

Model Curriculum

Inland Capture Fisherman cum Primary Processor

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: FISHERIES
OCCUPATION: CAPTURE FISHERIES
REF ID: AGR/Q5003, V1.0
NSQF LEVEL: 4



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

AGRICULTURE SKILL COUNCIL OF INDIA

for the

MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/Qualification Pack: **'Inland Capture Fisherman cum Primary Processor'** QP No. **'AGR/ Q5003 NSQF Level 4'**

Date of Issuance: January 30th, 2018

Valid up to: March 31st, 2021

* Valid up to the next review date of the Qualification Pack



S. S. Anand
Authorised Signatory
(Agriculture Skill Council of India)

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Inland Capture Fisherman cum Primary Processor

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Inland Capture Fisherman cum Primary Processor”, in the “Agriculture & Allied” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Inland Capture Fisherman cum Primary Processor		
Qualification Pack Name & Reference ID.	AGR/Q5003, v1.0		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	No formal education		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> How to prepare for carrying out fishing activities: Choose the fishing method for inland capture fisheries, choose the gear with appropriate mesh according to target species, choose hook and appropriate bait, fabricate nets, select and construct pots and traps suited for the available species, operate motorised and non-motorised vessels, take decisions for day today activity according to weather conditions Carry out capture of fish: Operate the fishing crafts, operate the nets and other fishing gears, locate fish with the help of fish finding devices, navigate with the help of GPS, undertake landing and cleaning of nets, use safety equipment, swim and dive Carry out primary processing and sale of fish: Sort commercially important and non-edible fishes, hygienically handle fin fishes and shellfishes, operate machinery, undertake descaling, fish cutting, evisceration and bleeding, undertake proper icing and storage of fish. Prepare and sell primary fish products Chill and store the fish, freeze the fish, smoke the fish, undertake fish deboning, prepare value added product; learn packaging techniques, identify markets and consumer demand for fishes Ensure safety, hygiene and sanitation practices for capture fisheries Maintain personal hygiene & safety, undertake cleaning of deck, fish holds, crates and utensils, maintain engines and vessel, maintain record and follow Code of conduct for responsible fishing 		

This course encompasses 4 out of 4 Compulsory NOS (National Occupational Standards), 1 out of 1 Optional NOS of “Inland Capture Fisherman cum Primary Processor” Qualification Pack issued by “Agriculture Skill Council of India”.

COMPULSORY NOS:

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 04:00 Corresponding NOS Code Bridge Module	<ul style="list-style-type: none"> Understand general discipline in the class room (Do's & Don'ts) Acquire knowledge about Inland capture fisheries Understand the role of Inland capture fisherman cum primary processor and the progression pathway Understand fish spoilage, causes of spoilage and quality of fish Get acquainted with the Wild Life Protection Act, 1972 Get acquainted with the Environment (Protection) Act, 1986 Familiarize with the Fishing policy, act and regulations Get introduced to various crafts and gears used in inland fishing Identify commercially important freshwater fish and shellfish Get acquainted with commercially important fish and shell fish fauna of freshwater resources 	Laptop, white board, marker, projector Models of various crafts and gears used in inland capture fisheries, preserved specimens of commercially important freshwater fishes and shellfishes
2	Prepare for carrying out fishing activities Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code AGR/N5006	<ul style="list-style-type: none"> Understand different types of fishing methods in inland waters Study of gears used to capture commercially important freshwater fishes. Learn designing and rigging of gears according to availability of aquatic fauna Learn designing of traps and pots Get acquainted with the fishing crafts used in inland waters Study the infrastructure requirement for landing fish: landing centre, auction hall etc. Learn the economics of fishing operation Get acquainted with the relevant environmental parameters- temperature, depth, productivity etc. 	Laptop, white board, marker, projector, Audio-visual aids, Dissection box, Thermometer, lead line, sechii disk, cut models of petrol diesel engines, working models of inboard and out board engines, models of traps and pots, various netting materials such as floats, sinkers, ropes and twines, anchors, signals etc. different kinds of hooks, minimum one motorised boat, oars, anchor, ropes ect., small workshop for teaching various knots, net making, net

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	16:00 Corresponding NOS Code AGR/N5103	responsible fishing	
	COMPULSORY NOS: Total Duration: Theory Duration (hh:mm) 66:00 Practical Duration (hh:mm) 134:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, computer, motorised vessel, GPS, VHF, Echo sounder (Fish finding device), thermometer, sechii disc, lead line, models of petrol diesel engines, working models of inboard and outboard engines, models of traps and pots, weighing balance	

OPTIONS (Optional to choose any or all or none)

