

## HANDLE HARVESTED FISH

**UNIT CODE:** AQ/OS/AT/CR/05/6/B

### Unit description

This unit specifies the competencies required to handle harvested fish. It involves conducting fish harvesting food safety risk assessment, developing fish harvesting food safety risk management plan, preparing harvested fish for preservation, preserving harvested fish, processing harvested fish, managing waste from fish processing, monitoring and evaluating effectiveness of food safety management system of fish handling and marketing fish, fish products and by-products.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
<p>These describe the key outcomes which make up workplace function.</p>	<p>These are assessable statements which specify the required level of performance for each of the elements.</p> <p><i><b>Bold and italicized terms are elaborated in the Range</b></i></p>
<p>1. Conduct fish Harvesting Food Safety Risk Assessment</p>	<p>1.1 Food safety <i><b>Hazards</b></i> in the fish handling are identified and documented.</p> <p>1.2 Possible <i><b>sources</b></i> of physical, chemical and microbial contamination in the fish handling are identified based on the hazards</p> <p>1.3 Level of risk in the fish handling is assessed and established as per manual of standard operating procedures</p>
<p>2. Develop fish harvesting Food Safety Risk Management Plan</p>	<p>2.1 <i><b>Preventive measures</b></i> for fish handling hazards are established as per identified source of contamination and manual of standard operating procedures</p> <p>2.2 <i><b>Corrective measures</b></i> for fish handling hazards are established as per identified contamination and manual of standard operating procedures</p> <p>2.3 Standard operating procedures for preventing and correcting fish handling safety risks are developed based on the identified risks.</p> <p>2.4 Harvested fish food safety status is evaluated based on statutory requirements and standards</p> <p>2.5 Risk is communicated as per policies for internal and external communication</p> <p>2.6 Approval and certification of fish handling food safety status is sought from relevant certification bodies based on <i><b>statutory requirements and standards</b></i></p>

<p>3. Prepare harvested fish for preservation</p>	<p>3.1 Harvested fish is prepared as per code of practice for the handling, processing, storage and the placing on the market of fish and fisheries products</p> <p>3.2 <b>Tools, equipment and materials</b> are assembled</p> <p>3.3 <b>PPEs</b> are identified and gathered as per task requirements</p> <p>3.4 Harvested fish is graded according to size and species as per the target market</p> <p>3.5 Fish is cleaned with potable water to remove all slime and foreign materials</p> <p>3.6 Fish is scaled as per target market requirements</p> <p>3.7 Fish is gutted to remove visceral material without rupturing</p> <p>3.8 Gutted fish is cleaned to remove blood stains and gut remains from stomach cavity</p> <p>3.9 Tools, equipment and materials used are cleaned as per standard sanitary operating procedures and stored in designated places</p>
<p>4. Preserve harvested fish</p>	<p>4.1 Fish is preserved as per code of hygiene practice for the handling, processing, storage and the placing on the market of fish and fisheries products</p> <p>4.2 Fish meant for short term preservation is kept in appropriate containers with ice in alternate layers following standard icing procedures</p> <p>4.3 Fish meant for long term preservation is smoked, sundried, salted or frozen based on market preference</p>
<p>5. Process harvested fish</p>	<p>5.1 Fish for processing is handled, stored, transported and processed according to code of hygiene practice for the handling, processing, storage and the placing on the market of fish and fisheries products</p> <p>5.2 Whole fish is filleted as per target market specifications</p> <p>5.3 Fish mince is prepared out of fish fillets or trimmings using recommended technique</p> <p>5.4 Whole fish, fish fillets or portions are deep fried to a golden-brown color</p> <p>5.5 Fish balls are prepared from fish trimmings or fish mince according to target market specification</p> <p>5.6 <b>Fish by-products</b> for sale are identified, collected and sorted into containers, based on market specifications</p> <p>5.7 Fish by-products for sale are processed based on their form and nature</p> <p>5.8 <b>Packaging tools, equipment and materials</b> are assembled in line with task requirements</p> <p>5.9 Processed fish products and by-products are packaged using material appropriate to type, size and weight of the product or by-product</p>

