



Cage Culture Fish Farmer

Options: Basic Seamanship and Navigation

QP Code: AGR/Q4916

Version: 1.0

NSQF Level: 4

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

Qualification Pack

Contents

AGR/Q4916: Cage Culture Fish Farmer	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Option: Basic Seamanship and Navigation</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
AGR/N4953: Prepare and install the cage for fish farming	5
AGR/N4954: Select and maintain fish species in cage culture	10
AGR/N4949: Maintain the cage during fish culture in cages	16
AGR/N4948: Harvest and market fish	20
AGR/N4918: Ensures safety, hygiene and sanitation practices for culture operations.	24
AGR/N5015: Perform basic seamanship and navigation activities	30
Assessment Guidelines and Weightage	37
<i>Assessment Guidelines</i>	37
<i>Assessment Weightage</i>	37
Acronyms	39
Glossary	40

Qualification Pack

AGR/Q4916: Cage Culture Fish Farmer

Brief Job Description

A Cage Culture Fish Farmer rears different varieties of fish in marine/brackish/freshwater cages. The person is responsible for preparing, installing and maintaining the cages for fish farming. The individual is also responsible for harvesting and marketing of the reared fish

Personal Attributes

A Cage Culture Fish Farmer rears different varieties of fish in marine/brackish/freshwater cages. The person is responsible for preparing, installing and maintaining the cages for fish farming. The individual is also responsible for harvesting and marketing of the reared fish.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [AGR/N4953: Prepare and install the cage for fish farming](#)
2. [AGR/N4954: Select and maintain fish species in cage culture](#)
3. [AGR/N4949: Maintain the cage during fish culture in cages](#)
4. [AGR/N4948: Harvest and market fish](#)
5. [AGR/N4918: Ensures safety, hygiene and sanitation practices for culture operations.](#)

Options(Not mandatory):

Option : Basic Seamanship and Navigation

Specializes in basic seamanship and navigation which is required for marine cage culture.

1. [AGR/N5015: Perform basic seamanship and navigation activities](#)

Qualification Pack (QP) Parameters

Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
Country	India
NSQF Level	4

Qualification Pack

Aligned to NCO/ISCO/ISIC Code	NCO-2015/6221
Minimum Educational Qualification & Experience	Ability to read and write with NA of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	16/12/2019
Next Review Date	16/12/2023
Deactivation Date	16/12/2023
NSQC Approval Date	22/09/2020
Version	1.0
Reference code on NQR	2020/AGR/ASCI/03878
NQR Version	1

Qualification Pack

AGR/N4953: Prepare and install the cage for fish farming

Description

This OS unit covers the activities to be performed for the preparation and installation of cages for fish farming.

Scope

The scope covers the following :

- • Select the site, cage type and cage material
- • Procure material for cage construction
- • Construct the cage
- • Install the cage

Elements and Performance Criteria

Select the site, cage type and cage material

To be competent, the user/individual on the job must be able to:

- PC1.** select a water body and site for cage culture ensuring that it is free from limiting factors such as poor water quality, heavy weed infestation, low depth, etc.
- PC2.** select the appropriate cage type and shape according to the type and size of water body and fish species to be cultured
- PC3.** select material for cage construction that is durable, non-toxic, rust-proof and as per the selected water body and budget

Procure material for cage construction

To be competent, the user/individual on the job must be able to:

- PC4.** identify vendors of cage material in the vicinity of the cage culture site
- PC5.** procure the material required for the construction of cage from an authorised vendor as per the budget

Construct the cage

To be competent, the user/individual on the job must be able to:

- PC6.** co-ordinate with the cage fabricator to construct the cage frame in the desired size and shape
- PC7.** check that all the materials are joined firmly
- PC8.** apply epoxy primer and paint on galvanized iron (gi)/mild steel (ms) cages to prevent rusting and increase the durability

Install the cage

To be competent, the user/individual on the job must be able to:

- PC9.** drag the cage frame into the water body
- PC10.** fasten the floats firmly to the cage frame
- PC11.** install the frame at the site selected for performing cage culture
- PC12.** anchor the frame firmly at the site

