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# Facilitator Guide



Sector  
**Agriculture**

Sub-Sector  
**Fisheries**

Occupation  
**Capture Fisheries**

Reference ID: **AGR/Q5003**, Version **3.0**  
NSQF Level: **3**

## Inland Capture Fisherman cum Primary Processor



Scan this QR to access eBook  
<https://eskillindia.org/Home/handbook/135>





**Shri Narendra Modi**  
Prime Minister of India

“ Skilling is building a better India.  
If we have to move India towards  
development then Skill Development  
should be our mission. ”



## Acknowledgements

We are thankful to all organizations and individuals who have helped us in preparation of this Facilitator Guide. We also wish to extend our gratitude to all those who reviewed the content and provided valuable inputs for improving quality, coherence and content presentation of chapters. This Facilitator Guide will lead to successful roll out of the skill development initiatives, helping greatly our stakeholders particularly trainees, trainers and assessors etc. We are thankful to our Subject Matter Expert for the content and helping us in preparation of this Facilitator Guide.

It is expected that this publication would meet the complete requirements of QP/NOS based training delivery. We welcome the suggestions from users, industry experts and other stakeholders for any improvement in future.

## About this Guide

The objective of the guide is to provide an approach map for interacting with the trainees undergoing training on this job role. The aim of the course is to provide both theoretical and practical knowledge to the trainees. The guide is neither a substitute nor complete road map, but an aid to help to pass on the knowledge on all the aspects to the trainees in a systematic manner. It is expected that the trainer is fully conversant with all the contents of the guide. The guide is just to indicate that how to proceed for covering a topic and includes some additional information that may be necessary for the trainer to develop better comprehension on following aspects:

- **Knowledge and Understanding:** Satisfactory operational learning and comprehension to play out the required chore.
- **Performance Criteria:** Pick up the required aptitudes through hands on preparing and play out the required operations inside the predetermined measures.
- **Professional Skills:** Capacity to settle on operational choices relating to the zone of work.

The job will also include judging the comprehension and also help them learn more by hands on training. But it has to be ensured that these are in accordance with the knowledge imparted and time spent on each unit. It is expected that irrespective of the region, knowledge on all aspects will be imparted to trainees.

## Symbols Used



Ask



Activity



Do



Demonstrate



Explain



Elaborate



Example



Exercise



Facilitation Notes



Field Visit



Learning Outcomes



Notes



Objectives



Practical



Resources



Role Play



Summarize



Say



Team Activity

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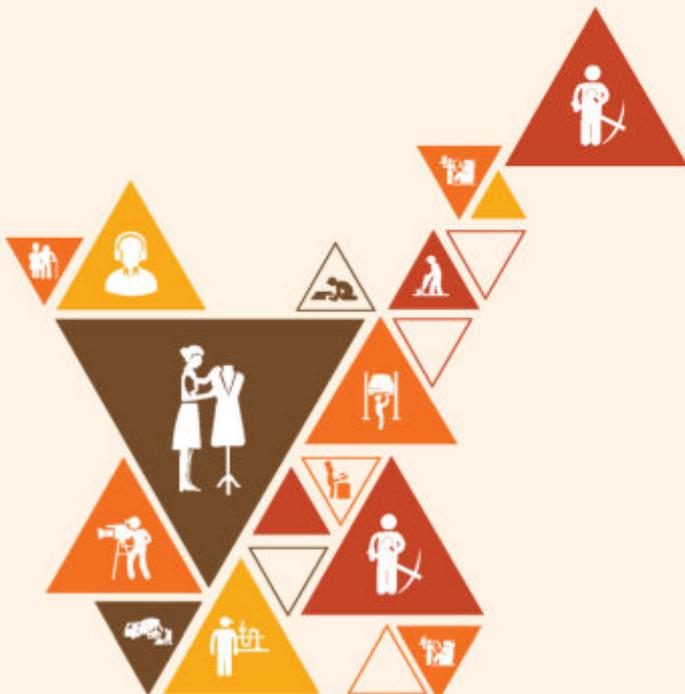
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# 1. Introduction to the Role of an Inland Capture Fisherman Cum Primary Processor

Unit 1.1 - Size and Scope of Agriculture Industry and Its Sub- Sectors

Unit 1.2 - The Role of Inland Capture Fisherman cum Primary Processor



**Bridge Module**

## Key Learning Outcomes



**After the completion of this module, the participant will be able to:**

1. Describe the size and scope of the Agriculture industry and its sub-sectors.
2. Discuss the role and responsibilities of an Inland Capture Fisherman cum Primary Processor.
3. Identify various employment opportunities for an Inland Capture Fisherman cum Primary Processor

## UNIT 1.1: Size and Scope of Agriculture Industry and Its Sub-Sectors

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Recognize importance of the programme.

### Resources

- Available objects such as a white board, duster, power point slides; pictures/posters

### Activity

**Purpose:** To acquaint the participants with each other and knowing well before sharing space inside classroom.

**Resources:** open ground, participants, big hall for accompanying the larger group of people sitting in small circles.

**Methodology:** Stage presentation and group discussions for about 15- 20 minutes.

#### Expected outcome

- Group activity and team building
- Ability to communicate with unknowns
- Enhancement in observation capacity

Ask the participants to stand in circle. Then tell them that before going into the learning mode, firstly we will play number game. Number in this game is 3. It means that starting person will call number 1, other person will call number 2 and next person will not pronounce the number rather will just raise his/her hand. If a person will call the number 3 then he/she will be out of the same. Similarly, for number 6, 9, 12 and so on only hand should be raised. This way the trainer can segregate the groups and as per the performance in number game people should sit for training sessions and this may result in the scenario that unknown people will sit each other. Then they should introduce themselves to each other.

It is up to the trainer and the sitting arrangements that how he/she would like to keep the trainees. Either in circle with a group of 5 or a group of 2 trainees. Trainees should introduce themselves to each other and within a group. Trainer can call the individuals to the stage and particular participant has to introduce their team member like this way introduction session of each participant should begin. Instead of self-introduction, they should involve in a process of introducing each other. After this activity, stage is all set to start the session.

**Say**

- 'Thank' you to everyone for their participation.
- Discuss with the participants to share their feelings about this exercise and what new things they have learned in this exercise.

**Ask**

- Ask the participants about what they know about size and scope of Agriculture Industry and its sub-sectors.

**Explain**

- Indian agriculture sectors and its sub sectors such as forestry, horticulture, fishery etc
- Growth rate of agriculture sectors and sub-sectors in past few years.
- India global stand in terms of producing
  1. Spices, pulses, milk, tea, cashew and jute
  2. Fruits and vegetables, freshwater fish
  3. Agri-tech start ups
  4. Agro-chemicals
  5. Farm equipment like tractor, harvesters and tillers

**Notes For Facilitation**

- Conclude the unit by calling for volunteers to sum up one by one the learning on importance of sanitizing the workplace, the procedure to sanitize and disinfect work area.
- Get participants to open up their participant handbooks and solve the exercises given at the end of the unit. Discuss the answers.

## UNIT 1.2: The Role of Inland Capture Fisherman cum Primary Processor

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Identify the role of the Inland Capture Fisherman cum Primary Processor and the progression pathway
2. List the job responsibilities for the Inland Capture Fisherman cum Primary Processor
3. List the skills and competencies requisite for the job role
4. Identify the job potential for Inland Capture Fisherman cum Primary Processor

### Resources to be Used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Note

- This is the second session of the programme, which will give the students an overview of the nature of the occupation, the salient features of Inland Capture Fisheries, skills and responsibilities required for the job role.

### Ask

Ask the participants the following questions:

- Why does an Inland Capture Fisherman need to keep the fishing vessel clean?
- Discuss the job potential for Inland Capture Fisherman and Primary Processor in India.

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

In this session, discuss the following points:

- Role of Inland Capture Fisherman cum Primary Processor
- Career Progression Pathway
- Job Potential for Inland Capture Fisherman cum Primary Processor in India

## Activity

**Purpose:** The purpose of this activity is to show participants different tools and equipment used by inland capture fisherman.

**Expected time:** 20-30 minutes

**Resources:** Different tools, projector, white screen, board etc

**Methodology:** Hands on, demonstration

**Instructions:**

Organize a practice session

- Show the students a range of tools and equipment
- Ask the students to identify the use of each equipment
- Declare the final marks based on the performance of each student

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.
- Ensure that all the participants can answer every question.

**Exercise** **Key Solutions to PHB Exercises****A. T/F**

1. F
2. F
3. F
4. T
5. F

**B. Yes/No**

1. Yes
2. Yes
3. No
4. No
5. No

**C. Answer the following Questions**

1. Inland Capture Fishermen cum Primary Processors must understand the importance of proper and periodic maintenance of fishing equipment, crafts, and machinery. Maintenance and cleaning of vessel and other equipment, using appropriate cleaning materials, must be adopted as a compulsory practice before and after every fishing trip. They must consider that a timely identification of the signs of wear and tear is essential because the defects/issues may get serious later on, and involve excess costs, thus eating up through their profits/margin per trip.
2. Fishing vessels must be cleaned before and after the trip to ensure smooth preparation and sanitization, respectively. Fishing vessels must be cleaned before trips to keep adequate space for catch targeted for the day. After the trips, fishing vessels must be cleaned properly to ensure the entire place is decontaminated in order to prevent infections (of the next catch and the fishermen) from the decaying remnants (blood, fins, tails, scales, entrails, etc.) of the catch. This must be ensured especially if degutting and descaling operations are done on the vessel itself.
3. Refer section 1.2.3 of PHB.

## Notes



A large rectangular area with a thin orange border, containing 30 horizontal lines for writing notes.





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## 2. Process of Preparation for Carrying Out Inland Capture Fisheries Operation

Unit 2.1 - Appropriate Fishing Methods in Inland Waters

Unit 2.2 - Appropriate Fishing Gear

Unit 2.3 - Designing and Rigging of Gears, Traps, and Pots

Unit 2.4 - Fishing Crafts Used in Inland Waters

Unit 2.5 - Necessary Infrastructure for Landing Fish

Unit 2.6 - The Economics of Fishing Operation

Unit 2.7 - Different Fishing Methods

Unit 2.8 - Selection of Fishing Grounds and Securing Fishing Permits



**AGR/N5006**

## Key Learning Outcomes



**After the completion of this module, the participant will be able to:**

1. Describe various inland fishing methods and techniques.
2. Describe the process of selecting an appropriate fishing method based on the region, target species and their seasonal availability.
3. Explain the difference between active and passive fishing gears and their benefits.
4. Describe the process of selecting active or passive fishing gear, hook size, traps, mesh size and type of bait according to the target fish species and its size.
5. Explain different types of fishing crafts used for different types of inland waters.
6. Describe the process of selecting motorised or non-motorised fishing craft according to the quantity of fish to be caught.
7. Explain how to adjust the nets according to the fishing method and species to be captured.
8. Describe the process of estimating the relevant operational costs.
9. Explain the use of various equipment and accessories required for the capture operation such as the anchor, satellite phone, longline gear materials, live baits, navigation and fish finding equipment, relevant Personal Protective Equipment (PPE), first aid kit, etc.
10. Explain the importance of stocking food, water and fuel on the boat in adequate quantity to last the capture operation.
11. Explain the relevant arrangement required on the fishing craft for the safe storage of fish after being captured.
12. Explain the importance of checking the weather conditions and forecast to select an appropriate period of conducive weather for the fishing operation.
13. Describe the process of selecting the fishing grounds according to the shoaling behaviour of the target fish species and planning the route.
14. Describe the process of applying for and securing the required fishing permits and licenses for inland capture fisheries operations.

