guide

Form of assessment

- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- apply pre-planting soil and plant treatments;
- carry out planting;
- prepare soil or growing media for planting; and
- Watering plants and applies other treatments to seedlings if required.

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Basic plant physiology• Basic preparation of soil and growing media• Importance of field hygiene in regard to crop planting• Nutritional, water and other requirements of the crop• Principles of pest, weed and disease control• Range of pre-planting soil and plant treatments and their importance• Soil structure and health• The importance of correct timing and procedures for planting	<ul style="list-style-type: none">• Apply agricultural chemicals under supervision• Estimate spacing and planting patterns;• Measure quantities of plant materials and treatments;• Select planting material• Use and maintain planting equipment.

UNIT 9

Unit Title	Application of fertilizers and soil improves				
Descriptor	This unit describes the outcomes required to spread fertilizer and soil improvers according to specifications and clean and store vehicles and equipment.				
Code	FNA04S3U09V1	Level	3	Credit	6

Element of competencies	Performance Criteria
1. Prepare for soil improvement	<p>1.1 Soil type and condition is visually assessed or advice is sought from the supervisor.</p> <p>1.2 Location and boundaries of the area to be treated are identified and recorded for reference.</p> <p>1.3 Features that may present a hazard to the operation are identified and appropriate action is taken.</p>
2. Perform pre-fertilizer checks	<p>2.1 Rate of spreading is determined and fertilizer or soil improvement products are obtained.</p> <p>2.2 Clean and prepare spreading vehicles, machinery and equipment according to workplace procedures and manufacturers' instructions to ensure they are serviceable and are correctly set up and calibrated.</p>
3. Spread/spray fertilizer	<p>3.1 Personal protective equipment is selected and used.</p> <p>3.2 Spreading of fertilizer or soil improvement complies with</p>
4. Perform follow up and clean-up activities	<p>4.1 Equipment and clothing, is cleaned, sanitized and stored in accordance with the workplace procedures.</p> <p>4.2 Vehicles machinery and equipment used are cleaned, maintained and stored according to workplace specifications.</p> <p>4.3 Damaged or faulty equipment is repaired on site or workplace procedures for repair are followed.</p> <p>4.4 Records of activities are completed accurately and promptly, and according o required work standards and procedures.</p>

Range Statement

Soil improvement products to be spread may include:

- Chemical and organic fertilizers
- Composts
- Dolomite
- Lime

Vehicles, machinery and equipment for spreading may include:

- Product bins
- Spreading mechanisms
- Tractor - mounted or trailed
- Truck - mounted or trailed

Organisation

Variables may include, but are not limited to: contacting arrangements relating to material purchasing; licensing requirements and supplier options; storage and retrieval of products storage equipment and documentation, testing standards. Requirements may vary.

Client

May be a department within the organization or a third party and so the relation and ease of access will vary.

Development methods/tools

Will vary from the traditional Systems with little or no formalization to a very well structured design.

Documentation and Reporting

Audit trails, standards, varietal control of plant species.

OH and S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Assessment Guide

Form of assessment

- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- Maintain and operate spreading equipment to maintain uniformity of application; and
- Maintain and operate spreading equipment to meet health and safety requirements.

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Spreading characteristics of different fertilizer and soil improvement products• Safety measure and equipments• Fertilizer requirements by different crops at different growing stages.	<ul style="list-style-type: none">• monitor and record activities performed; and• Operate equipment according to manufacturer recommendations.