Qualification Pack

PC13. tie the net cages to the cage frame and suspend into water

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** guidelines and policies for cage culture as per the site specifications
- KU2.** appropriate legislations governing cage culture in india
- KU3.** appropriate conditions for cage culture fish farming
- KU4.** limiting factors that affect cage culture
- KU5.** various criteria for selection of site for cage culture
- KU6.** tools and equipment required for performing various activities
- KU7.** various types of material used for framing cages
- KU8.** HDPE cage specifications
- KU9.** method of fabricating and installing cages
- KU10.** mirror welding techniques
- KU11.** antifouling painting, foam filling and FRP sealing of welding joints for sea worthiness
- KU12.** types of cage frames used in cage culture
- KU13.** single mooring and grid mooring techniques
- KU14.** cage maintenance activities required to be performed during cage culture

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write letters in the local language to communicate with the local authority and vendors
- GS2.** read local legislations and norms regarding cage culture
- GS3.** communicate with co-workers during cage culture
- GS4.** communicate with the relevant authority or person regarding bad weather, malfunctioning of the equipment, or any other problems
- GS5.** take decision regarding the species to be reared
- GS6.** take appropriate decision in case of emergency
- GS7.** plan and organise resources required for cage culture
- GS8.** identify the suitable location for cage culture
- GS9.** resolve problems associated with cage and cultured species
- GS10.** assess the site conditions for its suitability for cage culture
- GS11.** identify solutions to the problems that can arise during cage culture

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Select the site, cage type and cage material</i>	9	15	-	-
PC1. select a water body and site for cage culture ensuring that it is free from limiting factors such as poor water quality, heavy weed infestation, low depth, etc.	3	5	-	-
PC2. select the appropriate cage type and shape according to the type and size of water body and fish species to be cultured	3	5	-	-
PC3. select material for cage construction that is durable, non-toxic, rust-proof and as per the selected water body and budget	3	5	-	-
<i>Procure material for cage construction</i>	6	10	-	-
PC4. identify vendors of cage material in the vicinity of the cage culture site	3	5	-	-
PC5. procure the material required for the construction of cage from an authorised vendor as per the budget	3	5	-	-
<i>Construct the cage</i>	8	15	-	-
PC6. co-ordinate with the cage fabricator to construct the cage frame in the desired size and shape	3	5	-	-
PC7. check that all the materials are joined firmly	2	5	-	-
PC8. apply epoxy primer and paint on galvanized iron (gi)/mild steel (ms) cages to prevent rusting and increase the durability	3	5	-	-
<i>Install the cage</i>	12	25	-	-
PC9. drag the cage frame into the water body	2	5	-	-
PC10. fasten the floats firmly to the cage frame	2	5	-	-
PC11. install the frame at the site selected for performing cage culture	3	5	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. anchor the frame firmly at the site	2	5	-	-
PC13. tie the net cages to the cage frame and suspend into water	3	5	-	-
NOS Total	35	65	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N4953
NOS Name	Prepare and install the cage for fish farming
Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Qualification Pack

AGR/N4954: Select and maintain fish species in cage culture

Description

This OS unit covers the activities to be performed while rearing fish in cages.

Scope

The scope covers the following :

- • Select and stock the fish species
- • Feed the fish
- • Manage the health of fish

Elements and Performance Criteria

Select and stock the fish species

To be competent, the user/individual on the job must be able to:

- PC1.** select fish species which are suitable for the specific water body, having high growth rate with high stock density and resistance to diseases and is commercially important
- PC2.** procure healthy seeds of the selected fish species from an authorised agency
- PC3.** stock the fingerlings/advanced fingerlings maintaining optimum stock density for their healthy growth

Feed the fish

To be competent, the user/individual on the job must be able to:

- PC4.** select the appropriate fish feed ingredients based on the species and climatic conditions
- PC5.** prepare the feed maintaining the required levels of nutrition
- PC6.** feed the fish in a scheduled manner as per their stages of growth
- PC7.** identify the need of using supplements in fish feed and add it to the feed
- PC8.** store the feed in a safe and hygienic manner

Manage the health of fish

To be competent, the user/individual on the job must be able to:

- PC9.** sample the fish regularly to measure their length, weight and ensure healthy growth
- PC10.** apply the necessary solutions to support the growth of fish as per the observations
- PC11.** identify the symptoms of stress and disease among the fish, if any e.g. erratic swimming, reduced feeding, gulping for air, etc.
- PC12.** carry out treatment of the fish (prophylactic/therapeutic) as per the disease identified
- PC13.** rear the fish for phase-wise harvesting, until it attains the marketable size and weight for getting good market value