## UNIT 2.1: Appropriate Fishing Methods in Inland Waters

### Unit Objectives

**After the completion of this unit, the participant will be able to:**

1. Choose appropriate fishing method based upon region, target species and seasonal availability
2. Recognize the type of gear (active and passive) depending on the target species
3. Identify the hook size and type of bait according to the target species
4. Select traps according to mesh size and target species
5. Identify the mesh size according to target species

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role).

### Note

- This is the first session of the programme, which will give the students an overview of the appropriate fishing methods in Inland waters

### Ask

Ask the participants the following questions:

- Can you name some of the fishing methods that are practised?
- Do you know what a Trawl Net is?
- Do you know the method used to catch a big school of fish?

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

In this session, discuss the following points:

- Fishing methods
- Type of fishing gear
- Hook size and type of bait according to type of species
- Size of mesh

**Say**

Let us now participate in an activity to understand the concept well.

**Activity**

**Purpose:** The purpose of this activity is to identify the fishing gear which is used to capture fish.

**Expected time:** 30-40 minutes

**Resources:** Flashcards, notebook, projector etc.

**Methodology:** Flashcard Based Activity Session

**Instructions:**

- Organize a Flashcard-based activity session
- Ask each student to pick up a flashcard
- Ask the students to identify the fish species depicted in the flashcard
- In the next step ask the students to identify the fishing gear which could be used for capturing that particular species
- Declare the final marks based on the performance of individual students

**Notes for Facilitation**

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.

## Exercise

### Key Solutions to PHB Exercises

1. ...
2. Boat seine
3. July-September
4. Passive
5. Hexagonal

### Match the columns

1. C
2. A
3. B
4. D

### Answer the following Questions

1. Hilsa- July to September  
Catla- June, July is the breeding season whereas some varieties of the fish have year-round availability.
2. Refer table 2.1.2 of PHB.
3. Refer section 2.1.5 of PHB.

## UNIT 2.2: Appropriate Fishing Gear

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Assess whether the weather condition is suitable for fishing
2. Identify the required fishing permits and licenses as per regulations
3. Recognise the natural habitat of the fish and foraging grounds
4. Identify operation costs and other overheads

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ Name some fishing methods
  - ✓ What are the types of fishing gear?
- Encourage participants to share their existing knowledge on appropriate fishing gear.

### Ask

Ask the participants the following questions:

- Do you think weather conditions play a big role in fishing activities?
- What is a Fishing Permit?
- Mention the natural habitat and foraging grounds for –
  - Rohu
  - Catla
  - Bhetki
  - Pomfret

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

## Elaborate

With the help of Participants Handbook discuss the following points with participants:

- How weather play a crucial role in determining the suitability of fishing activities.
- Fishing Permits and Licenses as per regulations
- Natural habitat and foraging grounds of fish
- Operation costs and other overheads

## Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to identify different freshwater fishes, natural habitat and foraging grounds.

**Expected time:** 40-45 minutes

**Resources:** Fish in jars, paper, pen

**Methodology:** Lab visit, Identification, discussion

**Instructions:**

- Organize a lab-based practice session
- Show the students jars holding different varieties of fish
- Ask the students to identify individual species in the jars
- The correct label/name will be removed during the activity session and the jars will be marked as A, B, C, D instead
- Ask the students to take a piece of paper and write down the correct names besides individual alphabets
- Declare the final marks based on the performance of individual students

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class
- Ask them to answer the questions given in the participant manual

## Exercise

### Key Solutions to PHB Exercises

#### A. True and False

1. False
2. True
3. False
4. True
5. False

#### B. Tick Correct Option

1. a
2. b
3. a
4. a
5. b

#### B. Fill in the missing cells

1. Refer table 2.2.1 of PHB

#### C. Answer the following questions

1. The impacts of weather conditions on fishing can vary depending on the species being targeted, but two examples are: (1) High winds and rough seas can make fishing dangerous and difficult, limiting fishing opportunities and potentially damaging fishing gear; (2) Cool water temperatures can stimulate fish feeding activity, making them more active and more likely to take bait or lures.
2. Refer Section 2.2.2 of PHB
3. Refer table 2.2.1 of PHB
4. Refer section 2.2.4 of PHB.

## UNIT 2.3: Designing and Rigging of Gears, Traps, and Pots

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Identify the factors influencing the designing and rigging of gears
2. Demonstrate the knowledge of designing and rigging of gear, traps, and pots

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session.
- Ask the following questions
  - ✓ What does the meaning of the term 'rigging', in relation to fishing gear?
  - ✓ What are the characteristics of good bait?
- Encourage participants to share their existing knowledge and experience on preparation of aquaculture farm.

### Elaborate

In this session, we will discuss the following points:

- Factors influencing designing and rigging of gear
- Designing Traps, Pots and other gear

### Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to identify different tools and equipment.

**Expected time:** 30-45 minutes

**Resources:** tools, paper, pen

**Methodology:** Lab visit, Identification, discussion

**Instructions:**

- Organize a lab-based practical activity session
- Divide the class into groups depending upon the batch strength
- You will provide each group with a range of tools and equipment such as floats, sinkers, ropes, twines, hooks, oars, anchors, ropes, etc.
- You will ask each group to design fishing gear using the list of equipment provided
- Declare the final marks based on the performance of each group

## Notes for Facilitation

- Ask the participants if they have any questions.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.

## Exercise

### Key Solutions to PHB Exercises

#### A. Tick the correct option

1. B
2. B
3. C
4. A
5. A

#### B. Answer the following questions

1. Designing means the process of building the framework or infrastructure of an equipment before its operation. Rigging means the system or the process of setting up all ropes and chains to support the structure of fishing gears.
2. Refer Section 2.3.1 of PHB for factors influencing the designing and rigging of gears.

## UNIT 2.4: Fishing Crafts Used in Inland Waters

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Identify mechanized and non-mechanized fishing vessels used in Inland waters of India
2. Demonstrate the processes of operating mechanized and non-mechanized fishing vessels

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ Name a few mechanized fishing gear.
  - ✓ Name a few non-mechanized fishing gear.
- Encourage participants to share their existing knowledge and experience on fishing crafts used in Inland waters.

### Explain

- Explain different types of Mechanised and Non-Mechanised fishing crafts in Inland waters of India such as:

Non-Mechanised includes

1. Cataraman
2. Dug-out Canoes
3. Dingi
4. Masula boats

Mechanised Includes

1. Hand line boat
2. Pole and line fishing vessel
3. Trolling vessel
4. Gill netter
5. Stern Trawler

## Demonstrate

- With the help of available resources demonstrate few videos based on fishing done using different kinds of boats.
- You can refer these videos  
<https://youtu.be/poj1hy01tbE>  
<https://youtu.be/tpYOh5pYaMU>

## Activity

**Purpose:** The purpose of this activity is to identify different merchandised and non-merchandised vessels

**Expected time:** 20-25 minutes

**Resources:** flashcards

**Methodology:** flashcard based activity

**Instructions:**

- Conduct a flashcard based activity
- For the purpose of evaluation divide the entire class into groups (depending upon the batch strength)
- Show flashcards depicting different boats and fishing vessels used for capturing fish to each group
- Ask the students to identify and distinguish between the different merchandised and non-merchandised vessels shown in the activity

## Notes For Facilitation

- Encourage participants to listen and learn from each other's experiences and perspectives.
- Summarize the key points covered in the session
- Encourage participants to ask questions and clarify any doubts they may have.
- Get participants to open up their participant handbooks and solve the exercises given at the end of the unit. Discuss the answers.

**Exercise** **Key Solutions to PHB Exercises****A. Identify the images**

1. B
2. C
3. A
4. B
5. C

**B. Match the Columns**

Refer table 2.4.1 of PHB

**C. Answer the following**

Refer table 2.4.1 of PHB

1. B
2. C
3. B
4. C

**D. Answer the following**

1. Sound Navigation Ranging (SONAR) can be used in fishing to detect the location of fish and other underwater objects. It works by emitting sound waves and measuring the time it takes for them to bounce back, creating a picture of the underwater environment. This information can then be used to target fishing areas with a higher concentration of fish.
2. GPS can be used in fishing to track the location of fishing vessels and to navigate to specific fishing spots. It can also be used to mark and return to successful fishing locations, or to share location information with other boats in a fleet.
3. VHF radio can be used in fishing to communicate with other boats, to receive weather updates or other important information, or to call for help in an emergency. It operates on a specific range of frequencies and can transmit voice and data signals over long distances.

**E. Identify the images**

1. c
2. a
3. a
4. a

**F. Match the Columns**

1. Refer table 2.4.1 of PHB

**G. Answer the following**

1. Three life-saving devices that can be useful for an Inland Capture Fisherman include Personal Floatation Devices (PFDs) to keep them afloat if they fall overboard, First Aid Kits to help treat injuries, and Emergency Position Indicating Radio Beacons (EPIRBs) to alert rescue services if they are in trouble.
2. A fisherman needs lifeboats to provide a safe means of escape in case of an emergency, such as a boat taking on water or catching fire. Lifeboats can also provide shelter and a stable platform for rescue operations.
3. Safety lights can play an important role in fishing activity by increasing visibility in low light or foggy conditions. They can help other boats see the fisherman's vessel, or help the fisherman see their equipment and surroundings more clearly.

## UNIT 2.5: Necessary Infrastructure for Landing Fish

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Identify the infrastructure required for landing fish safely at Landing Centres
2. Identify the infrastructure required for landing fish safely at Auction Markets

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session.
- Ask the following questions
  - ✓ What is a landing centre?
  - ✓ Do you know why auction halls need good lighting?
- Encourage participants to share their existing knowledge about infrastructure for landing fish.

### Elaborate

In this session, discuss the following points:

- Infrastructure requirement for landing centres
- Design and layout of auction halls
- Discuss on how to design auction halls to minimise air exchanges maintained temperature and minimised pest entry.

### Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to understand infrastructural requirements for landing centres and auction halls

**Expected time:** 20-25 minutes

**Resources:** Hands out

**Methodology:** Class activity, discussion

**Instructions:**

- Organise a practice session
- Provide students with hand-outs.
- The hand-outs will describe the infrastructural requirements for Landing Centers and Auction halls.
- Ensure that you provide both correct and wrong options against each criterion as discussed in the hand-outs
- Ask the students to identify the correct options and jot them down in a piece of paper and submit the same
- Allot marks based on the performance of each student

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.

## Exercise

### Key Solutions to PHB Exercises

#### Tick correct option

1. c
2. b
3. c
4. a
5. a

#### Complete below sentences

1. A
2. A
3. B
4. A
5. B

#### Answer the following

1. Landing centres are places for landing small-scale catch from conventional fishing crafts. On an average, 25 to 100 conventional crafts can land their catch in a Landing centre. Considering that the catch capacity of an average conventional fishing craft is about 500 kg per day, the capacity of Landing centres must be at least 5 tonnes (1 ton = 1000 kg) at a time and at least 50 tonnes per day. Landing centres must also have water, ice, and insulated stores of approved quality to house and preserve the landed catch safely.
2. Doors– All doors must be close-fitted, robust, and easy to clean. Insulated sliding doors are recommended for fish handling areas. Doors must be lockable but must comply with fire and safety regulations.  
Lighting– Lighting levels must be sufficient, uniformly distributed, and without shadow

## UNIT 2.6: The Economics of Fishing Operation

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Analyse how the fishing activity can be profitable
2. Outline the importance of eliminating the non-target species from harvesting activity

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session.
- Ask the following questions
  - ✓ What is the appropriate season for the cultivation of Hilsa?
  - ✓ What measures could be taken to prevent overfishing?
- Encourage participants to share their existing knowledge about economics of fishing operation.