UNIT 10

Unit Title	Irrigation setup				
Descriptor	This unit describes the outcomes required operate a pressurized irrigation system, conduct required checks and shut down in response to irrigation indicators.				
Code	FNA04S2U10V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Perform pre-start checks for pressurized irrigation system (pump based)	<p>1.1 Pre-start checks of water, power, fuel and lubricants are undertaken to ensure that all are available and the control system is operational. .</p> <p>1.2 Pumps are primed, if required, and gates and controls are open or closed in accordance with workplace procedures.</p>
2. Start up and inspect system	<p>2.1 After the pressurized irrigation system is started, water flow, water quality and pressures are inspected at the delivery points.</p> <p>2.2 Checks are made to the lines for leaks and blocks and to the drainage flow.</p> <p>2.3 All malfunctions, leaks and blockages are repaired immediately.</p> <p>2.4 Filter efficiency is checked to ensure the pressure at the headworks and control valves is within design specifications.</p> <p>2.5 Water is distributed evenly to the targeted areas and with minimal wastage and runoff.</p> <p>2.6 Water is applied for sufficient time to ensure required soil moisture levels are met, with allowance made for weather conditions.</p>
3. Shut down system, clean up and document	<p>3.1 Systems are shut down in sequence, and tailwater control systems for drainage are implemented, in accordance with specifications.</p> <p>3.2 Tools, equipment and machinery are maintained and stored, according to workplace procedures.</p> <p>3.3 Work outcomes are recorded according to workplace specifications.</p>

Range Statement

Pre-start checks on a pressurized irrigation system may include:

- Bike shift/easy shift types
- Capillary and spray irrigation systems/ travelling irrigators
- Hard hose boom type
- Soft hose
- Centre pivot
- Hand-shift permanent (installed)
- Linear move
- Micro irrigation
- Below or above ground with sprays
- Drip emitter trickle
- Low pressure
- Mains pressure
- Mini-sprinklers
- Powered side roll

Pressurised irrigation system may include:

- A manual operation
- Fully automated computer-control

Work outcomes records may include information on:

- Blockages
- Leaks
- Malfunctions
- Time of shutdown
- Water used

Assessment Guide

Form of assessment

- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- carry out running repairs on irrigation delivery and drainage systems;
- check pressure at the headwork's and control valves;
- measure and interpret flow rates and pressures;
- operate and inspect the system;
- Shut down the system in response to irrigation indicators.

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• General irrigation methods for pressurized systems• Main components of pressurized irrigation systems• Pump types used in pressurized irrigation systems and their operation• Soil/plant/water relationships• Water requirements of plants/crops	<ul style="list-style-type: none">• calibrate pressure and flow testing equipment;• carry out pre-start checks and prime pumps;• conduct operational checks;• identify hazards and implement safe work procedures;• measure and interpret flow rates and pressures;• perform shut down procedures;• perform start up and shutdown sequences; and• Read and follow operations manual and irrigation schedules.

UNIT 11

Unit Title	Harvesting and handling				
Descriptor	This unit describes the outcomes required to prepare harvesting machinery and crop-treatment equipment, sequence harvesting activities and harvest crops safely and efficiently while maximizing the yield.				
Code	FNA04S2U11V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Prepare for harvest	<p>1.1 Requirements, method and order of harvesting are confirmed.</p> <p>1.2 Safety hazards are identified and suitable controls implemented.</p> <p>1.3 Harvesting hygiene standards appropriate to the crop are identified.</p> <p>1.4 Harvesting machinery and equipment is adjusted for harvesting and parts replaced as required.</p> <p>1.5 Machinery and other equipment is checked for pests and other contaminants.</p>
2. Perform harvest	<p>2.1 The harvest plan and sequence is followed for each area of crops.</p> <p>2.2 Windrowing/swathing is completed to the standard required and crop is sampled for moisture content.</p> <p>2.3 Harvesting machinery and equipment is operated according to specifications.</p> <p>2.4 Hygiene of all surfaces that come into contact with the crop is maintained to maximize crop quality.</p> <p>2.5 Insecticides are applied as required.</p> <p>2.6 The harvest is stacked and stored in accordance with work requirements.</p>
3. Perform follow up and clean-up activities	<p>3.1 Harvesting equipment and attachments are cleaned, maintained and stored in accordance with specifications.</p> <p>3.2 Harvesting records are completed, in accordance with workplace requirements.</p>

Range Statement

Harvesting machinery may include but are not limited to:

- Communication equipment
- Conveyors
- Crop-treatment equipment
- Field and chaser bins for towing vehicles
- Grain augers
- Tarpaulins
- Tractors
- Trucks

Organisation

Variables may include, but are not limited to: contacting arrangements relating to material purchasing; licensing requirements and supplier options; storage and retrieval of products storage equipment and documentation, testing standards. Requirements may vary.