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

Qualification Pack

- KU1.** guidelines and policies for cage culture as per the geography
- KU2.** appropriate legislations governing cage culture in india
- KU3.** criteria for the selection of species for cage culture in marine, brackish and freshwater
- KU4.** various activities to be performed for maintenance of fish during culture
- KU5.** feed and nutritional requirements of the selected species
- KU6.** the balanced feed mix and feeding rate
- KU7.** signs of stress and disease in the fish and how to deal with them
- KU8.** fish behavioural changes
- KU9.** immediate actions to be taken after identification of any disease
- KU10.** methods of applying treatment to cure fish diseases in cage culture
- KU11.** water quality parameters
- KU12.** net cage exchange details
- KU13.** complete health management of fish in cage culture
- KU14.** how to measure the growth of fish and actions to take, if the required growth is not achieved
- KU15.** types of feed, pelet size and appropriate quantity of formulated feed for feeding fish
- KU16.** Feed Conversion Ratio (FCR)
- KU17.** methods of preparing and storing the feed
- KU18.** precautions to be taken while feeding the fish
- KU19.** correct methods of stocking fish
- KU20.** equipment and materials required for stocking fish
- KU21.** the concept of stocking density
- KU22.** fish monitoring, control and surveillance (MCS)
- KU23.** symptoms, epidemiology and prophylactic and therapeutic measures for various diseases related to cage farming

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** work related notes
- GS2.** draft letters in the local language to communicate with the local authorities
- GS3.** read reports on quality parameters
- GS4.** read reports on cage culture written in the local language
- GS5.** communicate with the local sellers of fish seed and feed for price negotiation
- GS6.** interact with co-workers and sellers politely
- GS7.** take decision with respect to the species to be cultured considering various factors
- GS8.** select the sellers who sell quality fish seed and feed
- GS9.** plan the feeding schedule for the fish
- GS10.** raise fish in hygienic conditions to ensure quality of produce for the consumer
- GS11.** think through the problem, evaluate the possible solutions and choose the optimum / best solutions

Qualification Pack

- GS12.** identify economically viable and operationally feasible solutions for the problems encountered during cage culture
- GS13.** gather and study information from various sources regarding species to be cultured and their nutritional requirements
- GS14.** identify ways of minimising the cost of rearing fish while maintaining quality

Qualification Pack
Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Select and stock the fish species</i>	6	15	-	-
PC1. select fish species which are suitable for the specific water body, having high growth rate with high stock density and resistance to diseases and is commercially important	2	5	-	-
PC2. procure healthy seeds of the selected fish species from an authorised agency	2	5	-	-
PC3. stock the fingerlings/advanced fingerlings maintaining optimum stock density for their healthy growth	2	5	-	-
<i>Feed the fish</i>	10	25	-	-
PC4. select the appropriate fish feed ingredients based on the species and climatic conditions	2	5	-	-
PC5. prepare the feed maintaining the required levels of nutrition	2	5	-	-
PC6. feed the fish in a scheduled manner as per their stages of growth	2	5	-	-
PC7. identify the need of using supplements in fish feed and add it to the feed	2	5	-	-
PC8. store the feed in a safe and hygienic manner	2	5	-	-
<i>Manage the health of fish</i>	14	30	-	-
PC9. sample the fish regularly to measure their length, weight and ensure healthy growth	2	5	-	-
PC10. apply the necessary solutions to support the growth of fish as per the observations	3	7	-	-
PC11. identify the symptoms of stress and disease among the fish, if any e.g. erratic swimming, reduced feeding, gulping for air, etc.	3	7	-	-
PC12. carry out treatment of the fish (prophylactic/therapeutic) as per the disease identified	2	5	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. rear the fish for phase-wise harvesting, until it attains the marketable size and weight for getting good market value	4	6	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N4954
NOS Name	Select and maintain fish species in cage culture
Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Qualification Pack

AGR/N4949: Maintain the cage during fish culture in cages

Description

This unit is about various cage maintenance activities carried out during fish culture.

