



# Model Curriculum

**QP Name: Ornamental Fish Farmer**

**Options: Aquarium**

**QP Code: AGR/Q4910**

**Version: 3.0**

**NSQF Level: 4**

**Model Curriculum Version: 2.0**

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot  
No. 10, Sector - 44

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## Training Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Fisheries
<b>Occupation</b>	Aquaculture
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/6221
<b>Minimum Educational Qualification and Experience</b>	10th Class with 2 Years of relevant experience OR 10th Class Pass and pursuing continuous regular schooling OR 8th Class with 3 Years of relevant experience OR 5th Class with 5 Year of relevant experience OR Previous relevant qualification of NSQF Level 3 with minimum education as 5th grade pass with 2 Years of relevant experience
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	17/11/2022
<b>Next Review Date</b>	30/12/2024
<b>NSQC Approval Date</b>	30/12/2021
<b>QP Version</b>	3.0
<b>Model Curriculum Creation Date</b>	30/12/2021
<b>Model Curriculum Valid Up to Date</b>	30/12/2024
<b>Model Curriculum Version</b>	2.0
<b>Minimum Duration of the Course</b>	390 Hours
<b>Maximum Duration of the Course</b>	450 Hours

## Program Overview

This section summarizes the end objectives of the program along with its duration.

### Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Demonstrate the process of carrying out pond and tank preparation activities.
- Describe the process of accessing the feed requirements and culturing live feed.
- Demonstrate the process of stocking, maintaining and harvesting the ornamental fish.
- Explain the basic entrepreneurial activities for small enterprise.
- Describe the process of undertaking employability and entrepreneurial practices.
- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety in culture operations.
- Demonstrate the process of setting up and maintaining marine and freshwater aquariums.

### Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>AGR/N4936 Carry out pond and tank preparation activities</b> NOS Version- 2.0 NSQF Level- 4	25:00	35:00	0:00	0:00	60:00
Module 1: Introduction to the role of an Ornamental Fish Farmer	5:00	0:00	0:00	0:00	5:00
Module 2: Pond and tank preparation activities	20:00	35:00	0:00	0:00	55:00
<b>AGR/N4937 Assess the feed requirements and culture live feed</b> NOS Version- 2.0 NSQF Level- 4	20:00	40:00	0:00	0:00	60:00
Module 3: Process of assessing the feed requirements and culture live feed	20:00	40:00	0:00	0:00	60:00
<b>AGR/N4938 Stock, maintain and harvest the ornamental fish</b> NOS Version- 3.0	20:00	40:00	0:00	0:00	60:00

<b>NSQF Level- 4</b>					
Module 4: Process of stocking, maintaining and harvesting the ornamental fish	20:00	40:00	0:00	0:00	60:00
<b>AGR/N9908 Undertake basic entrepreneurial activities for small Enterprise</b> <b>NOS Version- 3.0</b> <b>NSQF Level- 4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 5: Basic entrepreneurial activities for small enterprise	15:00	15:00	0:00	0:00	30:00
<b>AGR/N4955 Follow the hygiene and safety practices in culture operations</b> <b>NOS Version- 2.0</b> <b>NSQF Level-4</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 6: Health, hygiene and safety in culture operations	10:00	20:00	0:00	0:00	30:00
<b>DGT/VSQ/N0102 Employability Skills</b> <b>NOS Version-1.0</b> <b>NSQF Level-4</b>	<b>60:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 7: Employability Skills	60:00	00:00	0:00	0:00	60:00
<b>Module 8: OJT (Mandatory)</b>	<b>00:00</b>	<b>00:00</b>	<b>90:00</b>	<b>00:00</b>	<b>90:00</b>
<b>Total Duration</b>	<b>150:00</b>	<b>150:00</b>	<b>90:00</b>	<b>0:00</b>	<b>390:00</b>

### Optional Modules

The table lists the modules and their duration corresponding to the Optional NOS of the QP

#### Option 1: Aquarium

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>AGR/N4963 Set up and maintain marine and freshwater aquariums</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	30:00	30:00	0:00	0:00	60:00
Module 9: Process of setting up and maintaining marine and freshwater aquariums	30:00	30:00	0:00	0:00	60:00
<b>Total Duration</b>	<b>30:00</b>	<b>30:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>

## Module Details

### Module 1: Introduction to the role of an Ornamental Fish Farmer

*Bridge Module, Mapped to AGR/N4936 v2.0*

#### Terminal Outcomes:

- Discuss the job role of an Ornamental Fish Farmer.