Client

May be a department within the organization or a third party and so the relation and ease of access will vary.

Development methods/tools

Will vary from the traditional Systems with little or no formalization to a very well structured design.

Documentation and Reporting

Audit trails, standards, varietal control of plant species.

OH and S Standards

As per company, statutory and organization requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Assessment Guide

Form of assessment

- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- follow and interpret a harvesting plan;
- identify safety hazards, and implement suitable controls;
- maintain standards of hygiene to avoid compromising crop or paddock quality;
- sample the crop for moisture content; and
- use harvesting machinery and equipment safely and according to specifications, with minimal damage to crop.

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none"> • Suitable crop moisture content • Operation and use of machinery and harvest equipment • Harvesting and storage requirements of variety of crops 	<ul style="list-style-type: none"> • Apply agricultural chemicals under supervision; • Complete basic calculations and measure volumes; and • Operate machinery to specifications.

UNIT 12

Unite Title	Financial management.				
Descriptor	This unit covers the competency to maintain business and financial records. It includes activities such as the maintenance of daily routine financial records, including payroll data, data formats and preparing a trail balance. It also includes activities associated with the monitoring of cash control for accounting purposes.				
Code	FNAo4S2U12V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Record payroll data	<p>1.1 Payroll data is checked and discrepancies clarified with designated person/s</p> <p>1.2 Employee pay period details, deductions and allowances are entered in payroll system in accordance with source data</p> <p>1.3 Payment due to individual employees is calculated to reflect standard pay and</p>
2. Develop a linked spreadsheet solution	<p>2.1 ask is analyzed and specifications for spreadsheets are determined</p> <p>2.2 Organizational and task requirements in relation to data entry, storage, output, reporting and presentation requirements are identified</p> <p>2.3 Spreadsheet design utilizes software functions and formulae to meet identified requirements</p> <p>2.4 Spreadsheets are linked in accordance with software procedures</p> <p>2.5 Cells are formatted and data attributes assigned with relative and/or absolute cell references used in accordance with the task specifications</p>
3. Maintain asset register	<p>3.1 A register of property, plant and equipment is prepared from fixed asset transactions in accordance with organizational policy and procedures</p> <p>3.2 Method of calculating depreciation is determined in accordance with organization requirements</p> <p>3.3 Asset register and associated depreciation schedule are maintained in accordance with organization requirements</p>
4. Prepare invoices for accounts receivable	<p>4.1 Invoices are prepared accurately in accordance with organizational requirements</p>

	<p>4.2 Invoices are distributed to nominated person for verification prior to dispatch</p> <p>4.3 Adjustments are made as required in accordance with organizational requirements</p> <p>4.4 Invoices and other relevant documents.</p>
5- Maintain daily financial records	<p>5.1 Credit and debit transactions are accurately entered in accordance with organizational requirements</p> <p>5.2 Daily financial records are maintained in accordance with organization requirements for accounting purposes</p> <p>5.3 Discrepancies or errors in documentation or transactions are identified and rectified or referred to the nominated person.</p>

Range Statement

Pay period details may include:

- salary
- wage
- casual wage
- contract
- piecework
- commission
- bonus

Deductions and allowances may include: Variables may include,

- income tax
- superannuation contributions
- health insurance
- union dues
- travel allowance
- travel allowance
- meal allowance

Payroll system may include:

Manual or computerized.