### Elaborate

In this session, discuss the following points:

- Economics of Fishing Operation
- Turtle excluder device.
- Juvenile escapement device and By-catch reduction device
- Fix minimum sustainable yield and maximum economic yield
- Marine fishing regulation act, 2004
- Exclusive economic zone

### Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to understand varieties or fishes which are captured the most or sold in abundance.

**Expected time:** 60-90 minutes

**Resources:** pen, notebook, relevant tools

**Methodology:** Filed Based Activity Session

**Instructions:**

- Conduct a field visit based activity
- Divide the class into groups depending upon the batch strength
- Ask each group to visit their nearby foraging ground and collect data on the varieties or fishes which are captured the most or sold in abundance
- Ask the groups to compare their individual set of data as it will help in identifying the species of higher economic importance
- You will ask each group to submit a detailed report after completion of their activity
- You will present the final marks based on the performance of each group

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant handbook.

## Exercise

### Key Solutions to PHB Exercises

#### True or False

1. False
2. True
3. True
4. False
5. False

#### Identify the non-target species from the below table and tick against their names:

Turtle, Mackerel sharks, lobster

#### Answer the following

1. Three features of a fisherman that can make fishing activity more profitable are:
  - Knowledge and skills
  - Adaptability
  - Business acumen
2. Juvenile Escapement Device (JED): This device is installed on fishing gear, such as trawls or nets, to allow juvenile fish to escape unharmed. It works by creating an opening in the net or trawl that is too small for adult fish to pass through, but large enough for juvenile fish to swim out.  
By-catch Reduction Device (BRD): This device is designed to reduce the amount of non-target species caught in fishing gear. It can be used in different types of gear such as trawls, nets or lines. The BRD works by creating an escape path for non-target species while keeping the target species in the gear.
3. Refer section 2.6.2 of PHB.

## UNIT 2.7: Different Fishing Methods

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Use different fishing methods

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What is Juvenile escapement device and By-catch reduction device?
  - ✓ What do you understand by Marine fishing regulation act, 2004?
- Encourage participants to share their existing knowledge and experiences on different fishing methods.

### Elaborate

- Discuss about different fishing methods such as
  - ✓ Fishing with Gillnet
  - ✓ Fishing with Boat Seine
  - ✓ Fishing with Shore Seine
  - ✓ Fishing with Cast netting
  - ✓ Fishing with hooks and line
  - ✓ Fishing with the help of various traps
- Elaborate in detail steps for harvesting fish using
  - ✓ Seine Net fishing
  - ✓ Seine cast net
  - ✓ Hooks and line fishing

## Explain



- The importance of weather forecasting in fishing operations.
- How the availability of sea surface temperature is of particular significance to fishing fleets?
- Arrangement required on the fishing craft for the safe storage of fish which are as follows:
  - ✓ Water supply
  - ✓ Ice
  - ✓ Fish hold
  - ✓ Containers
  - ✓ Cleaning and disinfection

## Notes for Facilitation



- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.

## Exercise



### Key Solutions to PHB Exercises

#### A. Fill in the Blanks

1. a
2. b
3. c
4. c
5. a

#### B. Write in Appropriate Sequence

Refer table 2.7.1 of PHB

#### C. Answer the following

1. Boat Seine fishing method involves a conical netting body, a bag net, and two long wings. The capture efficiency of Boat Seines is very high because the long wings encircle a large surface area of the inland waters in a triangular pattern.
2. Refer table 2.7.1 of PHB.
3. Refer table 2.7.2 of PHB.
4. Pot Trap is most common form of fish trap.

## UNIT 2.8: Selection of Fishing Grounds and Securing Fishing Permits

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Describe the process of selecting the fishing grounds according to the shoaling behaviour of the target fish species.
2. Describe the process of securing the required fishing permits and licenses for inland capture fisheries operations.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What is the importance of weather forecasting in fishing operations?
  - ✓ How the availability of sea surface temperature is of particular significance to fishing fleets?
- Encourage participants to share their existing knowledge and experiences on how to secure fishing permits.

### Elaborate

- Discuss on the process of selecting the fishing grounds according to the shoaling behaviour of fish.
- On how fish locations can be predicted accurately
- Elaborate in detail on fishing acts and regulations which control the fishing activities such as:
  - ✓ Merchant shipping act, 1958
  - ✓ Maritime zones act, 1976
  - ✓ Coast guard act, 1978
  - ✓ Maritime fishing policy, 2004

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.

## Exercise

### Key Solutions to PHB Exercises

#### Answer the following

1. Shoaling behaviour is a social behaviour exhibited by many fish species where they swim in groups, usually of the same species, for various reasons such as protection from predators, better foraging, and easier mating opportunities. The behaviour can be observed in both freshwater and marine fish and is considered to be an adaptive strategy to increase survival rates.
2. The process of applying for licenses for fishing practices varies depending on the country and the type of fishing. Generally, one would need to obtain a fishing license from the local or national government authority responsible for managing fisheries.  
Refer section 2.8.2 of PHB
3. Following are the acts and regulations
  - Merchant shipping act, 1958
  - Maritime zones act, 1976
  - Coast guard act, 1978
  - Maritime fishing policy, 2004





## 3. Process of Carrying Out Capture Operation, Primary Processing and Marketing of Fish

- Unit 3.1 - Motorised and Non-Motorised Fishing Crafts
- Unit 3.2 - Ways of Capturing Fishes
- Unit 3.3 - Ecosystem-Based Approach to Optimum Fishing Practices
- Unit 3.4 - Hygienic Handling and Preservation of Fish
- Unit 3.5 - Precautionary Measures
- Unit 3.6 - Sorting Fish
- Unit 3.7 - Storage of Fish
- Unit 3.8 - Fish Marketing
- Unit 3.9 - Resource Optimization
- Unit 3.10 - Gender and Pwd at Workplace



## Key Learning Outcomes



**After the completion of this module, the participant will be able to:**

1. Explain how to operate motorised and non-motorised fishing crafts.
2. Explain how to capture fish following different active or passive fishing methods.
3. Explain the importance of ensuring no negative impact on natural habitats and ecological systems during fishing operations.
4. Describe the process of hauling and storing the catch in the fishing craft ensuring the recommended temperature and hygienic conditions.
5. State the appropriate precautionary measures to be taken to avoid collision with other fishing crafts.
6. State the applicable precautionary measures to be taken while fishing in isolation and deep waters.
7. Explain the applicable parameters to sort and grade the captured fish, such as weight, appearance, odour, market demand, etc.
8. State appropriate temperature to store the processed fish.
9. Describe the process of marketing the fish.
10. Explain the benefits of resource optimisation.
11. Explain the importance of recycling and disposing different types of waste as per the applicable regulations.
12. Explain the importance of inclusion of all genders and People with Disability (PWD) at the workplace

## UNIT 3.1: Motorised and Non-Motorised Fishing Crafts

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Demonstrate the operation of motorised and non-motorised fishing crafts

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session.
- Ask the following questions
  - ✓ What are motorised fishing vessels?
  - ✓ What are non-motorised fishing vessels?
- Encourage participants to share their existing knowledge and experiences on motorised and non-motorised fishing crafts.

### Elaborate

In this session, discuss the following points:

- Motorised boats
- Non-motorised boats
- Different types of fishing gear used

### Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to understand varieties of fishes which are captured the most or sold in abundance.

**Expected time:** 60-90 minutes

**Resources:** pen, notebook, relevant tools

**Methodology:** Hands on, Discussion

**Instructions:**

- Inform the class that there will be a practice session
- Divide the entire class into groups, depending upon the batch strength
- Ask one group to prepare a Clinch Knot and the other group to prepare a Uni-Knot
- Declare the final marks based on the performance of individual groups

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise

**Key Solutions to PHB Exercises**

**A. Tick the correct option**

1. C
2. B
3. B
4. B
5. C

**B. Answer the following**

1. The motorised fishing vessels are fitted with an outboard motor and a trolling motor. These have storage bins for stocking the fish harvest, a tank, which re-circulates the water to keep the catch in fresh condition and swivel chairs where the fishermen sit and operate the anglers.
2. Tank re-circulates the water to keep the catch in fresh condition.
3. Due to less harm imposed on the environment, traditional non-motorized boats have been exempted from the fishing restrictions imposed on motorised vehicles.

## UNIT 3.2: Ways of Capturing Fishes

### Unit Objectives

After the completion of this unit, the participant will be able to::

1. Explain how to capture fish following different active or passive fishing methods

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What is the difference between Motorised boats and Non-motorised boats.
- Encourage participants to share their existing knowledge on ways of capturing fishes.

### Elaborate

With the help of participants handbook elaborate the following:

- Active gears and passive gears
- Beam trawl
- Bottom trawl
- Pelagic trawl

### Explain

- How the effectiveness of active gear depends the movement of fish themselves for efficiency.

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual.

## Exercise

### Key Solutions to PHB Exercises

#### Answer the following

1. Active method of capturing fish involves actively pursuing and catching fish using gear such as fishing lines, nets, or traps.
2. Passive method of fish capturing involves the use of fixed gear that attracts fish to come and get caught, such as gillnets, traps, or weirs.
3. Pelagic trawl is a type of fishing gear that is towed through the open water, catching fish and other marine species that live in the water column, rather than on the ocean floor. It typically consists of a large net with floats on the top and weights on the bottom that allow it to sink and form a wide mouth.

## UNIT 3.3: Ecosystem-based Approach to Optimum Fishing Practices

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Explain the importance of ensuring no negative impact on natural habitats and ecological systems during fishing operations.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ How the effectiveness of active gear depends the movement of fish themselves for efficiency.
- Encourage participants to share their existing knowledge on ecosystem based approach to optimum fishing practices.

### Explain

- Why there is a need to regulate fishing activity
- What's the benefit of practising sustainable fishing.
- Social, economic and environmental advantages to sustainable fishing, some of them are as follows
  - ✓ Protect marine fauna
  - ✓ Uses selective methods
  - ✓ Avoids waste
  - ✓ Reduces pollution

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise

### Key Solutions to PHB Exercises

#### Answer the following

1. Sustainable fishing is a method of fishing that is practiced in a way that does not deplete fish stocks, maintains the balance of the ecosystem, and ensures the long-term availability of fish for future generations.
2. Ensuring no negative impact on ecological systems is important because the ecosystem is interconnected, and any disruption to one species or component can affect the entire system. Negative impacts can lead to a decline in fish populations, which can ultimately result in the collapse of the fishery, affecting the livelihoods of those who depend on it. By minimizing negative impacts, we can ensure the long-term sustainability of the fishery and protect the ecosystem for future generations.

## UNIT 3.4: Hygienic Handling and Preservation of Fish

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Practise hygienic handling and preservation of fish

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

- What hygiene requirements should be maintained at landing sites?
- Mention some hygiene requirements for Fishing Crafts.

### Elaborate

In this session, discuss the following points:

- Hygiene requirements on Fishing Crafts
- Hygiene requirements at Landing Sites

### Demonstrate

- Show the students a video based on maintaining hygiene at fish landing sites

You can refer to this video: <https://youtu.be/K9PQImFdpA8>

## Say



- Let us now participate in another interesting activity for understanding the concept well.