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the size and scope of the agriculture industry and its sub-sectors.</li> <li>• Discuss the role and responsibilities of an Ornamental Fish Farmer.</li> <li>• Identify various employment opportunities for an Ornamental Fish Farmer.</li> </ul>	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

## Module 2: Pond and tank preparation activities

### Mapped to AGR/N4936 v2.0

#### Terminal Outcomes:

- Describe the process of preparing the pond.
- Demonstrate the process of setting up the tank.

<b>Duration: 20:00</b>	<b>Duration: 35:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the process of preparing a pond for fish culture.</li> <li>• List different types of tanks and their suitability for different types of fish.</li> <li>• Explain the importance and ways of ensuring the optimum level of dissolved oxygen and temperature in the pond.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of applying basal manure, lime, gypsum or any other necessary soil treatment in the recommended quantity to improve the soil fertility.</li> <li>• Demonstrate the process of carrying out de-mudding in the pond.</li> <li>• Show how to construct dykes of recommended height at the pond.</li> <li>• Demonstrate the process of installing inlet and outlet pipes in the pond for the efficient entry and exit of water.</li> <li>• Show how to remove aquatic weed from the pond.</li> <li>• Demonstrate the process of fabricating and installing the tank.</li> <li>• Demonstrate the process of installing air pumps, aerator and filters in the tank.</li> <li>• Demonstrate how to install re-circulatory systems (RAS).</li> <li>• Show how to fill the tank and pond with aged freshwater or seawater depending on the species to be cultured.</li> <li>• Demonstrate the process of applying net cover on the tanks to protect the fish from predatory birds and other external threats.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Water Pump, Power Backup, Inch Tape, Torch, Gloves, Oxygen Cylinder, Plastic Bag, Plastic tank, Glass Tanks	



## Module 3: Process of assessing the feed requirements and culture live feed

### Mapped to ARG/N4937 v2.0

#### Terminal Outcomes:

- Describe the process of selecting ornamental fish and assessing their feed requirements.
- Describe the process of procuring the ingredients for preparing feed and culturing live feed.
- Demonstrate the process of culturing live feed.

<b>Duration: 20:00</b>	<b>Duration: 40:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain how to assess the feed requirements of different species of fish.</li> <li>• State feeding schedule for different stages of growth of the different ornamental fish species.</li> <li>• List various ingredients required for preparing feed according to the nutritional requirement of different fish species.</li> <li>• List various ingredients required for preparing ornamental fish feed and culturing live feed.</li> <li>• State the recommended temperature for storing fish feed and live feed ingredients.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare a sample record of ingredients procured for feed and culturing live feed.</li> <li>• Demonstrate the process of culturing live feed following the recommended method.</li> <li>• Demonstrate ways to maintain hygiene and quality of the live feed.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Power Backup, Feeding Trays, Tanks, Buckets	

## Module 4: Process of stocking, maintaining and harvesting the ornamental fish

*Mapped to AGR/N4938 v3.0*

### Terminal Outcomes:

- Describe the process of procuring and stocking the ornamental fish seed.
- Demonstrate the process of carrying out feed and health management.
- Describe the process of managing the water quality.
- Demonstrate the process of carrying out fish breeding.
- Demonstrate the process of carrying out harvesting, conditioning, packing and marketing the fish.
- Demonstrate various practices for effective resource optimisation.
- Demonstrate various waste management practices.
- Discuss ways to promote diversity and inclusion at the workplace.