Work organization may include:

- mix of repetitive and other activities
- rest periods
- exercise breaks

Spreadsheet design may include:

- Analysis
- appropriateness
- identification and parameters
- formulae
- functions
- relative and absolute cell references
- headings and labels
- import and export of data
- linked formulae
- formatting and reformatting
- headings
- labels
- multi-page documents
- headers and footers

Formulae may include:

- addition
- subtraction
- multiplication
- division
- percentage
- exponentiation
- comparison
- average

Expense accounts may include:

- rent paid
- insurance
- rates
- wages and salaries
- freight inward/outward
- interest paid
- distribution expenses
- electricity
- telephone/fax

Final accounts may include:

- trading
- profit and loss

Checking claims for accuracy and authenticity may include:

- requiring a receipt
- ensuring items purchased are business related
- accepting claims for authorized personnel only

Assessment Guide

Form of assessment

- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

- Resource implications may include:
- computer equipment including relevant software, printer

- the learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- the recording and reporting of transactions

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none"> • Organizational policy and procedures • Structure of authority in organization • Types of payroll systems • impact of formatting and design on the presentation and readability of data • methods of presenting financial data 	<ul style="list-style-type: none"> • Communication skills including questioning, clarifying, reporting • Problem solving skills for reconciling figures and resolving employee enquiries within scope of own responsibility • Time management to meet designated timelines • literary skills to interpret and evaluate the purposes and uses of various features of spreadsheets; use a variety of strategies for planning and reviewing own work • numeracy skills to calculate cash and non-cash transactions

UNIT 13

Unite Title	Marketing of produce and creating supply chains.				
Descriptor	This unit deals with the skills and knowledge required for developing a marketing strategy and coordinating sales activities in a range of settings within the agriculture industry.				
Code	FNA04S2U13V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Collect and analyze information on the business environment.	1.1 Identify and <i>analyze information</i> on expected market growth or decline with associated risk factors 1.2 Gather and <i>analyze comparative market information</i> 1.3 Identify and analyze industry and customer <i>trends and developments</i> , including emerging issues and technology 1.4 Identify and analyze the <i>legal and ethical constraints</i> of the market and potential business impacts 1.5 Identify and analyze <i>capabilities and resources</i>
2. Preparing marketing strategies or plans	2.1 Identify and analyze opportunities based on internal and external market analysis 2.2 Develop <i>marketing and sales strategies</i> that are consistent with the direction, values and business plans of the enterprise 2.3 Develop strategies in consultation with <i>key stakeholders</i> that clearly identify <i>business goals and outcomes</i> 2.4 Prepare marketing strategies that reflect legal and ethical constraints 2.5 Provide timely opportunities for <i>colleagues</i> to contribute to the <i>marketing plan and approach</i>

<p>3. Implement and monitor marketing activities and sales strategies.</p>	<p>5. Define and communicate clearly all priorities, responsibilities, timelines and budgets, involving all appropriate colleagues</p> <p>3.3 Implement and monitor actions detailed in the plan/s in a cost-efficient manner and according to schedule and <i>contingencies</i></p> <p>3.4 Produce <i>reports</i> in accordance with enterprise policy</p> <p>3.5 Share information on <i>marketing activities and sales strategies</i> with staff to maintain awareness of current enterprise focus</p>
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Range Statement

This unit applies to developing a marketing strategy and coordinating sales activities within the agricultural organization may include:

- Front Office
- Pack houses
- Food Production
- Authorities related to transportation.

Analyze refers to analysis activities for a specific market and may include consideration of:

- Location
- Product and service mix

Packaging or presentation

- Quality factors (time, cost, variations)
- Access
- Continuity.

Information may include:

- Current performance data

- Sales and contracts
- Forecasted trends and opportunities
- Available resource commitments and capacity

Analyze comparative market information may relate to:

- Best practice information
- Benchmarking
- Competitor information.

Trends and developments may be

- Economic
- Ecological/environmental
- Government activities
- Social and cultural
- Demographic
- Technological
- Industrial.

Marketing plan and approach should include quantitative statements in terms of:

- Profit
- Volume
- Value
- Market share

Contingencies may relate to:

- Plans to deal with uncontrollable business factors
- Challenges, issues, barriers.