## Activity



**Purpose:** The purpose of this activity is to understand hygienic handling of fish.

**Expected time:** 30-40 minutes

**Resources:** pen, notebook, relevant tools

**Methodology:** Practice-Based Activity

**Instructions:**

- Inform the class that there will be a practice session
- Divide the class into groups depending upon the batch strength
- Provide each group with pictures of landing sites
- Ask each student to identify the unhygienic conditions prevalent there and state the appropriate cleaning measures

## Notes for Facilitation



- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise

### Key Solutions to PHB Exercises

#### A. Identify Hygienic and Unhygienic

1. Unhygienic
2. Hygienic
3. Hygienic
4. Unhygienic
5. Unhygienic
6. Hygienic
7. Unhygienic
8. Hygienic
9. Unhygienic
10. Unhygienic

#### B. Answer the following

1. Cleaning the fishing craft thoroughly with clean water and an approved detergent, followed by rinsing with clean water before each fishing activity
  - Avoiding the usage of water close to the shore for cleaning since this water is usually polluted
  - Carrying animals on the fishing craft and transporting items, other than the catch, on the boat
2. Keeping the landing site clean and hygienic
  - Using ice (for chilling and preserving) made from clean water only
  - Avoiding the use of polluted shore water or sewage water for cleaning landing sites

## UNIT 3.5: Precautionary Measures

### Unit Objectives

**After the completion of this unit, the participant will be able to:**

1. State the appropriate precautionary measures to avoid collision with other fishing crafts.
2. State the applicable precautionary measures to be taken while fishing in isolation and deep waters.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What do you understand by hygiene requirements on Fishing Crafts and Hygiene requirements at Landing Sites
- Encourage participants to share their existing knowledge of precautionary measures.

### Elaborate

- Elaborate in detail what operators of vessels should have such as:

Comply with navigational regulations.

- ✓ Take note of the directional signs.
- ✓ Keep a close eye on everything and designate one person to be the "lookout."
- ✓ Maintain a safe speed, especially at night and in congested traffic.
- ✓ Before making any turn, take a thorough look around.
- ✓ If you're driving into the brightness of the sun on the sea, proceed with caution.
- ✓ Never drive while feeling stressed, tired, or drunk.
- Precautionary measures to be taken while fishing in isolation and deep waters

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise

### Key Solutions to PHB Exercises

1. Refer section 3.5.1 of PHB.
2. Refer section 3.5.2 of PHB.

## UNIT 3.6: Sorting Fish

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Recall the meaning and importance of Sorting
2. Demonstrate the process of sorting catch as per specific criteria

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Say

- Good day and a very warm welcome to this training program 'Inland Capture Fisherman cum Primary Processor'.

### Ask

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

- What are the different methods of sorting fish?
- How are the captures species stored?

### Elaborate

In this session, discuss the following points:

- Meaning and importance of Sorting
- Sorting the Captured Species

## Demonstrate



- Show the students a video based on the sorting of Fishes  
You can refer to this video: <https://youtu.be/sFudBBXbMaE>

## Notes for Facilitation



- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise



### Key Solutions to PHB Exercises

1. Sorting captured fishes involves separating and grouping them based on their species, size, quality, and any other relevant criteria.
2. Three parameters for sorting captured fishes are:
  - Species: Sorting fishes by species is important for marketing, as different species have different market values and are used for different purposes.
  - Size: Sorting fishes by size is important for marketing and processing purposes, as different sizes of fishes are used for different markets and products.
  - Quality: Sorting fishes by quality involves examining their freshness, color, texture, and other factors that determine their market value and suitability for consumption.
3. To sort fishes according to customer requirements, a fisherman needs to know the customer's specific needs, such as species, size, quality, and quantity. The fisherman can then select and sort the fishes accordingly, ensuring that they meet the customer's requirements and preferences.

## UNIT 3.7: Storage of Fish

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Select storing techniques for captured fish
2. List the common materials for undertaking storage

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

- Do you know any storing techniques for captured fish?
- Can you name some common material used for storing fish?

### Elaborate

With the help of participants book discuss the following points:

- Most suitable techniques of fish storage such as:
  1. Bulking
  2. Shelving
  3. Boxing
- Comparison between the common storage materials such as:
  1. Polyethylene containers
  2. Disposable boxes
  3. Polystyrene containers
  4. Styropor containers
  5. Therma grad bag
  6. Stratech boxes

**Say**

- Let us now participate in an activity to understand the concept well.

**Activity**

**Purpose:** The purpose of this activity is to understand various types of storage materials.

**Expected time:** 60-90 minutes

**Resources:** pen, notebook, relevant tools/containers

**Methodology:** Hands on, Discussion

**Instructions:**

- Conduct a practice session
- Divide the class into groups, depending upon batch strength
- Provide each group with various kinds of storage materials such as polyethylene containers, polystyrene containers, styrop containers, Therma Grad bag
- Provide each group with different storage conditions such as :
  - High-Density Material
  - Transporting chilled catch
  - Transporting catch in trucks with no cooling system
- Ask each group to identify the appropriate storage material
- Declare the final marks based on the performance of each group

**Notes for Facilitation**

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise

### Key Solutions to PHB Exercises

#### A. Complete the sentences

1. Closely fitted
2. Thin metal coating
3. Best insulation
4. Freight charges
5. 6" above the floor

#### B. Match the column

1. B
2. C
3. E
4. D
5. A

#### C. Tick the correct one

1. A
2. A
3. B
4. B

#### D. Answer the following

1. Bulking, Shelving
2. Refer table 3.7.1 of PHB

**3. Advantages:**

Very light and easy to handle, Best-suited for transporting live catch, Excellent insulating properties, Reflects almost all radiations due to the thin metal coating

**Disadvantage:**

Costly

## UNIT 3.8: Fish Marketing

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Describe the process of marketing the fish.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What are the most suitable techniques of fish storage?
  - ✓ Name some common storage animals.
- Encourage participants to share their existing knowledge and experiences with fish marketing.

### Explain

- Fish marketing practices and structure of markets
- Fish marketing channels
- Types of fish markets based on the place and products such as:
  - ✓ Whole sale market
  - ✓ Primary wholesale market
  - ✓ Secondary wholesale market
  - ✓ Terminal markets
  - ✓ Retail markets
  - ✓ Fairs

## Field Visit



- Organize a field visit to the nearest fish market where participants can learn about structure of market, fish marketing channels.

## Notes for Facilitation



- Ask the participants if they have any questions.
- Encourage participants to involve in activities like field visit and hands on activities.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant handbook

## Exercise



### Key Solutions to PHB Exercises

1. Higher volumes of fish are sold at this market. In this type of market, the fish are collected from surrounding places and sold to the wholesalers.
2. These markets involve selling fish to retailers, agents, and consumers.
3. A sizable number of intermediaries dominate domestic fish markets and distribution. All domestic fish commerce and exports go through private channels. Four levels are often involved in fish distribution.
4. Refer Section 3.8.1 of PHB.

## Unit 3.9: Resource Optimization

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Explain about resource optimization and its benefits.

### Resources to be Used

- Available objects such as a whiteboard, duster, and flip chart, paper, pen projector, computer/laptop etc.
- Slides in power point presentation representing relevant images

### Ask

- What do you understand by waste management
- What is resource optimization, and why is it important in the context of agriculture?
- What are some of the waste management challenges that you have encountered in your farming operations?

### Explain

- Explain the process of Resource Optimization.
- Describe the process of segregating waste into appropriate categories

### Do

- Provide examples of resource optimization and waste management in the agricultural industry, such as using renewable energy sources or creating value-added products from waste materials.
- Discuss how technology can be used to improve resource optimization and waste management in the supply chain.
- Provide case studies of successful waste-to-wealth operations in the agricultural industry.

## Demonstrate



- Demonstrate how to calculate the cost savings that can be achieved through resource optimization and waste management.
- Show how waste materials can be turned into value-added products, such as compost or animal feed.

## Elaborate



- Elaborate on the benefits of resource optimization and waste management for the environment, such as reducing greenhouse gas emissions and improving soil health.
- Elaborate on the role of different stakeholders in enabling waste-to-wealth operations in the agricultural industry, such as government agencies, private companies, and NGOs.

## Notes for Facilitation



- Encourage participants to share their own experiences with resource optimization and waste management in their farming operations.
- Use case studies and examples to illustrate the concepts of resource optimization and waste management.
- Be prepared to answer questions about the technical aspects of waste-to-wealth operations

## Exercise



### Key Solutions to PHB Exercises

#### A. Short Answers

1. Resource optimization is the set of processes and methods to match the available resources (human, machinery, financial) with the needs of the organization in order to achieve established goals. Optimization consists in achieving desired results within a set timeframe and budget with minimum usage of the resources themselves.
2. Benefits of resource optimization includes:
  - ✓ Resources scheduling
  - ✓ Reduced overheads and increased revenue
  - ✓ Resource levelling
1. Refer section 3.9.2 of PHB.

## UNIT 3.10: Gender & PwD at Workplace

### Unit Objectives

**After the completion of this unit, the participant will be able to:**

1. Explain gender-neutral behaviour at work.
2. Describe the process of empathising with the persons with disabilities (PwD) at work.

### Resources to be Used

- Available objects such as a whiteboard, duster, and flip chart, paper, pen projector, computer/laptop etc.
- Slides in power point presentation representing relevant images

### Ask

- Have you ever worked with someone who had a disability?
- Have you ever noticed any gender bias or inequality at your workplace?

### Team Activity

- Divide the participants into small groups and ask them to share experiences of working with people who have disabilities.
- Then ask them to discuss any instances of gender bias they have observed or experienced at their workplaces.
- Instruct each group to come up with one practical solution to address gender bias or promote disability inclusion at the workplace.

### Do

- Provide examples of gender-neutral behaviour that should be exhibited in the workplace.
- Discuss the steps that can be taken to ensure gender-neutral behaviour at work.

## Demonstrate



- Demonstrate the use of inclusive language and behaviours that support diversity in the workplace.

## Elaborate



- Elaborate on the steps that can be taken to ensure that employees with disabilities are provided with the support they need to be successful in their roles.
- Elaborate on the business case for diversity and inclusion, and how it can lead to better decision-making, increased innovation, and improved performance.

## Notes for Facilitation



- Encourage participants to listen and learn from each other's experiences and perspectives.
- Summarize the key points covered in the session
- Encourage participants to ask questions and clarify any doubts they may have.
- Get participants to open up their participant handbooks and solve the exercises given at the end of the unit. Discuss the answers.

## Exercise



### Key Solutions to PHB Exercises

#### A. Short Answers

1. "Person with disability" means a person with long term physical, mental, intellectual or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society equally with others.
2. Discuss with students.

#### B. Fill in the blanks

1. Sympathy
2. ....
3. Mentorship

#### C. Multiple Choice

1. D
2. D

#### D. True/False

1. F
2. F
3. F







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## 4. Process of Preparing, Canning, Labelling and Marketing Fish-based Products

Unit 4.1 - Basic Fish Preservation Methods

Unit 4.2 - Different Types of Value-added Fish Products

Unit 4.3 - Hygiene and Safety Standards

Unit 4.4 - Processing and storage



AGR/N5125

## Key Learning Outcomes



**After the completion of this module, the participant will be able to:**

1. Describe the process of curing the fish following an appropriate method such as sun-drying, salting, pickling, smoking, etc.
2. List different types of sashimi-grade fish.
3. Explain the applicable hygiene and safety standards Good Manufacturing Practices (GMP), Sanitation Standard Operating Procedure (SSOP), Good Hygiene Practices (GHP) and Hazard Analysis and Critical Control Points (HACCP).
4. Explain the importance of using tin cans coated with a Sulphur-resistant lacquer to can the fish.
5. Explain the use of an appropriate liquid medium/ additive such as Brine or double-refined and deodorised vegetable oil to improve the taste, texture and flavour of the fish.
6. State the recommended temperature for heat processing.
7. Explain the importance of cooling the heat-processed cans in chlorinated water of potable quality and storing the processed cans in a clean, cool and dry storage.