<b>Duration: 20:00</b>	<b>Duration: 40:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the need of procuring quality ornamental fish seed.</li> <li>• State the recommended stocking density for different varieties of ornamental fish.</li> <li>• Explain the recommended prophylaxis measures to be taken to prevent disease and outbreak of harmful organisms in the pond.</li> <li>• State feed management for varieties of ornamental fish.</li> <li>• List various signs of stress and disease in the fish appropriate treatment for them.</li> <li>• Explain the importance of applying the prescribed treatment in the recommended quantity.</li> <li>• Explain various water quality management practices.</li> <li>• List various quality parameters to check the quality of water.</li> <li>• Describe the recommended methods for breeding fish.</li> <li>• Explain how to protect the fish from contamination while being harvested and packed.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to feed the stocked seeds with the required nutrients.</li> <li>• Demonstrate the process of applying the prescribed treatment to treat the diseased fish.</li> <li>• Demonstrate the process of carrying out aeration with the use of aerators.</li> <li>• Show how to remove the decomposing organic waste material from the pond to maintain the pH levels.</li> <li>• Demonstrate the process of carrying out breeding following the recommended method.</li> <li>• Demonstrate the process of carrying out prophylactic nutrition and reducing the water level in the pond before harvesting.</li> <li>• Demonstrate the process of harvesting the fish using appropriate tools and equipment, ensuring no damage to the fish.</li> <li>• Show how to condition and starve the fish before packing.</li> <li>• Demonstrate the process of packing the fish in appropriate containers maintaining the recommended</li> </ul>

<ul style="list-style-type: none"> <li>• State the recommended temperature and humidity to store the fish.</li> <li>• Describe the process of connecting and negotiating with buyers.</li> <li>• Explain the use of e-payment methods and computer to process payments and maintain records respectively.</li> <li>• Explain the benefits of resource optimisation.</li> <li>• Explain the criteria for segregating waste into appropriate categories.</li> <li>• Explain the procedure to report inappropriate behaviour e.g., harassment.</li> </ul>	<p>density.</p> <ul style="list-style-type: none"> <li>• Show how to process payments using the buyer-preferred e-payment method.</li> <li>• Prepare a sample record of sales and payments.</li> <li>• Demonstrate various practices to optimise the usage of various resources such as water and electricity.</li> <li>• Demonstrate the process of recycling and disposing different types of waste appropriately.</li> <li>• Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Grinder, Mixer, Pelletizer, Soil and Water Testing kit, Nets, Aerator, Chlorine, Iodine, Water Pump, Hypochlorite Solution, Surgical Knife, Syringe, Tray, Power backup, Spawning Cone, Grey Slates, Breeding Trap, Breeding Holding Box, Tank Divider, Tank Heaters, Reverse Osmosis Filters, Deionizers, Aquarium Canopies and Hoods, Egg Crates, Floating Plants, Marbles, PVC Pipes, Sponge Filter, Spawning Mop, Water Pumps, Aeration Stones, Methylene Blue, Copper Sulphate, Hand Nets, UV Light Disinfectant Equipment, Oxygen Cylinder, pH Meter</p>	

## Module 5: Basic entrepreneurial activities for small enterprise

### Mapped to AGR/N9908 v3.0

- Describe the process of planning the agricultural enterprise/ business.
- Describe the process of managing the agricultural production process.
- Describe the process of managing the post-production and marketing processes.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain how to analyse the demand and supply of the relevant agricultural produce in the market</li> <li>• Describe the process of identifying the target customers and assess their needs and expectations with respect to the quality and price of the produce.</li> <li>• Explain how to identify various types of agricultural entrepreneurship/ business opportunities.</li> <li>• Explain how to prepare a basic business plan for agricultural entrepreneurship/business activities.</li> <li>• State the appropriate sources of funding for the agricultural entrepreneurship/ businesses</li> <li>• State the relevant government schemes and programs</li> <li>• Explain the importance of ensuring compliance with the government structural reforms and</li> <li>• framework, along with the applicable rules and regulations.</li> <li>• List various resources required for agricultural production</li> <li>• Describe the process of planning agricultural production and the use of relevant technologies to enhance production</li> <li>• Explain the importance of ensuring no cause adverse impact on the environment and produce during production</li> <li>• State the recommended practices to be followed for efficient input</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to analyse the demand and supply of the relevant agricultural produce in the market.</li> <li>• Prepare a sample basic business plan for agricultural entrepreneurship/business activities.</li> <li>• Demonstrate how to calculate the costs incurred and determine the price of the product for profitability.</li> <li>• Prepare a sample marketing plan considering the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness.</li> <li>• Demonstrate the process of using the relevant digital services such as e-commerce, e-payments, electronic recordkeeping, etc.</li> </ul>

