सत्यमेव जयते

CIFNET

Results Framework Document (RFD)
2021-22

Central Institute of Fisheries Nautical & Engineering Training (CIFNET)
केंद्रीय मत्स्य नौचालन एवं इंजीनियरी प्रशिक्षण संस्थान (सिफनेट)
Fine Arts Avenue, Kochi-682016, Kerala
फाईन आर्ट्स एवन्यू, कोच्ची- 682 016

Ministry of Fisheries, Animal Husbandry and Dairying (Department of Fisheries)
मत्स्यपालन, पशुपालन और डेयरी मंत्रालय (मत्स्यपालन विभाग)

Results Framework Document (RFD)

For

Central Institute of Fisheries Nautical and Engineering Training (CIFNET), Kochi-16

2021-2022

Section: 1
Vision, Mission, Objectives and Functions

Vision

To produce trained national manpower of International Standards to man deep sea fishing vessels for viable, eco-friendly, energy efficient, sustainable fisheries in Indian Exclusive Economic Zone and International waters, and to address any technical eventualities in fishing, Nautical and Marine Engineering fields.

Mission

To transform robust and adventurous aspirants into a erudite Ocean going versatile fishing work-force by meeting the training requirement of technical and certified personnel such as Skippers, Mates, Engineers, Engine Drivers of Fishing Vessels as stipulated in the Merchant Shipping Act(1987).with cascading effect in boosting Marine food Security, Employment, Replenish Nutritive health, and Economy through Sustainable development of the fisheries sector of the country.

Objectives

- To create technical manpower for the operation of Ocean going fishing vessels and to run infrastructural establishments
- To create trained manpower to manage fishery establishment.
- To provide training for technical teachers for manning the fishermen training centers attached to Maritime States and Union Territories.
- The institute has also expanded its mandate for training the fishermen of the coastal states and Union territories through capacity building training programme under Blue revolution / Pradhan Mantri Matya Sampada Yojana (PMMSY).
- Provide technical consultancy service in fisheries, Nautical and Marine Engineering with special reference to technical manpower.
- To conduct studies on fishing craft, fishing gears and equipments and provide extensive training to accelerate advancement in fishing technology for enhancing productivity of fishermen and increasing marine fish production.
- To help developing nations in the South-east Asian, Middle east and African regions to create technical manpower for development of Marine Fisheries requirements.

Functions

Training

- Imparting training in two NCVT trade courses viz., Vessel Navigator Course(VNC) and Marine Fitter Course (MFC) affiliated to DGET at all the 3 centres of CIFNET i.e, Kochi, Chennai and Visakhapatnam.
- Offering 4 year BFSc (Nautical Science) course affiliated to CUSAT at CIFNET, Kochi.
- Tutoring Statutory and Refresher Courses for the candidates appearing for Mate and Skipper II examination with MMD.
- Teaching Ancillary courses.
- Conducting capacity building training programme for the fishermen.
- Conducting various short term courses on Fisheries, Navigation and Marine Engineering to sister organisations and College students.

Resources

Fishery Training Vessel Operation

The Institute is equipped with 3 fishery training vessels one each at its 3 centres and conducts regular sailing programmes for imparting on-board practical training in fisheries, navigation and marine engineering to Institutional and Post Institutional trainees and short term course students.

Workshops and laboratory

The Institute HQ at Kochi is well equipped with marine engineering workshop, Hydraulic, pneumatic, refrigeration and heat engine Labs. The institute is also endowed with Fishing gear fabrication & repair shop, Electrical, Electronics, Computer Labs, Navigation chart hall and library. Modern facilities like Engine room simulator and Navigation simulator have also been established. For on board practical training, a fishery training vessel, M.V Prashikshani of 34 m length (OAL) is attached with the Institute.