Marketing and sales strategies may be for:

- A new or existing, specific product or service
- A small/medium sized business enterprise
- A destination

- A single event

Marketing strategies state how marketing objectives will be achieved and may include:

- Status quo
- Intense growth
- Integrated growth
- Diversification
- Market penetration
- Product or market development

and may address:

- Product
- Price
- Promotion
- Distribution
- Demand
- Target market

Capabilities and resources may include

- Human resources
- Financial resources
- Equipment capacity
- Staff skill levels
- Hours of operation
- Communication capabilities
- Location/position

Assessment Guide

Form of assessment

- Project and assignment work
- Written or oral short answer questions
- Problem solving

[Assessment context](#)

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Resource implications may include:

- computer equipment including relevant software, printer
- the learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- access to market information

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Organizational policy and procedures• The importance of a good supply chain• A good understanding of the transportation mechanisms and difficulties faced.• methods of presenting market data• Fluctuations in prices in a market and the reasons.• Understand the difficulties in access to certain markets.	<ul style="list-style-type: none">• Communication skills including questioning, clarifying, reporting• Problem solving skills for reconciling figures and resolving employee enquiries within scope of own responsibility• Time management to meet designated timelines• literary skills to interpret and evaluate the purposes and uses of various features of spreadsheets; use a variety of strategies for planning and reviewing own work• Analytical skills• Information collection methods

UNIT 14

Unit Title	Sustainable natural resource and environmental management				
Descriptor	This unit defines the competency required to understand the concepts and skill necessary related to natural resources and environmental management in a sustainable manner.				
Code	FNA04S2U14V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Natural resources	<p>1.1 Define and identify the following Water, trees, fish, wildlife, sunlight and air</p> <p>1.2 Define and identify the following no renewable resources Minerals, soil and fossil fuels.</p> <p>1.3 identify the following water quality indicators PH, temperature, nitrates, nitrites, ammonia and dissolved oxygen.</p>
2. Safety with agrichemicals	<p>2.1 Identify the following from an agrochemical container Directions of use, warning signs, signal words, precautionary statement, storage, disposal</p> <p>2.2 Identify the following from the safety data sheet First aid measures, firefighting measures, personal protection equipment.</p>
3. Ecosystem	<p>3.1 Define ecosystem and explain how it is related to our livelihood.</p> <p>3.2 Explain what a food chain is and what trophic levels resemble.</p> <p>3.3 Identify how agriculture related activities could cause imbalances in an ecosystem.</p>
4. Pesticides and fertilizers	<p>4.1 Define leaching of fertilizers and explain how ground water is contaminate by agrochemicals.</p> <p>4.2 Explain what a broad spectrum pesticide is and its implications on the environment and ecosystem.</p> <p>4.3 Explain the ways by which excessive use of agro chemicals can affect humans.</p>

<p>5. Climate smart agriculture</p>	<p>5.1 Define climate and how it is related to agriculture.</p> <p>5.2 Prepare a suitable model for climate smart agriculture in the Maldives. (documentation)</p> <p>5.3 Explain the role of mangroves in an island based ecosystem and its role in carbon sequestration.</p> <p>5.4 Explain the term agro forestry and inter cropping.</p> <p>5.5 Prepare a suitable agro forestry model for Maldives. (documentation)</p>
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Range Statement

Organizational

Variables may include, but are not limited to: Occupational Health and Safety legislation; organization safety procedures; work stations and work environment procedures; presence and impact of OH&S, national level policies.

Natural resources

May include but are not limited to Water, trees, fish, wildlife, sunlight and air

Literacy skills

In relation to work place documentation may vary

OH and S standard

As per company, statutory and organization requirements. Ergonomic and environmental factors such as forestry and environmental regulations as well as a normal office environment must be considered during the demonstration of this competency as well as Occupational Health and Safety guidelines.

organizational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best practice examples from industry will be used.