resource management.

- Describe the process of optimising the production processes and output through the amalgamation of existing practices with smart technologies.
- Explain the recommended sustainability practices to be followed during agricultural production to prevent and deal with deforestation, loss of biodiversity, soil degradation, etc.
- Explain how to collect information related to the wholesale and retail price of agricultural produce.
- Explain how to calculate the economics of the produce viz. production cost, price of the produce, B:C Ratio etc.
- Explain the relevant government schemes with the provision of subsidies/funds for the promotion of agricultural produce.
- Describe the process of selecting appropriate marketing channels for marketing agricultural produce, and the applicable requirements and constraints.
- List the relevant buyers of different types of agricultural produce.
- Explain how to identify and manage various risks to production and post-production processes.
- Explain how to undertake outreach programs to promote agricultural products and services, and expand agri-business.
- Explain the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness considered while preparing and executing a marketing plan.
- Explain the use of the relevant digital services such as e-commerce, e-payments, electronic recordkeeping, etc.

<ul style="list-style-type: none"><li>• Explain the importance of using efficient post-production logistics.</li><li>• Explain the importance of maintaining various records accurately.</li></ul>	
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 6: Health, hygiene and safety in culture operations

### Mapped to NOS AGR/N4955 v2.0

#### Terminal Outcomes:

- Demonstrate the process of maintaining the water body and its hygiene.
- Demonstrate the process of maintaining the health of cultured organisms.
- Describe how to maintain personal health and safety.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain how to protect the aquaculture farm and cultured species from various threats.</li> <li>• Describe the process of identifying and removing predators or preying organisms from the culture pond or tank.</li> <li>• Explain the importance and process of carrying out regular cleaning of the culture pond or tank to remove sludge, algae, uneaten feed, etc.</li> <li>• State the recommended disinfectants for water bodies and the process of applying them.</li> <li>• State the recommended practices to protect the cultured organisms from air/ water/ fomite-borne contamination and diseases during and after harvesting.</li> <li>• Describe the process of sampling the cultured organisms to identify disease, disorders and presence of parasites and pathogens.</li> <li>• List the signs of stress or disease in the cultured organisms such as spots, lesions, erratic movement, etc.</li> <li>• Describe the process of identifying, quarantining and treating the disease organisms.</li> <li>• List the signs of improvement in the quarantined organisms.</li> <li>• Explain the importance of removing the dead or moribund organisms from the water body promptly and</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out regular maintenance of dykes or fences in the culture pond.</li> <li>• Show how to remove sludge, algae, uneaten feed and any other waste materials from the culture pond or tank.</li> <li>• Demonstrate the process of applying necessary disinfectants or treatment in the culture pond or tank, to prevent disease outbreak and the growth of harmful organisms.</li> <li>• Demonstrate the process of sampling the cultured organisms regularly to identify the signs of stress, disease, phenotypic disorders and the presence of parasites and pathogens.</li> <li>• Demonstrate how to remove the dead and moribund organisms and dispose them in an environment-friendly manner.</li> <li>• Demonstrate how to safely use the Personal Protective Equipment (PPE) during hazardous aquaculture operations.</li> <li>• Demonstrate procedures for dealing with accidents and emergencies.</li> <li>• Demonstrate the administration of first aid.</li> </ul>