Navigation Division

The Department of Nautical Science has well equipped facilities at all three centres of CIFNET for imparting training in Seamanship, Navigation, Marine Meteorology and Oceanography and provided with excellent visual aids for on shore training. For practical demonstrations, the division is well equipped with Life saving appliances such as life raft, life jacket, lifebuoy, EPIRB, SART etc. and Fire fighting appliances such as fire extinguishers, firehose, nozzle, ISC etc. Various navigational equipments such as magnetic compass, marine sextant, pelorus, azimuth mirror etc for practical demonstration. The division possesses an exclusive chart hall and facilities for navigation chart practice. The new Navigation Simulator was launched at CIFNET, Kochi on 30.7.2018.

Fishing Gear Division

All the three Centers are equipped with well-established laboratory facilities with fishing gear and craft models for undertaking practical training in fishing gear materials, design and repairs. At CIFNET HQ, Cochin, along with fishing gear hall, the division is facilitated with Biology Lab, Micro Biology and Bio Chemistry Lab and Fish Processing Lab for the conduct of practical classes.

Marine Engineering Division

The Marine Engineering Division in all three centres of CIFNET is well equipped with Marine Engineering Workshop, Marine Engineering Laboratory, Electrical Lab, Electronics Lab and Carpentry Section for practical classes. The division at CIFNET Head quarters is also equipped with Heat Engine Lab Pneumatic Lab Refrigeration Lab, Hydraulics Lab and Engine room simulator.

Other Facilities

Section: 2
Inter se Priorities among Key Objectives, Success indicators and Targets

Column 1	Column 2	Column 3	Column 4		Column 5	Column 6					
Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value					
						Target	Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1. Training Programmes	50	Degree Course-BFSc(NS)	No.of candidates undergoing training	Nos	15	**142**	142	128	114	99	85
		NCVT Courses		Nos	15	**240**	240	216	192	168	144
		Short term & Extension Courses		Nos	10	**1000**	1000	900	800	700	600
		Statutory & Refresher Course		Nos	7	**10**	10	9	8	7	6
		Ancillary Courses		Nos	3	**10**	10	9	8	7	6
2. Training Vessel Operation Conducting sailing of vessels for imparting practical training	50	Institutional Trainee Days	No. of candidates sailing onboard	Nos.	15	**1500**	1500	1350	1200	1050	900
		Days Out at sea	Sailing days	Nos.	10	**400**	400	360	320	280	240
		Fishing Days	Fishing days	Nos	10	**300**	300	270	240	210	180
		Post institutional Trainee days	No. of candidates sailing onboard	Nos	9	**2750**	2750	2475	2200	1925	1650
		Fishing Effort(Hrs)	Fishing hours	Hrs	2	**1100**	1100	990	880	770	660
		Fishing Effort(Hooks)*	No. of hooks	Nos	2	**5000**	5000	4500	4000	3500	3000
		Catch(Tonnes)	Quantity of fish caught	Tonnes	2	**15**	15	14	12	11	9

Section: 3
Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 18-19	Actual Value for FY 19-20	Actual Value for FY 20-21	* Projected Value for FY 21-22	Projected Value for FY 22-23
1 Training Programmes	Degree Course-BFSc(NS)	No. of candidates undergoing training	Nos.	98	111	125	149	156
	NCVT Courses	No. of candidates undergoing training	Nos.	180	226	217	240	240
	Short term & Extension Courses	No. of candidates undergoing training	Nos.	1637	1388	661	700	1200
	Statutory & Refresher Course	No. of candidates undergoing training	Nos.	1	4	1	10	10
	Ancillary Courses	No. of candidates undergoing training	Nos.	0	8	7	10	10
2 Training in Vessel Operation** Conducting sailing of vessel for imparting practical training	Institutional Trainee Days	No. of candidates sailing onboard	Nos.	3453	2556	1620	1500	2500
	Days Out at sea	Sailing days	Nos.	462	462	410	350	350
	Fishing Days	Fishing days	Nos	349	345	345	275	275
	Post institutional Trainee days	No. of candidates sailing onboard	Nos	3874	3630	3531	2750	2750
	Fishing Effort (Hrs)	Fishing hours	Hrs	1200	1153	1148	1000	1000
	Fishing Effort (Hooks)	No. of hooks	Nos	4645	5089	5135	4000	4000
	Catch(Tones)	Quantity of fish caught	tones	17.5	12.2	19.309	12	12

* The targets on the action points FY 21-22 is fixed considering the Covid -19 situations and the restrictions .