Pesticides and fertilizers

May include but are not limited to; fungicides, herbicides, insecticides and miticides.

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

The Evidence Guide provides advice to inform and support appropriate assessment of this unit. It contains an overview of assessment followed by identification of specific aspects of evidence that will need to be addressed in determining competency. The Evidence Guide is an integral part of the unit and should be read and interpreted in conjunction with the other components of competency.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Environmental program procedures, methods, and practices and their application to specific situations.• Knowledge of environmental area(s) of assignment.• Keeps current in equipment and standards and safety.• Knowledge of specific codes and processes.• Enhances the organizational regulation knowledge and interpretation.	<ul style="list-style-type: none">• Technical vocabulary skills<ul style="list-style-type: none">✓ Technical phrases• Recognizing and being sensitive to individual differences and diversity of land and environment.• Survey skills• Literacy and language skills.<ul style="list-style-type: none">✓ Problem solving and sharing of strategies and exploring different solutions.✓ Identify and access relevant national policies and regulations.✓ Manage work and work relationships.• Research skills.

UNIT 15

Unit Title	Planting and propagation				
Descriptor	This unit describes the outcomes required to propagate plants by both sexual and asexual methods.				
Code	FNA04S3U15V1	Level	3	Credit	6

Element of competencies	Performance Criteria
1 Prepare for propagation	<p>1.1 The most effective propagation method for the selected plant is determined.</p> <p>1.2 Tools and equipment suitable for the selected propagation method are selected.</p> <p>1.3 Propagation material is collected using the appropriate method for the species.</p> <p>1.4 Propagation material is maintained and stored to ensure maximum viability.</p>
2 Propagate plants	<p>2.1 Propagating pre-treatments are applied appropriate to the plant and propagation method.</p> <p>2.2 Propagation techniques are carried out and propagating media prepared according to plant requirements.</p> <p>2.3 Propagation material is handled in a way that minimises damage and maximises viability.</p> <p>2.4 Water and nutrients are applied to suit the media specifications, plant requirements and propagation techniques employed.</p> <p>2.5 Labels are applied according to workplace guidelines. 2.6 Plant health is monitored and remedial action is taken according to work guidelines</p>
3 Complete propagation activities	<p>3.1 Work site is cleaned and waste is safely disposed of, or recycled, in accordance with workplace guidelines.</p> <p>3.2 Propagation records are entered accurately, according to workplace guidelines.</p>

Range Statement

Tools and equipment may include:

- Autoclave
- Boxes
- Knives, scalpel and other cutting instruments
- Linear measure
- Plastic containers and trays
- Secateurs
- Shovel
- Trolley
- Vermiculite
- Water spray container
- Wheelbarrow

Propagation methods may include:

- Cuttings
- Division or splitting
- Growing on tissue-cultured plants
- Layering
- Seeds
- Spores
- Plantlet
- Rhizomes
- Rootling's

- Seeds

Separations/divisions

Propagating pre- treatments may include:

- Breaking seed coat
- Cleaning
- Division
- Fungicides
- Grading
- Heat or chemical disinfestation
- Hormones
- Hot-water treatment of cuttings

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

[Assessment context](#)

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- Apply a range of propagation techniques
- Maintain and monitor propagated plants.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Basic plant nutrition• Characteristics of a range of parent plants and propagation materials• Propagation methods required for a range of plant species.	<ul style="list-style-type: none">• carry out a variety of propagation techniques• collect propagation material• read, interpret and follow instructions and safety material; and• select and apply appropriate pre and post treatments

UNIT 16

Unit Title	Pest Management				
Descriptor	This unit describes the outcomes required to manage pests and diseases in an agricultural environment, taking into consideration Integrated Pest Management (IPM) options in planning and monitoring				
Code	FNAo4S3U16V1	Level	3	Credit	6