## UNIT 4.1: Basic Fish Preservation Methods

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Employ proper chilling methods.
2. Practise proper freezing methods.
3. Demonstrate proper drying practices
4. Practise salting/curing of the raw material.
5. Use proper smoking methods.
6. Illustrate basic functions associated with canning.
7. Prepare Picked and marinated fish products.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Ask the following questions:

- What is the Chilling method of preservation?
- In the fish 'drying method', why do you need to rub salt all over the fish?

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

With the help of the participant handbooks discuss the following:

- Different methods of Preservation methods such as:
  - Chilling method
  - Freezing method
  - Drying practices
  - Salting/curing of the raw material
  - Smoking methods

## Say



- Let us now participate in another interesting activity for understanding the concept well

## Activity



**Purpose:** The purpose of this activity is to understand hygienic handling of fish.

**Expected time:** 30-40 minutes

**Resources:** pen, notebook, relevant materials for canning of fish.

**Methodology:** Practical

**Instructions:**

- Conduct a practical session
- Provide the students with sample specimen of fishes
- Ask them to perform the canning of the fish specimens
- Mark the students based on their individual performance

## Explain



- Process of fish drying naturally as well as artificially
- Vital factors involved in the salting of fish which includes
  - ✓ Purity of salt
  - ✓ Quantify of salt used
  - ✓ Method of salting
  - ✓ Weather conditions like temperature, humidity, etc
- Steps of canning
- How pickled and marinated fish products are made.
- Difference between cold smoking and hot smoking.
- Controls for employing proper smoking methods.

## Notes for Facilitation



- Ask the participants if they have questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant handbook.
- Ensure that all the participants can answer every question.

**Exercise** **Key Solutions to PHB Exercises****A. State True or False**

1. False
2. False
3. False
4. True
5. False

**B. Rearrange the steps**

- Refer section 4.1.7 of the PHB.

**C. Answer the following questions**

1. Refer table 4.1.7 of PHB

**D. Tick the correct option**

1. B
2. B
3. A
4. B
5. B
6. C
7. A

**E. Answer the Following**

1. Refer section 4.1.2 of PHB and discuss with the participants.
2. In Drying, the water is removed from the body of the fish to keep it dry and delay the rotting process. This is achieved through proper drying process. When the moisture content is reduced up to 10%, the action of bacteria and other enzymes are stopped keeping the fish fresh. It can be done naturally or artificially.
3. Refer section 4.1.5 of PHB.

## UNIT 4.2: Different Types of Value-Added Fish Products

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Describe Value-added products and their importance
2. Identify the different types of value-added fish products

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Ask the following questions:

- How is fish mince made?

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

In this session, we will discuss the following points:

- Value added products and their importance for the Job role.
- Different types of value-added fish products such as:
  - ✓ Pickled and marinated fish products
  - ✓ Fish mince
  - ✓ Fish ginger
  - ✓ Fish cutlet
- Popular fish varieties used for sashimi which includes:-
  - ✓ Salmon
  - ✓ Tuna
  - ✓ Halibut
  - ✓ Japanese Mackerel
  - ✓ Yellow tail
  - ✓ Red Snapper

## Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to understand about various fish preparations/value added products.

**Expected time:** 30-40 minutes

**Resources:** pen, notebook, flashcards

**Methodology:** Class activity

**Instructions:**

- Organize a Flashcard based Activity Session
- Divide the class into groups depending upon batch strength
- Show the students a number of flashcards with pictures of various fish preparations/value added products
- Ask the students to identify the fish species which goes into making the preparation
- Declare the final marks based on the performance of each student

## Notes for Facilitation

- Ask the participants if they have questions
- Answer all the doubts made by the students in the class
- Ask them to answer the questions given in the participant handbook
- Ensure that all the participants can answer every question

## Exercise

**Key Solutions to PHB Exercises**

### A. Match the Columns

1. B
2. C
3. D
4. A

### B. Answer the following

1. Refer section 4.2.1 of PHB.
2. Refer section 4.2.2 of PHB.

## UNIT 4.3: Hygiene and Safety Standards

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Recall the meaning of Chilling
2. List the factors that determine the quantity of ice needed for chilling
3. Demonstrate the process of calculating the amount of ice needed for chilling catch

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role).

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What do you understand by value added products?
  - ✓ Name some value added products made from fish.
- Encourage participants to share their existing knowledge about hygiene and safety standards.

### Elaborate

- Elaborate on the fact that quality is one of the most important factors to take care of in the fish processing business.
- Scope of GMP norms which comprises of:
  - ✓ Minimising risks related to contamination of products and raw materials
  - ✓ Personal Hygiene of staff and customers alike
  - ✓ Wrong or inappropriate labelling on containers
  - ✓ Insufficient of excessive ingredient
- Importance of recycling and disposing.

## Explain



With the help of PHB explain the following:

- HACCP concepts
- Sanitation Standard Operating Procedure (SSOP)
- Good Hygiene Practices(GHP)

## Notes for Facilitation



- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise



### Key Solutions to PHB Exercises

1. a
2. Hazard Analysis and Critical Control Points, commonly known as HACCP, is a preventive method of protecting food from chemical, biological, and physical hazards. Such hazards, if not minimised or eliminated, may turn the finished food products unsafe for consumption.
3. Good hygiene practises are a set of guidelines for avoiding food contamination so that consumers can eat healthy food. To ensure that food is secure and fit for human consumption, food processors, including hotels and restaurants, must comply with the minimum sanitary and hygiene standards.

## UNIT 4.4: Processing and Storage

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Explain the importance of using tin cans coated with a Sulphur-resistant lacquer to can the fish.
2. Explain the use of an appropriate liquid medium/ additive .
3. State the recommended temperature for heat processing.
4. Explain the importance of cooling the heat-processed cans.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What is HACCP concepts?
  - ✓ What is the full form of SSOP?
- Encourage participants to share their existing knowledge and experience of processing and storage.

### Elaborate

With the help of participants handbook elaborate the following:

- On what basis packing material is chosen and packing specifications based in products.
- Requirements for an interior lacquer
- Processing of fish which includes:
  - ✓ Salting/Blanching/Precooking
  - ✓ Thermal processing of fish
  - ✓ Cooling
  - ✓ Storage

## Say

Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to understand various post-processing methods.

**Expected time:** 60-90 minutes

**Resources:** pen, notebook, relevant tools

**Methodology:** Hands on, Discussion

**Instructions:**

- Conduct a practice session
- Divide the entire class into groups, depending upon the batch strength
- Ask each group to perform the post-harvesting handling and processing mechanisms in a sequential manner such as:
  - Washing
  - Chilling
  - Degutting
  - Packaging
- Evaluate the performance of each group on a step by step basis

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant manual

## Exercise

### Key Solutions to PHB Exercises

1. Tin cans are coated with a Sulphur-resistant lacquer to prevent corrosion and protect the metal from the acids present in the fish. This coating ensures that the cans remain airtight and that the fish remains fresh for a long time. The lacquer also protects the fish from contamination by tin and other metals that may leach into the food from the can.
2. The recommended temperature for heat processing of canned fish is between 115-121°C for at least 30 minutes. This ensures that all the harmful bacteria in the fish are destroyed, making the fish safe for consumption and also increasing its shelf life.
3. Cooling of the heat-processed cans is important to prevent the growth of bacteria that can cause spoilage. After the cans are heat processed, they are quickly cooled down to room temperature or below. This rapid cooling process prevents any bacteria that may have survived the heat processing from multiplying and causing spoilage.







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# 5. Safety and Hygiene Practices in Capturing Fisheries

Unit 5.1 - Personal Hygiene and Safety

Unit 5.2 - Cleanliness and Hygiene of Deck, Pre-Processing Shed, Fish Holds, Crates and Utensils

Unit 5.3 - Communication Devices

Unit 5.4 - Cleaning and Maintenance of Gears

Unit 5.5 - Maintain Engines and Fishing Crafts

Unit 5.6 - Codes of Conduct for Responsible Fishing



**AGR/N5103**

## Key Learning Outcomes



**After the completion of this module, the participant will be able to:**

1. State the relevant regulations to be followed in the marine waters such as Coastal Regulation Zone (CRZ) guidelines.
2. Describe the process of using the relevant equipment to detect ships/ boats in the vicinity and the appropriate measures to be followed to avoid collisions.
3. Describe the process of detecting underwater dangers along the fishing route and appropriate measures to be taken to mitigate them.
4. State the applicable laws related to fishing methods, use of different types of fishing gear, conservation of banned species, disposal of dead/ damaged fish, etc.
5. Describe the process of identifying poisonous creatures caught with the fish.
6. State the temperature and hygiene requirements for storing the fish to maintain its freshness.

## UNIT 5.1: Personal Hygiene and Safety

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Describe personal hygiene for the job role
2. List the personal hygiene, safety, and fitness requirements important for the job role

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

- Mention a few of the personal hygiene practices.
- List a few safety requirements required by a Fisherman
- What are the fitness requirements for a Fisherman?

### Elaborate

With the help of the participants handbook elaborate the following:

- Practices that individual fisherman must take up while taking care of their own health and safety.
- Activities that should be avoided during fishing such as spitting, smoking, chewing tobacco, eating or drinking etc.
- Safety requirements and use of PPE such as
  - ✓ Hand gloves
  - ✓ Apron
  - ✓ Gumboots
  - ✓ Head gear
  - ✓ Fitness requirements that must be met for working as a Inland capture fisherman.

## Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to get to know about various first hand tools and equipment.

**Expected time:** 40-50 minutes

**Resources:** Pen, notebook, relevant tools

**Methodology:** Hands on, Discussion

**Instructions:**

- Conduct a practice-based session
- Provide the students with a mix of first aid equipment such as scissors, scalpel, cotton, latex gloves, gauges, artificial respirator, Dettol, etc. and non-first aid equipment such as a calculator, notepad, telephone, pen, etc. However, some of the non-first aid equipment may find indirect usage
- Ask the students to segregate the raw materials in separate boxes such as antiseptic lotions, cotton and bandages, sharp tools.
- Ask the students to put the non-first aid equipment within the box marked as miscellaneous, depending on the usability
- Declare the final marks based on the performance of each student

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts of the fellow participants.
- Ask them to answer the questions given in the participant manual.
- Ensure that all the participants answer every question.