Scope

The scope covers the following :

- • Maintain the cage

Elements and Performance Criteria

Maintain the cage

To be competent, the user/individual on the job must be able to:

- PC1.** inspect the complete cage frame, mooring and net cages regularly to identify any maintenance and repairing needs
- PC2.** perform scheduled preventive maintenance activities for the cage
- PC3.** carry out repair and replacement for the identified damages and worn out parts respectively
- PC4.** remove fouling sedentary and semi-sedentary organisms such as barnacles, tunicates, algae, sponge etc. from the cage regularly
- PC5.** remove any obstructions in and around the cage to allow smooth flow of water currents through the cage for flushing out faecal matters of the stocked fish

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** guidelines and policies for cage culture as per the site
- KU2.** appropriate legislations governing cage culture in india
- KU3.** how to identify the conditions harmful for cage culture
- KU4.** safe methods of removing harmful and unwanted organisms from the cage
- KU5.** preventive maintenance requirements for cage used in culture and its importance
- KU6.** how to replace damaged or worn out parts
- KU7.** how to ensure well-being and security of the fish while performing cage maintenance activities

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write letters in the local language
- GS2.** read local legislations and norms regarding cage culture
- GS3.** communicate with co-workers during the culture

Qualification Pack

- GS4.** communicate with the relevant authority or person regarding bad weather, malfunctioning of the equipment etc.
- GS5.** decide the frequency of cage maintenance activities
- GS6.** choose the appropriate action to be taken in case of disease outbreak in the cage
- GS7.** arrange the resources required for cage repair and replacement activities
- GS8.** resolve problems associated with malfunctioning of any equipment
- GS9.** check the condition of the cage to identify any repair and maintenance requirements
- GS10.** produce optimum quantity of fish to maximise the profits

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain the cage</i>	35	65	-	-
PC1. inspect the complete cage frame, mooring and net cages regularly to identify any maintenance and repairing needs	7	13	-	-
PC2. perform scheduled preventive maintenance activities for the cage	7	13	-	-
PC3. carry out repair and replacement for the identified damages and worn out parts respectively	7	13	-	-
PC4. remove fouling sedentary and semi-sedentary organisms such as barnacles, tunicates, algae, sponge etc. from the cage regularly	7	13	-	-
PC5. remove any obstructions in and around the cage to allow smooth flow of water currents through the cage for flushing out faecal matters of the stocked fish	7	13	-	-
NOS Total	35	65	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N4949
NOS Name	Maintain the cage during fish culture in cages
Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Qualification Pack

AGR/N4948: Harvest and market fish

Description

This unit is about harvesting and marketing of fish and includes sorting and grading as well.

Scope

The scope covers the following :

- Harvest the fish
- Market the fish

Elements and Performance Criteria

Harvest the fish

To be competent, the user/individual on the job must be able to:

- PC1.** select the appropriate time of harvesting based on the growth of fish
- PC2.** prepare the tools for harvesting
- PC3.** harvest fish in a safe manner without causing them stress and physical damage
- PC4.** discard any dead and damaged fish in an environment-friendly manner
- PC5.** sort and grade the harvested fish
- PC6.** store the harvested fish in suitable conditions, if not sold fresh
- PC7.** maintain the record of harvested fish

Market the fish

To be competent, the user/individual on the job must be able to:

- PC8.** check the demand and market rate for the harvested fish
- PC9.** identify the potential market/aggregators/buyers of fish
- PC10.** negotiate the price with the buyer
- PC11.** use electronic payment methods for accepting payments such as BHIM UPI, payment apps, e-wallet etc.
- PC12.** pack and transport the harvested fish in good condition
- PC13.** maintain the record of sale
- PC14.** calculate the benefit-cost (B:C) ratio

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** guidelines and policies for aquaculture as per the geography
- KU2.** how to identify the appropriate time for harvesting
- KU3.** various factors that impact the growth of fish
- KU4.** various methods of harvesting fish

Qualification Pack

- KU5.** how to harvest fish without causing any damage to it and the environment
- KU6.** how to harvest fish without causing any damage to it and the environment
- KU7.** how to discard dead and damaged fish in compliance with the local legislation
- KU8.** various criteria and methods of sorting and grading fish
- KU9.** how to identify the market/aggregators/buyers of fish
- KU10.** how to identify the demand of various types of fish
- KU11.** how to identify the market/aggregators/buyers of fish
- KU12.** how to assess the quality of harvested fish on various parameters
- KU13.** various methods of taking payment from the buyers/ aggregators