	<p>5.10 Packaged product or by-product is labeled according to statutory regulations and target market requirements</p> <p>5.11 Packaged products or by-products are stored in designated areas using the FIFO approach</p> <p>5.12 Storage conditions of stored fish products and by-products are monitored regularly</p>
6. Manage waste from fish processing	<p>6.1 Fish processing wastes are collected at every stage and separated according to their physical state.</p> <p>6.2 Collected wastes are handled in a manner to avoid cross contamination and harboring of pests</p> <p>6.3 Solid and liquid wastes are disposed of according to the relevant standards and legal requirements</p>
7. Monitor and evaluate effectiveness of food safety management system of fish handling	<p>7.1 Processed fish is inspected for food safety regularly as per HACCP plan.</p> <p>7.2 Approval and certification of fish processing plant is maintained as per relevant statutory requirements and standards</p>
8. Market fish, fish products and by-products	<p>8.1 Price of fish and fish products is determined based on costs of production, demand and supply and price of alternative products.</p> <p>8.2 Market outlets are identified and contacted</p> <p>8.3 Appropriate mode of transport to market is determined according to product form and quantities, and distance to market</p> <p>8.4 Fish, fish products and by-products are sold at a profit</p> <p>8.5 Product handling is carried out while observing code of hygiene practice for the handling, processing, storage and the placing on the market of fish and fisheries products</p> <p>8.6 Records of harvest and sales proceeds are maintained</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
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<p>1. Hazards may include but not limited to:</p>	<ul style="list-style-type: none"> <li>• Pathogenic bacteria <ul style="list-style-type: none"> <li>○ E.g. Salmonella spp.</li> </ul> </li> <li>• Chemical contaminants <ul style="list-style-type: none"> <li>○ e.g. Histamine</li> </ul> </li> <li>• Viruses <ul style="list-style-type: none"> <li>○ e.g. Hepatitis</li> </ul> </li> <li>• Fungi <ul style="list-style-type: none"> <li>○ Moulds</li> </ul> </li> <li>• Foreign matter <ul style="list-style-type: none"> <li>○ Hair</li> <li>○ Jewellery</li> </ul> </li> <li>• Pests</li> </ul>
<p>2. Sources may include but not limited to:</p>	<ul style="list-style-type: none"> <li>• Personnel hygiene facilities and toilets</li> <li>• Cleaning agents</li> <li>• Fraud</li> <li>• Wash water quality</li> <li>• Equipment and facilities</li> <li>• Lubricants</li> <li>• Wastes</li> </ul>
<p>3. Preventive measures may include but not limited to:</p>	<ul style="list-style-type: none"> <li>• Personal hygiene</li> <li>• Personnel health checks every 6 months</li> <li>• Use of food grade cleaning agents and lubricants</li> <li>• Pest control</li> <li>• Fraud control</li> <li>• Use of potable water</li> <li>• Use of food grade equipment</li> <li>• Proper storage conditions</li> <li>• Maintenance and sanitation of equipment and facilities</li> <li>• Temperature controls (below 4°C)</li> <li>• Plant hygiene</li> <li>• Biosecurity measures</li> <li>• PPEs</li> <li>• Waste management</li> </ul>
<p>4. Corrective measures may include but not limited to:</p>	<ul style="list-style-type: none"> <li>• Disposal of contaminated fish</li> <li>• Sterilization of the fish handling plant</li> </ul>

<p>5. Statutory requirements and standards may include but not limited to:</p>	<ul style="list-style-type: none"> <li>• Compliance to standards and regulations</li> <li>• Kenya Fisheries Service</li> <li>• County Government</li> <li>• The Fisheries Management and Development Act No.35 of 2016.</li> <li>• The Codex Alimentarius Food Hygiene Basic Texts;</li> <li>• The Food Drugs and Chemical Substances Act Cap. 254 of the Laws of the Kenya;</li> <li>• The Pest Control Products Act, Cap. 346 of the Laws of Kenya;</li> <li>• The Public Health Act, Cap. 242 of the Laws of Kenya;</li> <li>• The Environmental Management and Co-ordination Act, 1999.</li> </ul>
<p>6. Tools, equipment and materials may include but not limited to:</p>	<ul style="list-style-type: none"> <li>• Basins, buckets, hard brush, filleting tables, knives, waste disposal containers, ice box, smoking kiln, solar dryer, drying racks, drying mats or canvass, domestic freezers, ice, salt, frying oil, meat mincer, blender, crockery,</li> </ul>
<p>7. PPEs include but not limited to</p>	<ul style="list-style-type: none"> <li>• Gum boots, head cover, gloves, dust coats, first aid kits, mouth piece, apron</li> </ul>
<p>8. Fish by-products may include but not limited to</p>	<ul style="list-style-type: none"> <li>• Scales</li> <li>• Skins</li> <li>• Frames</li> <li>• Swim bladder</li> </ul>
<p>9. Packaging tools, equipment and materials may include but not limited to</p>	<ul style="list-style-type: none"> <li>• Weighing balance, polybags, cartons, gunny bags, ice packs, baskets, cool boxes, sealing tape, labels, pallets, wheelbarrow</li> </ul>

## 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
- Training skills
- Use of tools and equipment
- Weighing

- Fish handling
- Fish preservation
- Fish processing
- Packaging
- Record keeping
- Communication
- Basic first aid
- Numeracy

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Food safety Standards
- Hazard Analysis Critical Control Points (HACCP)
- Regulatory bodies/ Competent authorities
- 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
- Fish spoilage
- Fish handling, processing and preservation
- Marketing and market dynamics
- Workplace safety regulations
- Waste management regulations

### EVIDENCE GUIDE

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

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Developed fish harvesting food safety risk management plan</li> <li>1.2 Cleaned fish to remove all slime and foreign materials</li> <li>1.3 Guted fish to remove all visceral material</li> <li>1.4 Preserved fish using appropriate method</li> <li>1.5 Processed fish into various products and by-products</li> <li>1.6 Packaged and stored fish products in designated areas</li> <li>1.7 Marketed fish products</li> <li>1.8 Observed hygienic standards</li> <li>1.9 Disposed of waste from fish processing</li> </ul>
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2. Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>2.1 Workplace or assessment location</li> <li>2.2 PPEs</li> <li>2.3 Tools, materials and equipment</li> <li>2.4 Writing materials</li> <li>2.5 Calculator</li> </ul>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>3.1 Observation</li> <li>3.2 Oral questioning</li> <li>3.3 Written test</li> <li>3.4 Portfolio of Evidence</li> <li>3.5 Interview</li> <li>3.6 Third party report</li> </ul>
4. Context of Assessment	<p>Competency may be assessed:</p> <ul style="list-style-type: none"> <li>4. 1On-the-job</li> <li>4. 2Off-the –job</li> <li>4. 3During Industrial attachment</li> </ul>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>