

SET UP FISH FARM

UNIT CODE: AQ/OS/AT/CR/01/6/B

UNIT DESCRIPTION

This unit specifies the competencies required to set up a fish farm. It involves conducting farm site food safety risk assessment, developing farm site food safety risk management plan, designing fish farm layout, constructing fishponds and ancillary farm structures, test running the pond, setting up integrated fish culture facilities, monitoring and evaluating farm set up, and exiting fish farm site.

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Conduct Farm site Food safety risk assessment	1.1. Farm site and adjacent site <i>hazards</i> are identified and documented. 1.2. Possible <i>sources</i> of physical, chemical and microbial hazards are identified based on <i>prior use of land</i> . 1.3. Level of risk is assessed and established as per fish codes of practice
2. Develop farm site food safety risk management plan	2.1 <i>Preventive measures</i> for farm site hazards are established as per identified source of contamination and manual of standard operating procedures 2.2 Standard operating procedures for preventing and correcting farm site risks are developed based on the identified risks. 2.3 Farm site food safety status is evaluated based on statutory requirements and standards 2.4 Risk is communicated as per policies for internal and external communication 2.5 Approval and certification of farm site is sought from relevant certification bodies based on <i>statutory requirements and standards</i>
3. Design fish farm layout	3.1 Fish farming site is selected based on quality and quantity of water, soil type, topography and the level of identified risks. 3.2 Fish farm layout is designed as per manual of standard operating procedures and standards and statutory requirements. 3.3 <i>Fish culture units</i> and <i>ancillary farm structures</i> are designed in accordance with intended use, size and soil type. 3.4 Construction costs are worked out based on client's budget.

	<p>3.5 Tools, equipment, materials and supplies are identified and gathered based on job requirements.</p> <p>3.6 Statutory requirements are met and necessary permits acquired from relevant authorities.</p> <p>3.7 PPEs are identified and gathered as per job requirements</p>
4. Construct fish ponds and ancillary farm structures	<p>4.1 Occupational safety and food safety precautions are applied according to site requirements and food safety management plan.</p> <p>4.2 Fish pond site is cleared based on vegetation on the site and nature of topsoil.</p> <p>4.3 Fish pond area is measured and pegged based on design dimensions.</p> <p>4.4 A perimeter core trench is constructed around the pond area based on soil characteristics.</p> <p>4.5 Fish pond area is excavated based on design dimensions.</p> <p>4.6 Dykes are constructed and aligned to the design specification.</p> <p>4.7 Supply and drainage channel are constructed based on design and topography.</p> <p>4.8 Inlets and outlets are fitted based on design specifications.</p> <p>4.9 Ancillary farm structures are constructed or installed based on the farm design specifications</p> <p>4.10 Predator control devices are installed as per best management practices</p> <p>4.11 Soil erosion control measures are taken based on good agricultural practices manual</p>
5. Test run the pond	<p>5.1 Pond is filled with water stepwise to full capacity</p> <p>5.2 Pond is checked for defects and wall stability as per standard operating procedures</p> <p>5.3 Inlets and outlets are assessed against design specifications</p> <p>5.4 Faults are reported and rectified as per standard operating procedures and the food safety management plan</p>
6. Set up integrated fish culture facilities	<p>6.1 Livestock species for integration identified based on farmer preference</p> <p>6.2 Livestock housing structures are designed according to identified species</p> <p>6.3 Livestock housing structures constructed according to species-specific designs and pond size</p>
7. Monitor and evaluate farm set up	<p>7.1 Farm is monitored and evaluated based on food safety standards and food safety management plan</p> <p>7.2 Farm is approved for conformity to statutory requirements by relevant authorities</p>
8. Exit fish farm site	<p>8.1 Recyclable materials and supplies are stored based on manufacturer's instructions.</p>

	<p>8.2 Non-recyclable materials are disposed off in regard to environmental protection regulations.</p> <p>8.3 Tools and equipment are cleaned and stored as per workplace procedures.</p> <p>8.4 Pond completion report is prepared and disseminated as per workplace procedures.</p> <p>8.5 Completed structures are handed over to the client based on agreed project plan</p>
--	---

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. Hazards may include but not limited to:	<ul style="list-style-type: none"> • Chemical hazards <ul style="list-style-type: none"> ○ Heavy metals ○ Pesticides ○ Industrial chemicals • Physical hazards • Biological hazards <ul style="list-style-type: none"> ○ Aquatic animal diseases <p>Naturally occurring toxins</p>
2. Sources may include but not limited to:	<ul style="list-style-type: none"> • Agricultural chemicals • Toxic plants • Fecal matter • Soil • Water
3. Prior use of land may include but not limited to:	<ul style="list-style-type: none"> • For animal feeding or domestic animal production; • As a waste disposal site (garbage or toxic industrial waste); • As a sanitary waste management site; • For mining activities, oil or gas extraction; • For former agricultural activities; • Adjacent land utilization and neighbouring areas (risk of cross-contamination); • History of flooding in area of concern.