## Exercise

### Key Solutions to PHB Exercises

#### A. State True or False

1. True
2. True
3. False
4. True
5. True

#### B. Answer the Following

1. Following are the five practices
  - Avoiding fishing in polluted waters
  - Cleaning and sanitising the craft and fishing gear before and after every fishing trip
  - Washing hands and other exposed body parts with disinfecting soap solution after handling, pre-processing, and processing the catch
  - Taking a bath daily
  - Wearing Protective Clothing while handling fish
2. Activities to avoid during fishing  
✓ Spitting ✓ Smoking ✓ Chewing tobacco ✓ Eating or drinking ✓ Biting nails ✓ Coughing and sneezing over the catch ✓ Wearing watches and jewellery
3. Three common safety requirements
  - Washing hands till the elbows after handling fish each time
  - Switching off powered gear before inspection, maintenance, and repair operations
  - Marking any electrical equipment in need of repair as “Tag-out”

## UNIT 5.2: Cleanliness and Hygiene of Deck, Pre-Processing Shed, Fish Holds, Crates and Utensils

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Demonstrate the process of cleaning and maintaining the hygiene of Deck, Pre-Processing Shed, Fish Holds, Crates and Utensils

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

- Can you mention a few cleanliness and hygiene practices?

### Elaborate

With the help of the participants handbook elaborate the following:

- About Deck, Pre-processing shed, Fish holds, crates and Utensils
- Common cleaning equipment such as bleaching powder, disposable napkins and towels, brooms, scrubbers, and mops.
- Cleaning and hygiene practices that are followed for deck, pre-processing shed, fish holds and utensils.
- Steps in cleaning such as:
  - ✓ Pre-cleaning
  - ✓ Washing
  - ✓ Rinsing
  - ✓ Sanitising
  - ✓ Performing final rinsing
  - ✓ Conducting drying

## Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to practice cleaning of tools.

**Expected time:** 30-40 minutes

**Resources:** Pen, notebook, relevant tools

**Methodology:** Hands on, Discussion

**Instructions:**

- Conduct a practice session
- Provide the students used knives for completing the degutting process in fishes
- Ask the students to clean the knives using systematic cleaning procedure
- Ask the students to complete the step wise procedure from pre-cleaning to drying
- Allot the final marks based on the performance of each student in the practice session

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts of the fellow participants.
- Ask them to answer the questions given in the participant manual.
- Ensure that all the participants answer every question.

## Exercise

### Key Solutions to PHB Exercises

#### A. Re-Arrange the sentences

1. Pre-cleaning
2. Washing
3. Rinsing
4. Sanitising
5. Final rinsing
6. Conducting drying

#### B. Identify the Images

1. Refer figure 5.2.1 of the PHB.

#### C. Answer the following

1. Following are the steps
  - Pre-cleaning
  - Washing
  - Rinsing
  - Sanitising
  - Performing final rinsing
  - Conducting drying
2. Refer section 5.2.1 of the PHB.

## UNIT 5.3: Communication Devices

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Recall the importance and functions of communication devices for the job role.
2. List the common communication devices.

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What are some common cleaning equipment used?
  - ✓ Cleaning and hygiene practices that are followed for deck, pre-processing shed, fish holds and utensils.
- Encourage participants to share their existing knowledge of Communication devices.

### Elaborate

With the help of participants handbook elaborate the following:

- Communication devices commonly used on fishing trips such as:
  - ✓ The Global Positioning System(GPS)
  - ✓ The very High Frequency (VHF) Radio
  - ✓ ISRO alerts
- Discuss on how to use a GPS device on fishing crafts
- Discuss on how to use a VHF radio on fishing crafts.

## Notes for Facilitation



- Help the participants to complete all the exercises mentioned in the participant handbook.
- Encourage participants of group discussion to ask questions so that they can clear their doubts (if any).
- Encourage participants to undergo field visits and how they can learn more through these visits.

## Exercise



### Key Solutions to PHB Exercises

#### A. Tick the correct options

1. b
2. b
3. b
4. a
5. a
6. c

#### B. Answer the Following

7. Refer section 5.3.1 of PHB.
8. Steps for using GPS device:
  - Load GPS map
  - Check signal strength
  - Keep back-up
  - Mark and Label launching site
  - Mark and label frequently visited spots
9. Process of using a VHF radio
  - Channel 16 for distress calls
  - Signal MAYDAY for distress calls
  - Performing radio checks
  - Sending out signals

## UNIT 5.4: Cleaning and Maintenance of Gears

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Outline housekeeping methods and their importance w.r.t gears
2. Use different types of sanitisers
3. Demonstrate safe methods to use materials and equipment
4. Demonstrate safe disposal methods for waste

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ Communication devices commonly used on fishing trips
  - ✓ How to use a GPS device on fishing crafts
  - ✓ Encourage participants to share their existing knowledge and experience on cleaning and maintenance of gears.

### Ask

- What is the purpose of 'housekeeping' in fishing activities?

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

- Housekeeping methods and their importance.
- Discuss on different types of sanitisers used such as heat based and chemical based.

## Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to practice cleaning and maintenance of gears.

**Expected time:** 30-50 minutes

**Resources:** Pen, notebook, relevant tools

**Methodology:** Hands on, Discussion

**Instructions:**

- Conduct a practice-based activity
- Ask the students to segregated the waste generated from the degutting process into different categories such as sharp waste, disposable gloves, entrails and fish remains
- Ask the students to identify the biowaste and put them in separate boxes
- Present the final marks based on the performance of each student

## Explain

- Safe methods in operating with materials and equipment such as
  - ✓ Safe handling of power tools
  - ✓ Safe handling of butchering knives
  - ✓ Safe handling of chemicals
  - ✓ Explain safe disposal methods of wastes.

## Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts of the fellow participants.
- Ask them to answer the questions given in the participant manual.
- Ensure that all the participants answer every question.

## Exercise

### Key Solutions to PHB Exercises

#### A. Tick the correct options

1. a
2. c
3. c
4. c
5. a

#### B. Match the column

1. F
2. A
3. C
4. D
5. B
6. E

#### C. Answer the Following Questions

1. Refer table 5.4.2 of PHB.
2. To handle chemicals safely, one should:
  - Wear appropriate personal protective equipment such as gloves, goggles, and lab coat.
  - Read and understand the chemical label and Material Safety Data Sheet (MSDS).
  - Store chemicals in appropriate locations, with proper labelling and segregation.
  - Use proper ventilation and avoid inhaling chemicals.
  - Handle chemicals carefully, following the correct procedures and techniques.
3. Refer section 5.4.4 of PHB.

## UNIT 5.5: Maintain Engines and Fishing Crafts

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. Demonstrate the process of maintaining various engines and fishing crafts

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Do

- Begin with revising the topics covered in the previous session. Ask the following questions
  - ✓ What are the safe methods to operate different tools and equipment.
  - ✓ Explain safe disposal methods of wastes.
- Encourage participants to share their existing knowledge of greenhouse maintenance.

### Ask

- What is the purpose of maintaining the engines of fishing crafts?

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

In this session, we will discuss the following points:

- Maintenance of an engine
- Maintenance of Fishing Crafts

## Notes for Facilitation



- Ask the participants if they have any questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts of the fellow participants.
- Ask them to answer the questions given in the participant manual.
- Ensure that all the participants answer every question.

## Exercise



### Key Solutions to PHB Exercises

#### DO and DON'T for each

1. Do
2. Don't
3. Do
4. Don't
5. Don't

#### Answer the following questions

1. Refer topic "Maintenance of Engines" in section 5.5.1 of PHB.
2. Refer topic "Maintaining fishing crafts" in section 5.5.1 of PHB.

## UNIT 5.6: Codes of Conduct for Responsible Fishing

### Unit Objectives

After the completion of this unit, the participant will be able to:

1. List the codes of conduct for responsible fishing
2. Comply with the codes of conduct for responsible fishing

### Resources to be used

- Participant Handbook, Pen, Notebook, Whiteboard, Markers, Laptop, Overhead Projector, Laser Pointer, equipment and Tools (as recommended for the job role)

### Ask

Ask the following questions:

- What is the purpose of having safe working protocols while capturing fish?
- What is the meaning of decomposition of fish?

Write down the participants' answers on whiteboard/flipchart. Take appropriate cues from the answers and start teaching the lesson.

### Elaborate

In this session, we will discuss the following points:

- Handle fish without bruising
- Safe working and emergency procedures
- Operate Fire Fighting equipment
- Common types of fire extinguishers
- Various fire extinguishers
- Pollution Laws and Conservation Laws
- Signals to exhibit while fishing

### Say

- Let us now participate in an activity to understand the concept well.

## Activity

**Purpose:** The purpose of this activity is to identify different types of fish and safety measures need to be taken in different case.

**Expected time:** 50-60 minutes

**Resources:** Pen, notebook, relevant tools, flash cards

**Methodology:** Hands on, Discussion

**Instructions:**

- Conduct a flashcard based activity
- Show the students different marine water fishes
- Ask them to identify the poisonous species
- Ask the students to identify the safety measures which should be taken while dealing with the poisonous species
- Declare the final marks based on the performance of individual students

## Explain

- Fisheries management laws related to fishing methods and gear.
- How and why gutting prolongs freshness?
- How to apply emergency measures during rough weather?
- Different laws such as:
  - ✓ The water Act, 1974
  - ✓ The environment protection act, 1986
  - ✓ Hazardous waste management rules, 2008
  - ✓ The wildlife protection act, 1972
- Classes of fire and common types of fire extinguishers

## Demonstrate

- Show the students a few videos on different kinds of Fire Extinguishers and their usage
- Few of the sample links are as follows:
  - <https://youtu.be/mCH4zezrZdc>
  - [https://youtu.be/EnGQxnWHR\\_w](https://youtu.be/EnGQxnWHR_w)

## Notes for Facilitation

- Ask the participants if they have questions.
- Encourage other participants to answer it and encourage peer learning in the class.
- Answer all the doubts made by the students in the class.
- Ask them to answer the questions given in the participant handbook.
- Ensure that all the participants can answer every question.

## Exercise

### Key Solutions to PHB Exercises

#### A. True and False

1. False
2. True
3. False
4. True
5. True
6. False
7. False
8. True
9. False
10. False

#### B. Tick the correct option

1. c
2. c
3. b
4. a
5. a
6. a
7. a
8. a
9. b
10. c

**C. Fill in the missing cells**

1. Refer table 5.6.4 of PHB

**D. Answer the following questions**

1. The steps for proper handling of fishes during capture include:
  - a) Use of appropriate gear and equipment for the type of fish being captured
  - b) Avoiding unnecessary stress or injury to the fish
  - c) Keeping the fish moist and cool, and avoiding exposure to sunlight or heat
  - d) Sorting the fish according to species and size, and storing them in appropriate containers or storage units.
2. Five protocols for safe working with machinery include:
  - a) Proper training and certification for using the machinery
  - b) Regular inspection and maintenance of the machinery
  - c) Use of appropriate personal protective equipment (PPE)
  - d) Following established safety procedures and guidelines
  - e) Proper storage and handling of hazardous materials and waste generated by the machinery.
3. To use foam as a fire extinguisher, aim the nozzle at the base of the fire and press the handle to release the foam. Sweep the nozzle from side to side until the fire is completely extinguished.
4. The process of correctly using fire extinguishers includes:
  - a) Pulling the pin to break the seal and unlock the extinguisher
  - b) Aiming the nozzle at the base of the fire
  - c) Squeezing the handle to release the extinguishing agent
  - d) Sweeping the nozzle from side to side until the fire is completely extinguished
5. Emergency procedures during rough weather include:
  - a) Securing all loose gear and equipment on the fishing craft
  - b) Ensuring all crew members are wearing appropriate personal protective equipment (PPE)
  - c) Keeping a lookout for other vessels or hazards in the area







