

SETTING UP FISH FARM

UNIT CODE: AQ/CU/AM/CR/01/6/B

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Set Up Fish Farm

Duration of Unit: 200 hours

Unit Description

This unit specifies the competencies required to setting up fish farm. It involves applying food safety measures in setting up a fish farm, selecting an ideal site for fish farming, designing a fish farm layout, constructing fish ponds and supporting structures and integrating fish farming with livestock husbandry.

Summary of Learning Outcomes

1. Apply food safety measures in setting up a fish farm
2. Design fish farm layout
3. Construct fish ponds and ancillary farm structures
4. Test run the pond
5. Set up integrated fish culture facilities
6. Exit fish farm project sites

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Apply food safety measures in setting up a fish farm	<ul style="list-style-type: none">• Meaning of food safety• Importance of food safety• Principles of food safety• Prerequisite programmes<ul style="list-style-type: none">• Meaning, importance, categories and establishment of prerequisite programmes• Relevant programmes for setting up fish farm• Hazard analysis in setting up fish farm<ul style="list-style-type: none">• Enterprise description• Product description	<ul style="list-style-type: none">• Written tests• Oral questioning• Observation• Third Party reports• Project• Practical tests• Portfolio of Evidence

	<ul style="list-style-type: none"> • Layout of premises and surrounding environment • Development of flow diagram • Identification of hazards at each step of the flow diagram • Describing the hazard • Significance of hazards • Establishment of the HACCP plan for setting up fish farm <ul style="list-style-type: none"> • Identification of critical control points • Procedures for setting up critical control limits • Establishment of monitoring procedures on the control limits • Establishment of corrective actions • Verification procedures • Record keeping • Validation procedures • Standards and legislations in food safety on setting up fish farm 	
2. Design a fish farm layout	<ul style="list-style-type: none"> • Site selection <ul style="list-style-type: none"> • Importance • Factors affecting site selection • Types of fish culture systems <ul style="list-style-type: none"> • Cage culture • Pond systems • Integrated fish culture • Recirculating Aquaculture systems (RAS) • Components of a fish farm <ul style="list-style-type: none"> • Grow-out facilities • Broodstock rearing facilities • Fry nursing facilities 	<ul style="list-style-type: none"> • Written • Oral • Observation • Portfolio of Evidence

	<ul style="list-style-type: none"> • Quarantine facilities • Ancillary structures • Factors to consider when designing a fish farm • Basic fish farm layout designs - examples • How to draw a perfect farm layout plan <ul style="list-style-type: none"> • Factors to consider • Equipment and materials required • Details to be included in the designed plan 	
<p>3. Construct fish ponds and ancillary farm structures</p>	<ul style="list-style-type: none"> • Types of ponds <ul style="list-style-type: none"> • Based on construction materials e.g. earthen, concrete, liner, paddy, wooden • Based on Pond use e.g. nursery, breeding, production, quarantine • How to calculate pond construction costs • Pond construction equipment and materials • Steps in pond construction <ul style="list-style-type: none"> • Site clearance • Pegging • Core trenching • Excavation • Compaction and shaping of dykes • Sloping of the pond bottom • Fitting inlets and outlets • Trenching of supply and drainage channels • Construction and installation of ancillary farm structures • Planting grass • Fencing off the pond area • Factors to consider during pond construction <ul style="list-style-type: none"> • Dyke dimensions 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Observation • Projects • Portfolio of Evidence

	<ul style="list-style-type: none"> • Bottom slopes • Freeboard • Inlet, outlets • Drainage and • Spacing between ponds • Safety measures <ul style="list-style-type: none"> • Use of PPEs in pond construction • Carrying out basic first aid-cuts, blisters, CPR, fractures 	
4. Test run newly constructed ponds	<ul style="list-style-type: none"> • Major defects associated with new ponds • Critical areas to consider when test-running a newly constructed pond • Detection and repair of defects on new ponds <ul style="list-style-type: none"> • Leaking dykes • Falling dykes • Leaking inlets and outlets • Broken pipes • Uneven pond bottoms and dyke tops • Poor drainage 	<ul style="list-style-type: none"> • Oral questioning • Observation • Project
5. Set up integrated fish culture facilities	<ul style="list-style-type: none"> • Types of integrated fish culture systems <ul style="list-style-type: none"> • Fish-Poultry integration • Fish – Livestock integration • Fish – paddy integration • Aquaponics • Factors to consider when selecting an ideal integration system • Common designs of integrated fish culture systems • Setting up a simple aquaponic system 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Observation • Projects • Portfolio of Evidence
6. Exit fish farm site	<ul style="list-style-type: none"> • Storage procedures for recyclable materials and supplies • Disposal methods for non-recyclable materials • Cleaning and storage of tools and equipment 	<ul style="list-style-type: none"> • Oral questioning • Observation • Written report • Portfolio of Evidence

	<ul style="list-style-type: none"> • Completion report writing • Handing over procedure 	
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Suggested Methods of Instruction

- Instructor led facilitation of theory
- Demonstration by trainer
- Viewing of related videos
- Project
- Group discussions
- Case studies

Recommended Resources

Reference materials

- Statutory Requirements And Standards
- Codes of practice
- Manual of standard operating procedures
- Permits
- Good agricultural practices manual
- Manufacturer's instructions
- Environmental protection regulations

Tools and equipment

- Tape measure, spirit level, string level, jembes, spades, pangas, pick axe, rake, slashers, hacksaw
- Compactors and rollers, wheelbarrows

Materials and supplies

Strings and ropes, liners, pegs, PVC pipes and joints, adhesives, screens, lime, cement, sand, ballast, timber, nails, roofing material, chicken feeders and drinkers

Personal protective equipment (PPEs)

- Gloves
- Goggles
- Helmets
- Gum boots
- Overalls
- First aid kits