<p>4. Statutory requirements and standards may include but not limited to:</p>	<ul style="list-style-type: none"> • EIA report • Lease agreement/ title deeds • Compliance to standards and regulations <ul style="list-style-type: none"> ○ Kenya Fisheries Service ○ County Government ○ The Fisheries Management and Development Act No.35 of 2016. ○ The Codex Alimentarius Food Hygiene Basic Texts; ○ The Food Drugs and Chemical Substances Act Cap. 254 of the Laws of the Kenya; ○ The Pest Control Products Act, Cap. 346 of the Laws of Kenya; ○ The Public Health Act, Cap. 242 of the Laws of Kenya; ○ The Environmental Management and Co-ordination Act, 1999.
<p>5. Preventive measures may include but not limited to:</p>	<ul style="list-style-type: none"> • Location, design and layout of farm • Farm waste management • Pond nets • Pest control • Pond lining • Runoff control
<p>6. Fish culture units include but not limited to :</p>	<ul style="list-style-type: none"> • Earthen ponds • Lined ponds • Concrete ponds • Plastic tanks • Fibre reinforced plastic tanks
<p>7. Ancillary farm structures include but not limited to</p>	<ul style="list-style-type: none"> • Fish feed Stores • Office • Water storage tanks • Filtration facilities • Pump house • Aerators • Generator room • Staff houses
<p>8. Tools, equipment, materials and supplies include but not limited to:</p>	<ul style="list-style-type: none"> • Tools-tape measure, spirit level, jembes, spades, pangas, • Equipment-plate compactors and rollers, wheelbarrows • Materials and supplies-ropes, liners, pegs, plumbing materials, lime, cement, sand

9. Permits include but not limited to :	<ul style="list-style-type: none"> • Water abstraction permit (WARMA)
10. PPE's include but not limited to	<ul style="list-style-type: none"> • Gum boots, helmets, gloves, overalls, first aid kits
11. Soil erosion control measures include but not limited to:	<ul style="list-style-type: none"> • Planting grass on the dykes
12. Livestock include but not limited to	<ul style="list-style-type: none"> • Chicken • Ducks • Geese • Sheep • Goats • Pigs

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Food safety risk assessment and communication
- Training skills
- Use of tools and equipment
- Measurement
- Drawing and sketching
- Communication skills
- Basic first aid skills
- fish farm and pond designs
- Interpretation of pond designs
- Basic survey skills
- Water quality testing

Required Knowledge

The individual needs to demonstrate knowledge of:

- Food safety Standards (codes of practice for fish and fishery products)
- Regulatory bodies/ Competent authorities in the fish sector
- Hazard Analysis Critical Control Point (HACCP)
- Food Safety Hazards in Aquaculture
- Good aquaculture practices
- Good hygiene practices
- Safety precautions

- Principles of food hygiene
- National legislations and regulations
- Types of tools, equipment and PPEs
- Design and drawing
- Budgeting
- Behavior of predators and related control measures
- Water quality parameters
- Water quality test kits and digital meters
- Animal husbandry

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified a suitable site for fish farm location 1.2 Developed a food safety risk management and communication plan for the farm site 1.3 Designed fish farm layout 1.4 Designed Fish culture units and ancillary farm structures 1.5 Cleared all vegetation and top soil, and stowed away from construction area 1.6 Constructed ponds 1.7 Constructed and/ or installed ancillary farm structures 1.8 Tested components of the farm separately and collectively 1.9 Cleaned and stored tools and equipment 1.10 Identified livestock species for integration 1.11 Constructed livestock housing structures 1.12 Observed safety procedures
<p>2. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace or assessment location 2.2 PPEs 2.3 Tools and equipment 2.4 Pond construction materials 2.5 Writing materials
<p>3. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Observation

	<p>3.2 Oral questioning</p> <p>3.3 Written test</p> <p>3.4 Portfolio of Evidence</p> <p>3.5 Interview</p> <p>3.6 Third party report</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the –job</p> <p>4.3 During Industrial attachment</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

easytvvet.com