Element of competencies	Performance Criteria
1. Assess pest and disease infestation	<p>1.1 Presence of pests or diseases identified through monitoring and type of infestation determined.</p> <p>1.2 Scope and size of the infestation is assessed.</p> <p>1.3 Information about the pest, its biology, and environmental factors is analyzed to determine whether tolerance is appropriate or management is required.</p> <p>1.4 A pest and disease management action plan is developed, with monthly, weekly or daily work plans.</p>
2. Prepare for pest management measures	<p>2.1 Tools, equipment and machinery required are selected and checked for serviceability.</p> <p>2.2 Safety hazards are identified, risks assessed and risk controls are implemented.</p> <p>2.3 Personal protective equipment is selected, used and maintained according to safety standards.</p>
3. Conduct pest management activities	<p>3.1 Monitoring and measurement schedules are implemented to comply with the pest and disease management plan.</p> <p>3.2 Preventative cultural methods are employed as part of an integrated pest and disease management plan.</p> <p>3.3 Scheduled pest/weed or disease control activities are determined and implemented.</p> <p>3.4 All areas requiring pest and disease management are visually checked for coverage.</p> <p>3.5 Checks are made to ensure any chemicals applied do not contaminate growing areas, water supplies or adjoining property.</p>

4. Monitor pest and disease control methods	<p>4.1 Pest and disease population controls are monitored to identify side effects to other plants, animals or external environment.</p> <p>4.2 Effectiveness of control methods are assessed and adjustments made to the pest management plan where necessary.</p>
5. Maintain documentation and equipment	<p>5.1 Equipment and clothing, is cleaned, sanitized and stored in accordance with the workplace procedures.</p> <p>5.2 Damaged or faulty equipment is repaired or reported to supervisor.</p> <p>5.3 Records of all disease and pest-management activities are completed to required work standards</p>

Range Statement

Cultural methods may include:

- Biological-control agents
- Planting pest-free rootstock
- Removal of the food supply using weed-control techniques
- Rotating between different crops
- Selecting pest-resistant varieties

Scheduled pest/weed or disease control activities may include:

- Alignment of milestones with the critical control points in the pests' life cycle and behavior patterns
- Alignment of milestones with the local land-management and production activity cycles
- Consideration of other local farms or residents

Pest and disease population controls may include

- Biological controls

- Exclusion fencing
- Fumigation
- Harvesting
- Mustering
- Poisoning
- Relocation
- Sedation
- Shooting Regional Office for Asia and the Pacific 25
- Tagging
- Trapping

Assessment Guide

Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- Plan, apply and monitor a range of pest and disease control methods;
- Identify a range of pests diseases and beneficial organisms; and
- Select pest and disease controls and timing of operations.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Chemical, biological and cultural control methods and treatments available• Critical control points in pests' life cycle, behavior patterns and their interaction with the environment• Current pest and disease treatments and their safety consideration• Economic or environmental thresholds for a range of plant pests, diseases and disorders• Pests and disease recognition	<ul style="list-style-type: none">• apply Integrated Pest Management practices;• calculate the quantities and application rates of control materials;• Recognize a range of pests, diseases and beneficial organisms relevant to the workplace.

UNIT 17

Unit Title	Planning for agricultural work				
Descriptor	This unit describes the outcomes required to plan and organize work tasks in the agriculture and/or aquaculture work environment.				
Code	FNA04S2U17V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Identify task requirements	1.1 Task requirements are determined and confirmed with supervisor.
2. Plan and prioritize	2.1 Work steps are sequenced and prioritized correctly. 2.2 Work activity is planned and organized with other involved personnel.
3. Document and review	3.1 Documents related to job planning and progress are completed and provided to supervisor in accordance with workplace requirements. 3.2 Work plan is reviewed regularly to check effectiveness and identify improvements. 3.3 Suggestions for imp
1. Climate and weather	1.1 Land preparation to be done before the wet season commences. 1.2 Fertilizers and pesticide application to be carried out with reference to rain, wind and sunlight. 1.3 Seed sowing based on weather conditions. 1.4 Site selection and crop selection should be based on general climatic conditions of the country and scheduling should be done based on the weather.