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain the data of harvested fish in reports
- GS2.** prepare contact lists of local buyers and aggregators to supply fish
- GS3.** draft letters in the local language to communicate with the local buyers and authority
- GS4.** read reports on quality parameters and aquaculture written in the local language
- GS5.** discuss the quality and cost of harvested fish with the potential buyers and aggregators
- GS6.** interact with co-workers, suppliers, buyers and aggregators politely
- GS7.** select the right time for harvesting of fish
- GS8.** select the right buyer/ aggregators and market for selling fish
- GS9.** organise suitable transport for transporting fish to the market or buyer
- GS10.** develop rapport with the buyers and aggregators
- GS11.** think through the problem, evaluate the possible solutions and take up optimum / best solutions
- GS12.** identify economically viable and operationally feasible solutions which meet the buyer's needs
- GS13.** check the quality of harvested fish to identify any improvements required
- GS14.** identify opportunities for selling the harvested fish in various regions
- GS15.** identify ways for efficient harvesting of fish

Qualification Pack
Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Harvest the fish</i>	15	28	-	-
PC1. select the appropriate time of harvesting based on the growth of fish	3	4	-	-
PC2. prepare the tools for harvesting	2	3	-	-
PC3. harvest fish in a safe manner without causing them stress and physical damage	2	3	-	-
PC4. discard any dead and damaged fish in an environment-friendly manner	2	3	-	-
PC5. sort and grade the harvested fish	2	5	-	-
PC6. store the harvested fish in suitable conditions, if not sold fresh	2	5	-	-
PC7. maintain the record of harvested fish	2	5	-	-
<i>Market the fish</i>	15	42	-	-
PC8. check the demand and market rate for the harvested fish	2	5	-	-
PC9. identify the potential market/aggregators/buyers of fish	2	5	-	-
PC10. negotiate the price with the buyer	2	6	-	-
PC11. use electronic payment methods for accepting payments such as BHIM UPI, payment apps, e-wallet etc.	3	7	-	-
PC12. pack and transport the harvested fish in good condition	2	7	-	-
PC13. maintain the record of sale	2	5	-	-
PC14. calculate the benefit-cost (B:C) ratio	2	7	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N4948
NOS Name	Harvest and market fish
Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Qualification Pack

AGR/N4918: Ensures safety, hygiene and sanitation practices for culture operations.

Description

This OS unit is about maintaining safety, hygiene and sanitation practices for culture operations.

Scope

This unit/task covers the following:

- Ensure safety measures and upkeep of water bodies used in fish culture
- Maintain personal hygiene and safety
- Maintain health and hygiene of fish at various levels of growth

Elements and Performance Criteria

Ensure safety measures and upkeep of water bodies used in fish culture

To be competent, the user/individual on the job must be able to:

- PC1.** ensure suitable measures for protection of from natural calamities such as flood, protect dyke from erosion or break
- PC2.** ensure protection and prevent escape of the cultured organisms
- PC3.** identify common predators and preying organisms in water bodies
- PC4.** apply suitable methods such as fencing to keep away predators in water bodies to protect fish culture
- PC5.** restrict entry of unauthorized persons into the premises
- PC6.** be fully aware of the dosage, toxicity level and method of application of chemicals / medicines used for fish culture
- PC7.** ensure all chemicals are adequately labelled and stored safely
- PC8.** identify a quarantine area and implement protocols of quarantine

Maintain personal hygiene and safety

To be competent, the user/individual on the job must be able to:

- PC9.** be aware of the possibilities of bacterial (water borne, air borne, formite borne)and other contamination from human handling
- PC10.** apply effective systems and routines to ensure healthy and hygienic conditions during all stages of fish culture including transportation and marketing
- PC11.** ensure that the fish culture premises are constantly monitored/inspected for breaches in the protection provided by health and hygiene measures
- PC12.** undertake basic safety checks before operation of any equipments
- PC13.** pc5. wear protective clothing and gear as and when required and ensure adherence to safety guidelines
- PC14.** report potential hazards to the supervisor immediately
- PC15.** follow standard procedures to deal with accidents and emergency situations

Qualification Pack

PC16. use first aid kit as and when required and provide appropriate treatment in case of any injuries

Maintain health and hygiene of fish at various level of growth

To be competent, the user/individual on the job must be able to:

PC17. ensure maintenance of suitable soil and water quality parameters at all times with frequent tests

PC18. ensure specified feed is provided to organisms at regular intervals and excess feeding is avoided