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& ENTREPRENEURSHIP



Transforming the skill landscape

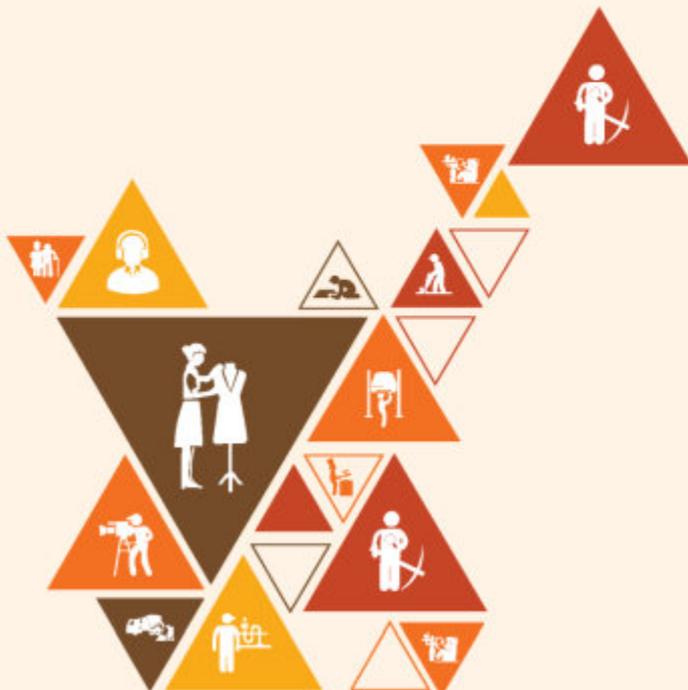


## 6. Employability Skills (30 Hours)

To access content on Employability Skills, click here:

<https://eskillindia.org/NewEmployability>

Scan the QR code below to access the ebook



DGT/VSQ/N0101





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Transforming the skill landscape

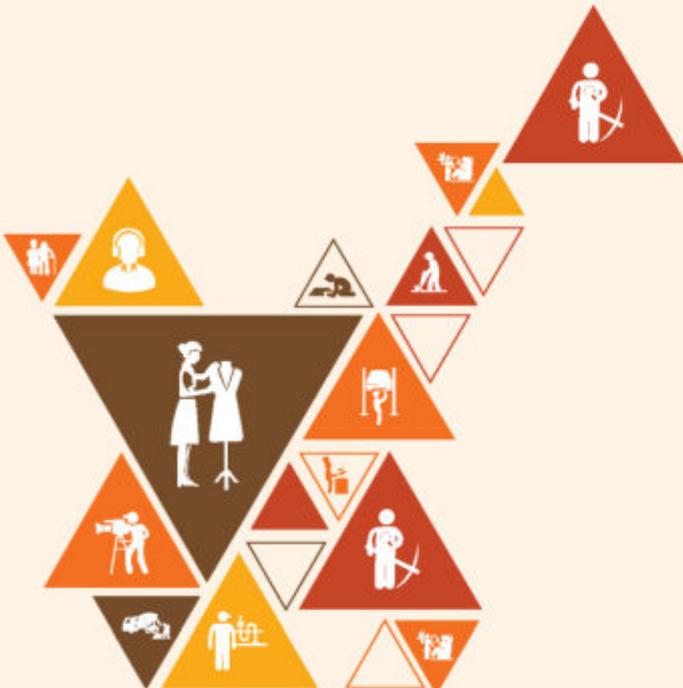


## 7. Annexures

Annexure I - Training Delivery Plan

Annexure II- Assessment Criteria

Annexure III- QR Codes –Video Links



## Annexure I

### Training Delivery Plan

Training Delivery Plan			
<b>Program Name:</b>	Inland Capture Fisherman cum Primary Processor		
<b>Qualification Pack Name &amp; Ref. ID</b>	AGR/Q5003		
<b>Version No.</b>	3.0	<b>Version Update Date</b>	17/11/22
<b>Pre-requisites to Training (if any)</b>	Ability to read and write with 5 Years of relevant experience OR 5th Class with 4 Years of relevant experience MinimumAge:18 Years		
<b>Training Outcomes</b>	<p><b>By the end of this program, the participants will be able to:</b></p> <ul style="list-style-type: none"> <li>Describe the process of preparing for carrying out inland capture fisheries operation.</li> <li>Demonstrate the process of carrying out capture operation, primary processing and marketing of fish.</li> <li>Explain the basic entrepreneurial activities for small enterprise.</li> <li>Describe the process of undertaking employability and entrepreneurial practices.</li> <li>Explain various safety and hygiene practices in capture fisheries operations.</li> <li>Demonstrate the process of preparing, canning, labelling and marketing fish-based products</li> </ul>		

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
1	Introduction to the role of an Inland Capture Fisherman Cum Primary Processor T: 5:00 (HH:MM)	1. Size and Scope of agriculture industry and its sub-sectors	<ul style="list-style-type: none"> <li>Introduce fellow participants</li> <li>Recognize importance of the programme</li> </ul>	Bridge Module	Lecture, Class activity	Chairs, round table in U shape sitting shape	T: 1:30
		2. The role of inland capture fisherman cum primary processor	<ul style="list-style-type: none"> <li>Explain role of Inland capture fisherman</li> <li>Explain the responsibilities of Inland capture fisherman</li> <li>Describe the job potential for Inland capture fisherman</li> </ul>		Lecture, group presentations and discussion	Participant handbook (PHB) Projector, system facilitating power point presentations, microphone, camera, round tables arranged in U shape for healthy discussion, white board, marker pen of different colors	T: 3:30

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
2	Prepare for carrying out Inland capture fisheries operation T:15:00 P:40:00 (HH:MM)	1. Appropriate fishing methods in Inland waters	<ul style="list-style-type: none"> <li>• Explain how to choose appropriate fishing methods</li> <li>• Describe the type of gear depending on target species</li> </ul>	AGR/N5006 PC1-PC3, PC6, PC12, PC13, KU1-KU3, KU5-KU8, KU11, KU112, KU14, GS1-GS8	Lecture, stage presentation, role plays, group presentations and discussion	PHB, Projector, system facilitating power point presentations, microphone, camera, round tables arranged in U shape	T: 3:00 P: 3:00
		2. Appropriate fishing gear	<ul style="list-style-type: none"> <li>• Explain the required fishing permits and license as per regulations</li> <li>• Explain operation cost and other overheads</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, White board, duster, flip chart board/paper etc. PPT with relevant images	T: 2:00 P: 4:00
		3. Designing and rigging of gears, traps and pots	<ul style="list-style-type: none"> <li>• Describe the factors influencing the designing and rigging of gears</li> <li>• Demonstrate the knowledge of designing and rigging gears, traps and pots.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 1:00 P: 5:00
		4. Fishing crafts used in inland waters	<ul style="list-style-type: none"> <li>• Explain how to identify mechanised and non-mechanised fishing vessels used in Inland waters.</li> <li>• Demonstrate the process of operating machines.</li> </ul>		Lecture, stage presentation, role plays, demonstration and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 1:00 P: 5:00
		5. Necessary infrastructure for landing fish	<ul style="list-style-type: none"> <li>• Describe the infrastructure required for landing fish safely at landing centres.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 4:00
		6. The economics of fishing operation	<ul style="list-style-type: none"> <li>• Explain how the fishing activity can be profitable</li> <li>• Explain the importance of eliminating the non-target species from harvesting activity.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 4:00

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
		7. Different fishing methods	<ul style="list-style-type: none"> <li>Explain about using different types of fishing methods</li> <li>Importance of weather forecasting in fishing operations</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 1:00 P: 4:00
		8. Selection of fishing grounds and securing fishing permits	<ul style="list-style-type: none"> <li>Describe the process of selecting the fishing grounds according to the shoaling behaviour of the target fish species.</li> <li>Describe process of securing required fishing permits.</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 1:00 P: 5:00
		9. Recap	<ul style="list-style-type: none"> <li>Recapitulate complete module learning</li> </ul>		Lecture, activities, role plays, group presentations and discussion, field visits, demonstrations etc.	PHB, Projector, display screen, white board, marker, duster, paper, pen PPT and relevant audio-visual aids	T: 2:00 P: 6:00
3	Process of carrying out capture operation, primary processing and marketing of fish. T: 20:00 P: 70:00 (HH:MM)	1. Motorised and Non-Motorised fishing crafts	<ul style="list-style-type: none"> <li>Demonstrate the operation of motorised and non-motorised fishing crafts</li> </ul>	AGR/N5007 PC4-PC7, PC9, PC10, PC12-PC14, PC22, PC24, PC25, PC26, KU1-KU7, KU10, KU12- KU14, KU17- KU19, GS1- GS8	Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 3:00 P: 5:00
		2. Ways of capturing fishes	<ul style="list-style-type: none"> <li>Explain how to capture fish following different active or passive fishing methods</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 2:00 P: 5:00
		3. Ecosystem based approach to optimum fishing practices	<ul style="list-style-type: none"> <li>Explain the importance of ensuring no negative impact on natural habitats and ecological systems during fishing operations.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 5:00

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
		4. Hygienic handling and preservation of fish.	<ul style="list-style-type: none"> <li>Practice hygienic handling and preservation of fish</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	P: 7:00
		5. Precautionary measures	<ul style="list-style-type: none"> <li>Explain the appropriate precautionary measures to avoid collision with other fishing crafts.</li> <li>Describe the applicable precautionary measures to be taken while fishing.</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 2:00 P: 5:00
		6. Sorting fish	<ul style="list-style-type: none"> <li>Explain the meaning and importance of sorting</li> <li>Demonstrate the process of sorting catch as per specific criteria.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 1:00 P: 7:00
		7. Storage of fish	<ul style="list-style-type: none"> <li>Explain storing techniques for captured fish</li> <li>Describe about the common materials for undertaking storage</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 5:00
		8. Fish marketing	<ul style="list-style-type: none"> <li>Describe the process of marketing the fish</li> <li>Elaborate about different types of fish markets.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 5:00
		9. Resource optimization	<ul style="list-style-type: none"> <li>Explain about resource optimization and its benefits</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 2:00 P: 6:00

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
		10. Gender & PwD at workplace	<ul style="list-style-type: none"> <li>Explain gender-neutral behaviour at work</li> <li>Describe the process of empathising with the persons with disabilities at work.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 6:00
		11. Practical session	<ul style="list-style-type: none"> <li>Demonstration and practical on motorised non-motorised fishing crafts, sorting of fish, storage of fish and resource optimization.</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	P: 8:00
		12. Recap	<ul style="list-style-type: none"> <li>Recapitulate complete module learning</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 6:00
4	Process of preparing, canning, labelling and marketing fish based products. T: 30:00 P: 30:00 (HH:MM)	1. Basic fish preservation methods-I	<ul style="list-style-type: none"> <li>Explain how to use proper smoking methods.</li> <li>Explain basic functions associated with canning</li> </ul>	AGR/N5125 PC2, PC5-PC7, PC12, PC16, PC19, PC20-PC24, KU2-KU3, KU6-KU10, KU13, KU14, GS1-GS9.	Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 6:00 P: 1:00
		2. Basic fish preservation methods-II	<ul style="list-style-type: none"> <li>Practice proper freezing methods</li> <li>Demonstrate proper drying techniques</li> <li>Practice salting/curing of the raw material</li> </ul>		Practical, demonstration, hands on	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	P: 7:00
		3. Different types of value-added fish products	<ul style="list-style-type: none"> <li>Describe value added products and their importance</li> <li>Identify the different types of value added fish products.</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 4:00 P: 3:00