Range Statement

Key player

May include but are not limited to: Agricultural organizations, vendors of agricultural products and services, agricultural professional bodies in the private or international sector, industry publications and Government Departments involved in agriculture industry promotion, employer organizations, and relevant unions.

Clients

Variables may include but are not limited to: internal and external customers, employers and employees.

Agriculture Department

The structure of the agriculture department may be a separate branch, department, division or an integrated function of an organization.

Occupational health and Safety standards

As per company, statutory formalities and requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.

Organizational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best practice examples from industry will be used.

Assessment Guide

Form of assessment

Competency may be assessed through a combination of:

- Demonstration
- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and skills and knowledge requirements. The candidate must be able to:

- cooperate with others in planning, conducting and reviewing activities;
- identify tasks and steps required to achieve a work outcome; and
- Sequence and prioritize tasks.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Workplace planning procedures• Use of planning tools• Methodologies and steps involved• Importance of coordination	<ul style="list-style-type: none">• apply safety considerations in planning;• use communication skills, including questioning, listening, asking for clarification and seeking advice from supervisor;• break down work requirements into tasks and steps;• follow safety policies and procedures and written instructions;• prioritize and sequence tasks appropriately; and• use problem-solving skills to use available resources, prioritize tasks and change plans where required.

UNIT 18

Unit Title	Manage soil quality				
Descriptor	This unit describes the outcomes required to collect soil and/or media samples, perform basic soil tests and interpret the results.				
Code	FNA04S2U18V1	Level	2	Credit	15

Element of competencies	Performance Criteria
1. Identify soil characteristics and improvement activities needed	<p>1.1 Information about local soil characteristics is obtained and analyzed for relevance to the particular workplace operation.</p> <p>1.2 Results of soil quality tests are used to identify and recommend soil properties capable of being improved.</p> <p>1.3 Improvement measures such as soil improving agents and/or work practices are introduced</p> <p>1.4 Personal Protective Equipment relevant to the task is selected and used appropriately.</p>
2. Conduct, monitor and record soil improvement activities	<p>2.1 Soil improvement activities are conducted according to the production/management plan and safe work practices.</p> <p>2.2 The performance of soil improvement activities is tested and monitored, and the production/management plan, is modified accordingly and recorded for later use.</p>
3. Maintain documentation and equipment	<p>3.1 Equipment and clothing, is cleaned, sanitized and stored in accordance with the workplace procedures.</p> <p>3.2 Damaged or faulty equipment is repaired or reported to supervisor.</p> <p>3.3 Records of all activities are completed to required work standards.</p>

Range Statement

Range statement Soil qualities for testing:

- Air-filled porosity
- Color
- Compaction
- Depth
- Major
- Nutrient availability
- PH level
- Readily available water
- Salinity
- Structure

Texture Soil improving agents may include:

- Flocculating agents
- PH-modifying agents such as lime
- Structure additives
- Structure-modifying agents such as gypsum and artificial Texture modifications
- Wetting and water-retention agents

Work practices to improve soil may include:

- Compaction alleviation
- Modifications to soil drainage or moisture-holding capacity

Assessment Guide

Form of assessment

Competency may be assessed through a combination of:

- Practical exercises
- Written or oral short answer questions

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

To demonstrate competency in this unit the candidate must meet performance criteria and Critical skills and essential knowledge and knowledge requirements. The candidate must be able to:

- Apply soil improving agents and techniques to meet the needs of required plants;
- Use soil management techniques to monitor, modify and conserve soil; and
- Use water results to correctly determine soil properties.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
<ul style="list-style-type: none">• Nutritional requirements of plants relevant to the workplace• Safety requirements• Soil characteristics• Soil conservation methodologies• Soil improvement agents and their uses and effects	<ul style="list-style-type: none">• apply soil conservation strategies and sustainable production techniques;• conduct and interpret basic soil tests;• maintain testing records; and• Read, interpret and follow instructions. Resources prioritize tasks and change plans where required.