<p>disposing them safely.</p> <ul style="list-style-type: none"> <li>• Explain the importance of using the relevant PPE and ensuring it is damage-free.</li> <li>• State appropriate practices to be followed to maintain personal hygiene and prevent infections.</li> <li>• Explain the importance of storing hazardous chemicals, tools and equipment safely.</li> <li>• Describe the common first aid procedures to be followed in case of emergencies.</li> </ul>	
<p><b>Classroom Aids:</b></p>	
<p>Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator’s Guide, Participant’s Handbook.</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask, First Aid Kit, Equipment used in Medical Emergencies.</p>	



## Module 7: Employability Skills (60 hours)

Mapped to NOS DGT/VSQ/N0102 v1.0

**Duration: 60:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

#### Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

#### Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

#### Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

#### Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

#### Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

#### Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

#### Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

#### **Essential Digital Skills Duration: 10 Hours**

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

#### **Entrepreneurship Duration: 7 Hours**

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

#### **Customer Service Duration: 5 Hours**

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

#### **Getting Ready for apprenticeship & Jobs Duration: 8 Hours**

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

## Module 8: On-the-Job Training Duration (Mandatory)

*Mapped to AGR/Q4910 v3.0*

Mandatory Duration: 90:00	Recommended Duration: 0:00
Location: On-Site	
<p>Terminal Outcomes</p> <ol style="list-style-type: none"> <li>1. carry out de-mudding in the pond</li> <li>2. Install inlet and outlet pipes in the pond for the efficient entry and exit of water</li> <li>3. Install air pumps, aerator and filters in the tank.</li> <li>4. fill the tank and pond with aged freshwater or seawater depending on the species to be cultured.</li> <li>5. Apply net cover on the tanks to protect the fish from predatory birds and other external threats.</li> <li>6. culture live feed following the recommended method.</li> <li>7. feed the stocked seeds with the required nutrients</li> <li>8. apply the prescribed treatment to treat the diseased fish.</li> <li>9. carry out prophylactic nutrition and reducing the water level in the pond before harvesting.</li> <li>10. harvest the fish using appropriate tools and equipment, ensuring no damage to the fish.</li> <li>11. pack the fish in appropriate containers maintaining the recommended density.</li> </ol>	

## Module 9: Process of setting up and maintaining marine and freshwater aquariums

*Mapped to NOS AGR/N4963 v1.0*

### Terminal Outcomes:

- Demonstrate the process of setting up the marine/ freshwater aquarium
- Describe the process of stocking and feeding the fish.
- Describe the process of maintaining the aquarium and water quality.
- Demonstrate the process of carrying out health and disease management.

Duration: 30:00	Duration : 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• List various resources required to set up a marine/ freshwater aquarium.</li> <li>• Explain the importance of sanitising the aquarium and the relevant components before assembling.</li> <li>• Describe the process of acclimatising the fish and reef before being placed in the aquarium.</li> <li>• State the recommended quantity of treated water to be maintained in an aquarium for varieties of aquarium fish.</li> <li>• State the recommended stocking density to be maintained for varieties of aquarium fish.</li> <li>• State the nutrition and feed requirements of different types of aquarium fish and the recommended feeding schedule.</li> <li>• Explain the importance of maintaining the recommended percentage and frequency of water exchange in the aquarium.</li> <li>• Explain the benefits and process of stocking organisms in the aquarium that consume ectoparasites and feed residues.</li> <li>• Explain the appropriate measures to prevent the growth of parasites and undesirable growth in the aquarium.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to sanitise and acclimatise the relevant items before setting up in the aquarium to avoid contamination.</li> <li>• Demonstrate the process of setting up the aquarium structure by assembling and installing the required components such as reef, rocks, pebbles, etc.</li> <li>• Show how to fill the aquarium with the recommended quantity of treated water for the selected species.</li> <li>• Show how to acclimatise the fish before stocking in the aquarium.</li> <li>• Demonstrate how to feed the aquarium fish with nutritionally balanced feed as per the feeding schedule.</li> <li>• Demonstrate the process of carrying out a regular sampling of the water to ensure the recommended levels of pH, ammonia, nitrite and salinity.</li> <li>• Demonstrate the process of carrying out cleaning of the aquarium to remove feed residue and any waste material from the aquarium.</li> <li>• Demonstrate the process of treating the quarantined fish with the prescribed treatment.</li> </ul>