OPTION 1: Prepare and sell primary fish products

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Prepare and sell primary fish products Theory Duration (hh:mm) 12:00 Practical Duration (hh:mm) 28:00 Corresponding NOS Code AGR/N5009	<ul style="list-style-type: none"> • Get acquainted with different types of value added fish products. • Undertake preparation of pickled and marinated fish product. • Undertake preparation of fish mince • Undertake drying such as sun drying, cabinet drying etc. • Undertake smoking of fish • Use deboning machine, salient cutter, meat mincer • Undertake preparation of value added products such as Fish finger, fish cutlet, fish wada, fish shev, fish chakali, fish curry, , etc • Undertake proper packaging and labelling of the products • Identify market and assess consumer demand • Get introduced to various central and state government schemes and bank finance available for processing and marketing of fish 	Laptop, white board, marker, projector, Audio-visual aids, Plate freezer, cold storage, can reforming machine, flanging machine, double seaming machine, retort, labelling machine, kiln, cabinet dryer, solar tent dryer, deboning machine, meat mincer, Vacuum Packaging machine
	OPTION 1 : Total Duration Theory Duration 12:00 Practical Duration	Unique Equipment Required: Laptop, white board, marker, projector, Fish cutting machines, Modified Atmospheric Packaging machines, Vacuum packaging machine, weighing balance of various types, insulated boxes, Plate freezer, cold storage, can reforming machine, flanging machine, double seaming machine, retort, labelling machine, kiln,	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	28:00	cabinet dryer, solar tent dryer, deboning machine and meat mincer	

	<p>GRAND Total Duration</p> <p>Minimum Duration for the QP= 200 hrs Theory: 66 hrs Practical: 134 hrs</p> <p>Maximum Duration for the QP= 240 hrs Theory: 78 hrs Practical: 162 hrs</p>	<p>Unique Equipment Required for the QP:</p> <p>Laptop, white board, marker, projector, Audio-visual aids, computer, motorised vessel, GPS, VHF, Echo sounder (Fish finding device), thermometer, sechii disc, lead line, models of petrol diesel engines, working models of inboard and outboard engines, models of traps and pots, weighing balance, Fish cutting machines, Modified Atmospheric Packaging machines, Vacuum packaging machine, insulated boxes, Plate freezer, cold storage, can reforming machine, flanging machine, double seaming machine, retort, labeling machine, kiln, cabinet dryer, solar tent dryer, deboning machine and meat mincer</p>	
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(This syllabus/ curriculum has been approved by [Agriculture Skill Council of India](#))

Trainer Prerequisites for Job role: “Inland Capture Fisherman cum Primary Processor” mapped to Qualification Pack: “AGR/Q5003, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – Fishing methods, icing & storage of fish, pre-processing, hygiene & cleaning, preparation of value added products, marketing, use of life saving devices,
2	Personal Attributes	Trainer should be Subject Matter Expert. He/ she should have good communication, leadership, observation and practical oriented skills.
3	Minimum Educational Qualifications	Diploma in Fisheries
4a	Domain Certification	Certified for Job Role: “ <u>Inland Capture Fisherman cum Primary Processor</u> ” mapped to QP: “ <u>AGR/Q5003 v1.0</u> ”. Minimum accepted score is 80%.
4b	Platform Certification	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “ <u>MEP/Q0102</u> ”. Minimum accepted % as per respective SSC guidelines is 80%.
5	Experience	<ul style="list-style-type: none"> • B . F. Sc/ M.F.Sc./ M.Sc. in Marine Biology/ Industrial Fisheries/ Mariculture • B. Sc (Fisheries)/M.Sc. Zoology with 1 year of relevant work experience • B. Sc. Zoology with 2 years of relevant work experience • Diploma (more than 12 months) in fisheries with 3 years of relevant work experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Inland Capture Fisherman cum Primary Processor
Qualification Pack	AGR/Q5003, v1.0
Sector Skill Council	Agriculture Skill Council of India

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. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 60% in aggregate
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessment outcomes	Assessment criteria for outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. AGR/N5006 Prepare for carrying out fishing activities	PC1. choose appropriate fishing method based on the target species, region and their seasonal availability	100	8	3	5
	PC2. choose type of gear, active or passive, depending on target species		7	2	5
	PC3. determine the hook size, type of bait according to the target species		7	2	5
	PC4. choose traps according to mesh size and target species		7	2	5
	PC5. pick the mesh size according to the size of the target species		7	2	5
	PC6. decide on an appropriate fishing method		7	2	5
	PC7. decide on the craft to be used for fishing		7	2	5
	PC8. operate motorized and non-motorized boats		7	2	5
	PC9. prepare the fishing gear such as nets, pots, traps etc. for the day's fishing		7	2	5
	PC10. ensure the weather condition is suitable for fishing		7	2	5
	PC11. obtain the required fishing permits and licenses as per regulations		7	2	5
	PC12. be aware of the natural habitat of the fish and foraging grounds		7	2	5
	PC13. monitor the feeding and breeding habits of the target species and identify the optimum time for capture		8	3	5
	PC14. estimate operation costs and other overheads		7	2	5
			100	30	70
2. AGR/N5007 Carry out capture of fish	PC1. operate motorised and non-motorised boats	100	8	2	6
	PC2. locate fish using fish finding equipment		8	2	6
	PC3. operate fishing gear appropriate to the target species		8	2	6
	PC4. land the catch on the boat		8	2	6
	PC5. clean nets after removing fish and keep gear in state of readiness		9	2	7
	PC6. prepare adequately for emergencies		8	3	5
	PC7. ensure safety equipments are ready to use		8	3	5
	PC8. practice caution when fishing in isolation and in deep waters		8	3	5