** Out of three training vessels, two training vessels are due for dry-docking for a minimum of five-month period each in 2021-202

Section: 4
Description and Definition of Success Indicators and Proposed Measurement Methodology

Sl. No	Success Indicator	Definition	Description	Measurement	General Comments
1.	No. of candidates undergoing NCVT Courses 1.Vessel Navigator Course (VNC) 2.Marine Fitter Course (MFC)	It is one of the key performance indicator in meeting the training requirement of technical and certified personnel to man deep sea Fishing vessels	It is one of the key performance indicator in meeting the training requirement of technical and certified personnel such as Skippers, Mates, Engineers, Engine Drivers of Fishing Vessels as stipulated in the Merchant Shipping Act(1987). Trainees are granted stipend during the training **Course Element** 1 Professional Skill (Trade Practical) 2 Professional Knowledge (Trade Theory) 3 Workshop Calculation & Science 4 Engineering Drawing 5 Employability Skills 6 Library & Extracurricular Activities **Common subjects for VNC & MFC** 1. General English, 2. Applied Mathematics 3. Employability skills. **Disciplines of VNC**, 1. Fishing Gear Materials, Accessories and Design 2. Seamanship, Safety and Watch Keeping. 3. Elementary Marine Engineering 4. Naval Architecture & Ship Construction 5. Fishing Technique 6. Marine fisheries, Fish Processing & Fish Finding Equipments. 7. Practical Navigation 8. Marine Meteorology and Basic principles of Oceanography 9. Chart work -**Practical** 10. Fishing gear –**Practical** 11. Seamanship and Navigation –**Viva Voce** 12. Fishing Gear Technology -**Viva Voce** 13. Navigational aspects and Fisheries **ON-BOARD TRAINING** 14. Navigational aspects and Fisheries –On-board Training- **Report** **Disciplines of MFC** 1. Marine Engines. 2. Workshop Technology 3. Engineering Drawing. 4. Marine Electrical Technology. 5. Basic electronics & Instrumentation. 6. General Engineering Knowledge 7. Naval Architecture and Ship Construction 8. Machine Drawing 9. Hydraulics and deck Machineries 10 Fishing Technology 11. Seamanship and Navigation 12. Heat Engines and Refrigeration 13 Workshop -**Practical - I** 14. Workshop -**Practical and viva Voce-II** 15. All Engineering system Operation & Maintenance **ON-BOARD PRACTICAL TRAINING** 16. Operation, trouble shooting & Maintenance of Marine Engines, auxiliaries and other machineries & Equipments **Report** With the above mention, spectrum of need based assorted subjects, synchronized with practicals and on-board practicals on fishing vessels for two years, trainees are metamorphosed and made to attain pinnacles of professionalism and are moulded to face challenges of deep-sea environment in their fishing endeavors.	No.	VNC trainees requires 90 days sea service for appearing certificate of competency (COC) Mate of fishing vessel Examination and MFC trainees require 270 Engine propulsion days with 180 days apprentice fitter training for appearing certificate of competency (COC) Engine Driver of fishing vessel Examination conducted by Mercantile Marine Department.