PC19. carry out regular inspection of organisms for possible presence of parasites, pathogenic infections, any phenotypic disorder, spot, etc. which are usually the signs of ailments or disease outbreak

PC20. ensure all nets, utensils and vessels used are decontaminated and clean

PC21. implement effective security measures for prevention of theft/sabotage

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organizations standards and procedures followed safety, hygiene and sanitation

KU2. personal hygiene and fitness requirements

KU3. job responsibilities/duties for following safety, hygiene and sanitation

KU4. safe methods to use materials and equipment

KU5. housekeeping methods and importance

KU6. safe disposal methods for waste

KU7. methods for minimizing environmental damage

KU8. importance of following health, hygiene and safety standards and the impact of not following the standards

KU9. prevention of infections

KU10. personal hygiene requirement

KU11. method of maintaining safety checklists

KU12. routine physio-chemical testing of water

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read internal information documents sent by internal teams

GS2. read equipment manuals and process documents to understand the equipment operation and process requirement

GS3. record information on water treatment and fertilization of ponds and other important aspects

GS4. effectively communicate with the technicians and labours regarding all important aspects

GS5. handle tasks on a day to basis

Qualification Pack

- GS6.** handle the minor issues in case the manager is not available, report major issues to management
- GS7.** plan and use suitable techniques for the work assigned
- GS8.** plan and prioritize the work based on the instructions received
- GS9.** plan to utilize time and equipment effectively
- GS10.** study the problem and report to concerned authority
- GS11.** immediately follow the instruction to solve the problem
- GS12.** use reasoning skills to identify and resolve basic problems

Qualification Pack
Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure safety measures and upkeep of water bodies used in fish culture</i>	10	28	-	-
PC1. ensure suitable measures for protection of from natural calamities such as flood, protect dyke from erosion or break	2	3	-	-
PC2. ensure protection and prevent escape of the cultured organisms	2	3	-	-
PC3. identify common predators and preying organisms in water bodies	1	3	-	-
PC4. apply suitable methods such as fencing to keep away predators in water bodies to protect fish culture	1	4	-	-
PC5. restrict entry of unauthorized persons into the premises	1	4	-	-
PC6. be fully aware of the dosage, toxicity level and method of application of chemicals / medicines used for fish culture	1	4	-	-
PC7. ensure all chemicals are adequately labelled and stored safely	1	3	-	-
PC8. identify a quarantine area and implement protocols of quarantine	1	4	-	-
<i>Maintain personal hygiene and safety</i>	12	26	-	-
PC9. be aware of the possibilities of bacterial (water borne, air borne, formite borne)and other contamination from human handling	2	3	-	-
PC10. apply effective systems and routines to ensure healthy and hygienic conditions during all stages of fish culture including transportation and marketing	2	3	-	-
PC11. ensure that the fish culture premises are constantly monitored/inspected for breaches in the protection provided by health and hygiene measures	2	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. undertake basic safety checks before operation of any equipments	1	3	-	-
PC13. pc5. wear protective clothing and gear as and when required and ensure adherence to safety guidelines	1	4	-	-
PC14. report potential hazards to the supervisor immediately	1	3	-	-
PC15. follow standard procedures to deal with accidents and emergency situations	2	3	-	-
PC16. use first aid kit as and when required and provide appropriate treatment in case of any injuries	1	4	-	-
<i>Maintain health and hygiene of fish at various level of growth</i>	8	16	-	-
PC17. ensure maintenance of suitable soil and water quality parameters at all times with frequent tests	2	3	-	-
PC18. ensure specified feed is provided to organisms at regular intervals and excess feeding is avoided	2	3	-	-
PC19. carry out regular inspection of organisms for possible presence of parasites, pathogenic infections, any phenotypic disorder, spot, etc. which are usually the signs of ailments or disease outbreak	2	3	-	-
PC20. ensure all nets, utensils and vessels used are decontaminated and clean	1	3	-	-
PC21. implement effective security measures for prevention of theft/sabotage	1	4	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N4918
NOS Name	Ensures safety, hygiene and sanitation practices for culture operations.
Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2016
Next Review Date	19/05/2019
NSQC Clearance Date	03/08/2018

Qualification Pack

AGR/N5015: Perform basic seamanship and navigation activities

Description

This OS unit is about performing basic seamanship and navigation activities like rigging, mooring and lookout activities.