<ul style="list-style-type: none"><li>• Explain the importance of using protein skimmers and filtration equipment to ensure the removal of waste matter and optimum water quality in the aquarium.</li><li>• Explain various health and disease management practices.</li></ul>	
<b>Classroom Aids:</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Power Filter, Consister Filter, Wet-Dry System, Protein Skimmer, Tank, Aquarium Water Conditioner, Heater, Air Pump, Live Bacteria seeding Product to establish Aquarium Nitrogen Cycle, Fish Food	

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Diploma	Fisheries	3	Ornamental Fish Farming and Management			Regular Diploma of more than 15 months
Graduate	Agriculture/ Zoology	2	Ornamental Fish Farming and Management			For the school Program minimum qualification of the trainer should be Graduate (Fisheries Science/Industrial Fish & Fisheries/Zoology). Their Teaching experience will be considered industry experience
Graduate	Fisheries Science	0	Ornamental Fish Farming and Management			

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Ornamental Fish Farmer</b> ”, mapped to QP: “AGR/Q4910, v3.0”, Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPS guidelines is 80%.

## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B.F. Sc		4	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings
B. Tech	Fisheries and related streams	4	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings
B. Sc	Fisheries and related streams	5	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings
M. Tech	Aquaculture/ Fisheries and related streams	2	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings

M. F. Sc		2	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings
M Sc	Fisheries and related streams	2	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings
PhD	Fisheries Science and related streams	1	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams and fields	0		Practical skills and knowledge required in breeding and producing seeds and rearing the seedlings

### Assessor Certification

Domain Certification	Platform Certification
<p><b>“Ornamental Fish Farmer”, “AGR/Q4910, v3.0”,</b> Minimum accepted score is 80%</p>	<p>Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.</p>



## Assessment Strategy

### Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empaneled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions: To assess basic knowledge (Objective/Subjective)
2. Viva: To assess awareness on processes (Oral and/or written questioning)
3. Practical: To evaluate skills and identify competencies. (Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real-time' internet-based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on the ground through qualified and ToA certified assessors.

An individual must have adequate knowledge and skills to perform a specific task, weightage for different aspects of the assessment is given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through empanelled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

### Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at the assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of the Internet.

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practice will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial questions, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

Assessment			
Assessment Type	Formative or Summative	Strategies	Examples
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation

The question paper pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

## Assessment Quality Assurance framework

### Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

**Theoretical Knowledge** - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of the testing objectives of each question and other quality measures.

**Type** – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

**Practical Skills** - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

**Type** – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

**Viva Voce** - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

**Type** – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidence collected by AAs and ASCI are:

- Geotagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
  - Signed Attendance sheet
  - Assessor feedback sheet
  - Candidate feedback sheet

- Assessment checklist for assessor
  - Candidate Aadhar/ID card verification
  - Pictures of the classroom, labs to check the availability of adequate equipment's and tool to conduct the training and assessment
  - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant is popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
  - To validate their work on the day of the assessment, regular calls and video calls are done.
  - On-boarding and training of the assessor and proctor are done on a timely basis to ensure that the quality of the assessment should be maintained.
  - Training covers the understanding of QP, NSQF level, NOS and assessment structure

### **Methods of Validation**

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

### **Method for assessment documentation, archiving, and Access:**

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can

be generated.

- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two job role-specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

#### **Result Review & Recheck Mechanism –**

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidate shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

## References

### Glossary

Term	Description
<b>Declarative Knowledge</b>	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
<b>Key Learning Outcome</b>	The Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
<b>Terminal Outcome</b>	The Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
AGR	Agriculture
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack
RAS	Re-circulatory Systems