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
		4. Hygiene and safety standards	<ul style="list-style-type: none"> <li>Explain the applicable hygiene and safety standards</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 4:00 P: 4:00
		5. Recycling and Disposing	<ul style="list-style-type: none"> <li>Demonstrate the process of recycling and disposing and its process.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 2:00 P: 6:00
		6. Processing and storage-I	<ul style="list-style-type: none"> <li>Explain the importance of using tins cans coated with a sulphur-resistant lacquer to can the fish.</li> <li>Explain use of appropriate liquid medium/additive.</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 5:00 P: 3:00
		7. Processing and storage-II	<ul style="list-style-type: none"> <li>Elaborate the recommended temperature for heat processing.</li> <li>Explain the importance of cooling the heat-processed cans.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 5:00 P: 3:00
		8. Recap	<ul style="list-style-type: none"> <li>Recapitulate complete module learning</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 4:00 P: 3:00

S.No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools / Aids	Duration
5	Safety and hygiene practices in capturing fisheries T: 20:00 P: 10:00 (HH:MM)	1. Personal hygiene and safety	<ul style="list-style-type: none"> <li>Describe personal hygiene for the job role.</li> <li>Elaborate the personal hygiene, safety and fitness requirements important for the job role.</li> </ul>	AGR/N5103 PC1-PC3, PC5, PC8, KU1-KU5, KU7, KU9, KU10, GS1-GS9	Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 5:00 P: 1:00
		2. Cleanliness and hygiene of deck, pre-processing shed, fish holds, crates and utensils	<ul style="list-style-type: none"> <li>Demonstrate the process of cleaning and maintaining the hygiene of deck, pre-processing shed, fish holds, crates and utensils.</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 3:00 P: 3:00
		3. Communication devices	<ul style="list-style-type: none"> <li>Describe the importance and functions of communication device for job role</li> <li>Elaborate the common communication devices.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 5:00 P: 1:00
		4. Cleaning and maintenance of gears	<ul style="list-style-type: none"> <li>Describe housekeeping methods and their importance w.r.t gears</li> <li>Demonstrate safe disposal methods of waste.</li> </ul>		Lecture, stage presentation, discussion	PHB, available objects such as a white board, duster, flip chart, paper, pen, marker etc. PPT showing relevant images	T: 3:00 P: 3:00
		5. Maintain engines and fishing crafts and codes of conduct	<ul style="list-style-type: none"> <li>Demonstrate the process of maintaining various engines and fishing crafts</li> <li>Describe the codes of conduct for responsible fishing</li> </ul>		Lecture, stage presentation, role plays, group presentations and discussion	PHB, Chart papers, pencil, eraser, sharpener, scale, Projector, system facilitating power point presentations	T: 4:00 P: 2:00

S. No.	Module Name	Session Name	Session Objectives	NOS References	Methodology	Training Tools/Aids	Durations
6.	Employability Skills (30 hrs)	Introduction to Employability Skills	<ul style="list-style-type: none"> <li>Describe the importance of Employability Skills</li> <li>Prepare a note on different industries, trends, required skills</li> </ul>	DGT/VSQ/N0101	Team Activity: Interactive discussion	White-board and Markers Chart paper and sketch pens LCD Projector, Laptop for Presentation, audio visual aids, note pad, paper, pen, computers etc.	1 hr
		Constitutional Values: Citizenship	<ul style="list-style-type: none"> <li>Detail the principles of the constitution of India</li> <li>Identify the various environmentally sustainable practices</li> </ul>		Class room lecture, discussion, Demonstration, practical		1 hr
		Becoming a Professional in the 21st Century	<ul style="list-style-type: none"> <li>Discuss relevant 21st century skills required for employment</li> <li>Practice critical thinking and decision making skills</li> </ul>		Class room lecture, discussion, Demonstration, practical		1 hr
		Basic English Skills	<ul style="list-style-type: none"> <li>Read English text with appropriate articulation</li> <li>Practice basic English words, sentences and punctuation</li> </ul>		Team Activity: Role play, video session		2hrs

S. No.	Module Name	Session Name	Session Objectives	NOS References	Methodology	Training Tools/Aids	Durations
		Financial and Legal Literacy	<ul style="list-style-type: none"> <li>Discuss various financial institutions, products, and services</li> <li>Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax</li> </ul>	DGT/VSQ/N0101	Class room lecture, Group discussion, demonstration, activity		4 hrs
		Essential Digital Skills	<ul style="list-style-type: none"> <li>Detail the use and features of various MS Office tools, like MS Word, MS Excel, MS PowerPoint, etc.</li> <li>Demonstrate how to operate digital devices</li> <li>Create an e-mail id and follow e-mail etiquette to exchange e-mails</li> </ul> <p>Describe the role of digital technology in day-to-day life and the workplace</p>	DGT/VSQ/N0101			3 hrs

S. No.	Module Name	Session Name	Session Objectives	NOS References	Methodology	Training Tools/Aids	Durations
		Financial and Legal Literacy	<ul style="list-style-type: none"> <li>Discuss various financial institutions, products, and services</li> <li>Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax</li> </ul>	DGT/VSQ/N0101	Class room lecture, Group discussion, demonstration, activity		4 hrs
		Essential Digital Skills	<ul style="list-style-type: none"> <li>Detail the use and features of various MS Office tools, like MS Word, MS Excel, MS PowerPoint, etc.</li> <li>Demonstrate how to operate digital devices</li> <li>Create an e-mail id and follow e-mail etiquette to exchange e-mails</li> </ul> <p>Describe the role of digital technology in day-to-day life and the workplace</p>	DGT/VSQ/N0101			3 hrs

S. No.	Module Name	Session Name	Session Objectives	NOS References	Methodology	Training Tools/Aids	Durations
		Entrepreneurship	<ul style="list-style-type: none"> <li>Describe the types of entrepreneurship and enterprises</li> <li>Describe the 4Ps of Marketing- Product, Price, Place and Promotion and apply them as per requirement</li> </ul>		Class room lecture, discussion, Demonstration, practical		7 hrs
		Customer Service	<ul style="list-style-type: none"> <li>Identify types of customers and how to deal with them</li> <li>Identify methods to get customer feedback and how to implement them</li> <li>Explain various tools used to collect customer feedback</li> <li>Discuss the significance of maintaining hygiene and dressing appropriately</li> </ul>	DGT/VSQ/ N0101	Class room lecture, discussion, Demonstration, practical, Team Activity: Role play, video session		4 hrs
		Apprenticeships and Jobs	<ul style="list-style-type: none"> <li>Practice personal grooming strategies</li> <li>Illustrate the use of online platforms for job hunting</li> <li>Detail the concept of Apprenticeship</li> <li>Demonstrate how to enroll for Apprenticeship programs.</li> <li>Draft a professional Curriculum Vitae (CV)</li> <li>Role play a mock interview</li> </ul>	DGT/VSQ/ N0101			2 hrs

## Annexure II

### Assessment Criteria

#### CRITERIA FOR ASSESSMENT OF TRAINEES

(For Updated 'Assessment Criteria', please refer to Qualification Pack of this Job role available at <https://www.nqr.gov.in/>)

Assessment Criteria for ASCI- Inland Capture Fisherman cum Primary Processor	
Job Role	Inland Capture Fisherman cum Primary Processor
Qualification Pack	AGR/Q5003
Sector Skill Council	Agriculture
S.No.	Guidelines for Assessment
1.	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2.	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3.	Assessment will be conducted for all compulsory NOS, as well as the selected elective NOS/set of NOS.
4.	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5.	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria.
6.	To pass the Qualification Pack, every trainee should score a minimum of 50% of aggregate marks to successfully clear the assessment.
7.	In case of <i>unsuccessful completion</i> , the trainee may seek reassessment on the Qualification Pack.

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N5006.Prepare for carrying out inland capture fisheries operation	30	40	0	30	100	30
AGR/N5007.Carry out capture operation, primary processing and marketing of fish	30	40	0	30	100	40
AGR/N5125.Prepare, can, label and market fish-based products	30	40	-	30	100	15
AGR/N5103.Follow the safety and hygiene practices in capture fisheries operations	30	40	-	30	100	10
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	0	0	50	5
<b>Total</b>	<b>140</b>	<b>190</b>	<b>-</b>	<b>120</b>	<b>450</b>	<b>100</b>

### Annexure-III

#### QR Codes –Video Links

Chapter No.	Unit No.	Topic	QR Code Links	QR code (s)
<b>Chapter -1</b> Introduction to the Role of an Inland Capture Fisherman Cum Primary Processor	Unit 1.2 - The Role of Inland Capture Fisherman cum Primary Processor	Inland Capture Fisheries resources of India	<a href="https://www.youtube.com/watch?v=QybiVeeQPms">https://www.youtube.com/watch?v=QybiVeeQPms</a>	 Inland Capture Fisheries resources of India
<b>Chapter -2</b> Process of Preparation for Carrying Out Inland Capture Fisheries Operation	Unit 2.1 - Appropriate Fishing Methods in Inland Waters	Fishing Methods	<a href="https://www.youtube.com/watch?v=SGphqQLWbQc">https://www.youtube.com/watch?v=SGphqQLWbQc</a>	 Fishing Methods
	Unit 2.2 - Appropriate Fishing Gear Unit 2.4 - Fishing Crafts Used in Inland Waters	Fishing Craft and Fishing Gears	<a href="https://www.youtube.com/watch?v=6BqkJ87LNrY">https://www.youtube.com/watch?v=6BqkJ87LNrY</a>	 Fishing Craft and Fishing Gears
	Unit 2.3 - Designing and Rigging of Gears, Traps, and Pots	Pots and Traps for Energy Efficient and Responsible Fishing	<a href="https://www.youtube.com/watch?v=0jJJkRVQso">https://www.youtube.com/watch?v=0jJJkRVQso</a>	 Pots and Traps for Energy Efficient and Responsible Fishing
	Unit 2.7 - Different Fishing Methods	Fish shoaling	<a href="https://www.youtube.com/watch?v=15B8qN9dre4">https://www.youtube.com/watch?v=15B8qN9dre4</a>	 Fish shoaling
<b>Chapter -3</b> Process of Carrying Out Capture Operation, Primary Processing and Marketing of Fish	Unit 3.2 - Ways of Capturing Fishes	Ways of capturing	<a href="https://www.youtube.com/watch?v=WJBz8j2WER8">https://www.youtube.com/watch?v=WJBz8j2WER8</a>	 Ways of capturing

Chapter No.	Unit No.	Topic	QR Code Links	QR code (s)
	Unit 3.6 - Sorting Fish	Sorting of fish	<a href="https://www.youtube.com/shorts/gLLAQEnaAPY">https://www.youtube.com/shorts/gLLAQEnaAPY</a>	 Sorting of fish
	Unit 3.8 - Fish Marketing	Fish Marketing	<a href="https://www.youtube.com/watch?v=8zQEhCCaXow">https://www.youtube.com/watch?v=8zQEhCCaXow</a>	 Fish Marketing
<b>Chapter -4</b> Process of Preparing, Canning, Labelling and Marketing Fish- Based Products	Unit 4.1 - Basic Fish Preservation Methods	Basic Fish Preservation Methods	<a href="https://www.youtube.com/watch?v=tOrli85OW8Y&amp;t=4.4s">https://www.youtube.com/watch?v=tOrli85OW8Y&amp;t=4.4s</a>	 Basic Fish Preservation Methods
	Unit 4.3 - Hygiene and Safety standards	Hygiene and Safety standards	<a href="https://www.youtube.com/watch?v=0HNYIQam5FY">https://www.youtube.com/watch?v=0HNYIQam5FY</a>	 Hygiene and Safety standards





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