Scope

This unit/task covers the following:

- Perform mooring
- Perform rigging
- Carry out watch keeping activity

Elements and Performance Criteria

Perform mooring

To be competent, the user/individual on the job must be able to:

- PC1.** obtain mooring plan from the in-charge/master
- PC2.** check the condition of messenger, heaving line, stopper and mooring ropes
- PC3.** clean, maintain non-slip mooring deck and keep snap-back zone clear
- PC4.** signal to linesman when sending heaving line ashore as per established signals
- PC5.** lay out mooring rope, prepare heaving line and stopper following necessary precautions
Necessary precautions: arrange one standby spare heaving line; monitor stress of mooring rope; control mooring rope speed when paying out/heaving up; etc.
- PC6.** monitor vessel movement/clearance
- PC7.** make various knots, bends, hitches and whipping on ends of the rope, and various splices of ropes as required
- PC8.** make and fit building grips like the u of the grip
- PC9.** use knotting, splicing and stoppers for rigging
- PC10.** rig and unrig safety nets, rat guards, bosuns chair, pilot ladders, etc. securely
- PC11.** place blocks and tackles on the vessel to secure the fish and equipment during handling operations

Carry out lookout duties

To be competent, the user/individual on the job must be able to:

- PC12.** takeover bridge activity from incumbent after checking the activities to be undertaken
- PC13.** maintain lookout and general surveillance of the vessel
- PC14.** identify changes in environment weather conditions, obstacles in the course and possible collisions while keeping a watch
- PC15.** identify other vessels in operation using automatic identification system (AIS)
- PC16.** identify the sound, light and flag signals pertaining to vessels operations and maneuvers and report

Qualification Pack

- PC17.** assess the values displayed in global positioning system (GPS) and radar and integrate them in the tasks
- PC18.** identify the location of the vessel on a map by reading the latitude and longitude
- PC19.** observe the direction of the vessel's head on a gyro-compass (gyro course) and magnetic compass periodically
- PC20.** observe the waves and swell and estimate the water state as per the beaufort scale
- PC21.** take readings of a thermometer, barometer, hygrometer, etc.
- PC22.** identify navigational lighthouses, buoys and shapes
- PC23.** hoist any combination of flag and signs on the halyards as required
- PC24.** identify different geographies and location, major navigation river routes on the chart
- PC25.** report any sighting and hearing of any sound signals to the on-duty staff
- PC26.** raise alarm and warn about potential emergency situations as per established emergency response procedure
- PC27.** record bridge activity, observations and communicate to authorized personnel
- PC28.** Handover the required details to the reliever

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational procedures and SOPs for tasks at hand, documentation policy and emergency responses, internal communication over network
- KU2.** security and safety procedures to be followed
- KU3.** reporting structure of the organization for escalation of issues
- KU4.** risk and impact of not following defined procedures/work instructions
- KU5.** coding system followed to communicate using flags, hand signals and sound signals
- KU6.** various nautical terms related to navigation hulls, shipside, engine room, etc.
- KU7.** various parts and components of the vessel
- KU8.** different type of vessels used in deep sea fishing
- KU9.** various types of pps and their usage
- KU10.** working knowledge of mooring system, anchors, rope work - making knots, whippings, spicing and making u, shorts splice, long-splice, back-splice and eye splice
- KU11.** how to handle winch and ropes
- KU12.** communication norms including hand signs and messenger
- KU13.** kind of ropes used onboard the vessel
- KU14.** use, maintenance and stowage of natural and synthetic fiber ropes
- KU15.** how to rig and unrig ladders, hoist, rat-guards and gangways
- KU16.** concepts of mooring to buoys and to terminal
- KU17.** various flag signals, sound signals, modes of communication and related norms
- KU18.** how to read navigational charts
- KU19.** flag and sound codes used for deep sea fishing vessel communications
- KU20.** reading ocean currents and waves

Qualification Pack

- KU21.** use of barometer, thermometer, gyro and magnetic compass and hygrometer
- KU22.** reading the latitude and longitude
- KU23.** reading values displayed in GPS and radar
- KU24.** use of AIS (automatic identification system)
- KU25.** beaufort scale for estimating the water state