	PC9. be aware of the ecosystem and its impact		8	3	5
	PC10. identify and avoid banned species, juveniles and other endangered, threatened or protected species		9	2	7
	PC11. capture fish of high commercial value and earn good profits		9	3	6
	PC12. ensure that the value of fish caught exceeds the operating cost involved resulting in profits		9	3	6
			100	30	70
3. AGR/N5008 Carry out primary processing and sale of fish	PC1. identify all commercially viable species as well as the non-edible ones	100	9	3	6
	PC2. sort the captured fish by count, weight and species, and as per market requirements		9	2	7
	PC3. cover, protect them from elements, and chill if possible while proceeding to landing pier		9	3	6
	PC4. land the fish while it is fresh		9	2	7
	PC5. process the fish caught on board either by chilling or degutting, and prepare for sale		9	3	6
	PC6. sort the species according to customer requirements		9	3	6
	PC7. ensure the fish is maintained fresh after the capture till sale		9	2	7
	PC8. transport fish to processing plants or to buyers		9	3	6
	PC9. sell the fish directly by contacting and negotiating with buyers or through a fish auction		9	3	6
	PC10. clean and sanitise the boat and the net thoroughly removing all traces of fish, slime, algae from the net and the boat		9	3	6
	PC11. perform primary processing like chilling with ice, degutting, storing in insulated containers, to preserve freshness at point of sale		10	3	7
			100	30	70
3. AGR/N5103 Ensure safety, hygiene and sanitation practices for capture fisheries and fishing assistance	PC1. use safe working and emergency procedures of all machinery used, their controls and limitations	100	7	2	5
	PC2. update self with areas such as seamanship, rope work, working with nets and other onboard fishing equipment, all life saving and firefighting equipment on board, their uses and applications		7	2	5
	PC3. monitor pollution laws related to the disposal of fish, fisheries management laws related to fishing methods and gear, conservation laws related to banned species		7	2	5
	PC4. ensure adherence to safe operation of all fishing electronic equipments		7	2	5
	PC5. monitor international regulations for preventing collisions pertaining to fishing boats, and the CRZ pertaining		7	2	5

	to inshore areas				
	PC6. update self with underwater dangers along the fishing route		6	2	4
	PC7. predict close quarter situations with other boats/ships well in advance		6	2	4
	PC8. apply emergency measures during rough weather		6	2	4
	PC9. demonstrate signals to exhibit while fishing		6	2	4
	PC10. identify poisonous creatures that come up with the catch and dispose of them safely		7	2	5
	PC11. carry out use of all personal life saving equipment on board, as and when required		7	2	5
	PC12. monitor the effect of bacteria on fish, rate of decomposition, how and why gutting prolongs freshness, importance of chilling quickly		7	2	5
	PC13. handle fish without bruising it, store without crushing and in a hygienic manner		6	2	4
	PC14. update self with knowledge of risks, dangers and limitations of fishing in the sea and other water bodies		7	2	5
	PC15. ensure the assistance provided can withstand the rigors of the sea and other water bodies and does not endanger life or damage machinery		7	2	5
			100	30	70
1. AGR/N5009 Prepare & sell primary fish products	PC1. perform organoleptic evaluation of the capture	100	5	1	4
	PC2. adhere to hygienic handling practices		4	1	3
	PC3. undertake proper chilling methods		4	1	3
	PC4. undertake proper freezing methods		4	1	3
	PC5. undertake proper drying practices		4	1	3
	PC6. undertake salting/curing of the raw material		4	1	3
	PC7. undertake proper smoking methods		4	1	3
	PC8. undertake basic functions associated with canning		5	2	3
	PC9. operate the meat bone separator and associated machineries		4	1	3
	PC10. prepare various product series from fish mince		5	2	3
	PC11. undertake hygienic preparation of pickles from fish and shellfish		5	2	3
	PC12. prepare various product series from fish mince		5	2	3
	PC13. prepare marinated fish and shellfish products		4	1	3
	PC14. prepare ready to eat fish and shell fish curries in accordance with the delicacy of consumers		5	2	3
	PC15. do long term storage of fish and fishery products through drying		4	1	3
	PC16. select appropriate packing materials based on the product specifications		5	2	3

	PC17. get acquainted with vacuum packaging technology of the products		4	1	3
	PC18. get acquainted with modified atmospheric packaging of the products		4	1	3
	PC19. undertake proper labelling of the products in accordance with the industry standards		5	2	3
	PC20. ensure minimum post-harvest losses in the entire process		4	1	3
	PC21. adhere to GMP, SSOP, GHP and HACCP norms		4	1	3
	PC22. establish micro-units post analyzing benefit : cost ratio		4	1	3
	PC23. develop marketing channels through entrepreneurship		4	1	3
			100	30	70