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write information and communication notes based on observation
- GS2.** prepare damage reports and daily work reports
- GS3.** read written instructions
- GS4.** read various measuring devices
- GS5.** read maps and routes
- GS6.** communicate with officers, in-charge/masters and co-workers
- GS7.** collect information from officers and in-charge/masters
- GS8.** decide based on observation if an obstacle can be avoided or a course
- GS9.** correction is required
- GS10.** identify activities or orders that need to be prioritised as per instructions
- GS11.** maintain punctuality and respond to the queries in a timely manner
- GS12.** prioritize and execute tasks based on instructions
- GS13.** adhere to timelines and instructions
- GS14.** ensure timely circulation of information
- GS15.** prioritize and execute tasks based on instructions
- GS16.** be a team player and achieve joint goals

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform mooring</i>	17	28	-	-
PC1. obtain mooring plan from the in-charge/master	1	2	-	-
PC2. check the condition of messenger, heaving line, stopper and mooring ropes	1	2	-	-
PC3. clean, maintain non-slip mooring deck and keep snap-back zone clear	1	2	-	-
PC4. signal to linesman when sending heaving line ashore as per established signals	2	3	-	-
PC5. lay out mooring rope, prepare heaving line and stopper following necessary precautions Necessary precautions: arrange one standby spare heaving line; monitor stress of mooring rope; control mooring rope speed when paying out/heaving up; etc.	2	3	-	-
PC6. monitor vessel movement/clearance	1	2	-	-
PC7. make various knots, bends, hitches and whipping on ends of the rope, and various splices of ropes as required	2	3	-	-
PC8. make and fit building grips like the u of the grip	2	3	-	-
PC9. use knotting, splicing and stoppers for rigging	2	3	-	-
PC10. rig and unrig safety nets, rat guards, bosuns chair, pilot ladders, etc. securely	2	3	-	-
PC11. place blocks and tackles on the vessel to secure the fish and equipment during handling operations	1	2	-	-
<i>Carry out lookout duties</i>	18	37	-	-
PC12. takeover bridge activity from incumbent after checking the activities to be undertaken	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. maintain lookout and general surveillance of the vessel	1	3	-	-
PC14. identify changes in environment weather conditions, obstacles in the course and possible collisions while keeping a watch	2	3	-	-
PC15. identify other vessels in operation using automatic identification system (AIS)	1	2	-	-
PC16. identify the sound, light and flag signals pertaining to vessels operations and maneuvers and report	1	3	-	-
PC17. assess the values displayed in global positioning system (GPS) and radar and integrate them in the tasks	1	2	-	-
PC18. identify the location of the vessel on a map by reading the latitude and longitude	1	2	-	-
PC19. observe the direction of the vessel's head on a gyro-compass (gyro course) and magnetic compass periodically	1	2	-	-
PC20. observe the waves and swell and estimate the water state as per the beaufort scale	1	2	-	-
PC21. take readings of a thermometer, barometer, hygrometer, etc.	1	2	-	-
PC22. identify navigational lighthouses, buoys and shapes	1	2	-	-
PC23. hoist any combination of flag and signs on the halyards as required	1	2	-	-
PC24. identify different geographies and location, major navigation river routes on the chart	1	2	-	-
PC25. report any sighting and hearing of any sound signals to the on-duty staff	1	2	-	-
PC26. raise alarm and warn about potential emergency situations as per established emergency response procedure	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. record bridge activity, observations and communicate to authorized personnel	1	2	-	-
PC28. Handover the required details to the reliever	1	2	-	-
NOS Total	35	65	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N5015
NOS Name	Perform basic seamanship and navigation activities
Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Capture Fisheries
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/11/2018
Next Review Date	30/11/2021
NSQF Clearance Date	19/12/2018

Qualification Pack

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

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, and where applicable, on the selected elective/option 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 criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N4953.Prepare and install the cage for fish farming	35	65	-	-	100	25
AGR/N4954.Select and maintain fish species in cage culture	30	70	-	-	100	15

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N4949.Maintain the cage during fish culture in cages	35	65	-	-	100	20
AGR/N4948.Harvest and market fish	30	70	-	-	100	25
AGR/N4918.Ensures safety, hygiene and sanitation practices for culture operations.	30	70	-	-	100	15
Total	160	340	-	-	500	100

Optional: 1 Basic Seamanship and Navigation

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N5015.Perform basic seamanship and navigation activities	35	65	-	-	100	15
Total	35	65	0	0	100	15

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
PPE	Personal Protective Equipment

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.