<table>
<tr><th>Sl. No</th><th>Success Indicator</th><th>Definition</th><th colspan="2">Description</th><th>Measurement</th><th>General Comments</th></tr>
<tr><td rowspan="4">2</td><td rowspan="4">No. of candidates undergoing training in Degree Course-B.F.Sc(NS)</td><td rowspan="4">It is one of the key performance indicator in meeting the training requirement of Mate of fishing vessel</td><td colspan="2">It is one of the key performance indicators. This Degree course is of four years duration and is affiliated to Cochin University of Science & Technology. Semester wise subjects are</td><td rowspan="4">No.</td><td rowspan="4">With 6 months sea service they need to appear only viva voice exam of Certificate of competency Mate of fishing vessel with basic modular course under STCW 95, students are eligible to get Indian CDC With this degree they can adore various posts in state and union territory fishery Departments. It is a Spring board for higher education and research and to chose pedagogue and scientific professions</td></tr>
<tr><td>SEMESTER I
CIF 1101, Marine meteorology
CIF 1102, Fishing gear technology
CIF 1103, Safety, seamansh0ip, watch keeping and stability
CIF 1104, Introduction to fishing gear design and fabrication
CIF 1105, Structural and communicative english
CIF 1106, General mathematics
CIF 1107, Swimming (practical)
CIF 1108, Library / computer (nc)</td><td>SEMESTER II
CIF 1201, Fish preservation technique
CIF 1202, Fishing gear materials & accessories
CIF 1203, Navigational aids & gmdss
CIF 1204, Onboard training- nautical and fishing (practical)
CIF 1205, Commercial fishing methods & deck lay out
CIF 1206, Design of commercial fishing gears
CIF 1207, Physical education and first aid training
CIF 1208, Library / computer (nc)</td></tr>
<tr><td>SEMESTER III
CIF 1301, Taxonomy of fin fishes
CIF 1302, Marine biology
CIF 1303, Marine engineering
CIF 1304, Chart work and passage planning
CIF 1305, Limnology
CIF 1306, Chart work and passage planning (practical)
CIF 1307, Fundamentals of biochemistry
CIF 1308, Inland fisheries
CIF 1309, Marine electronics & electricaltechnology</td><td>SEMESTER IV
CIF 1401, Principles of aquaculture
CIF 1402, Taxonomy of shell fishes
CIF 1403, Practical navigation
CIF 1404, Fundamentals of microbiology
CIF 1405, Anatomy and biology of fin fishes
CIF 1406, Fish nutrition and feed technology
CIF 1407, Physical oceanography
CIF 1408, Refrigeration and freezing technique
CIF 1409, Fish in nutrition & food chemistry</td></tr>
<tr><td>SEMESTER V
CIF 1501, Fin fish breeding and hatchery management
CIF 1502, Fresh water aquaculture
CIF 1503, Marine fisheries
CIF 1504, Ship construction, hindship problems and cargo works
CIF 1505, Naval architecture
CIF 1506, Microbial and parasitic disease of fin fish and shell fish
CIF 1507, Fish food organisms
CIF 1508, Genetics and fish breeding
CIF 1509, Anatomy and biology of shell fishes</td><td>SEMESTER VI
CIF 1601, Fisheries policy and law
CIF 1602, Fish population dynamics and stock assessment
CIF 1603, Shell fish breeding and hatchery management
CIF 1604, Fisheries extension
CIF 1605, Fisheries statistics
CIF 1606, Coastal aquaculture and mariculture
CIF 1607, Seamanship and navigation
CIF 1608, Aquatic ecology & biodiversity
CIF 1609, Fish products & value addition</td></tr>
</table>

			SEMESTER VII **CIF 1701,** Quality assurance of fish and fishery products **CIF 1702,** Fleet management and harbour engineering **CIF 1703,** Fisheries economics **CIF 1704 ,** Coastal zone management and marine pollution **(elective)** **CIF 1705,** Aquaculture engineering **(elective)** **CIF 1706,** Ship operation technology **CIF 1707 ,** Fish by-products & waste utilization **CIF 1708,** Fish products, byproducts & value addition (practicals) **CIF 1709,** Ornamental fish production and management **CIF 1710,** Biotechnology and bio informatics in fisheries **CIF 1711,** Onboard training – nautical and fishing (practical)	SEMESTER VIII **CIF 1801,** Project work field visit/ data collection/fisheries /nautical science/engineering/ viva voce		
			With the above mention, gamut of need based in-depth assorted and multidisciplinary subjects, synchronized with practical's and on-board practical's on fishing vessels for four years, students are reinforced with nuance of knowledge and made to garner pinnacles of professionalism in fisheries to make them primed to face challenges of deep-sea environment in their fishing endeavors and in manning the fishing industry of States, Union Territories and private.			

Sl. No	Success Indicator	Definition	Description	Measurement	General Comments
3.	No. of candidates undergoing training in *.Statutory course & Refresher Course	It is one of the key performance indicator in reinforcing knowledge in EFTC and AFTC and to recall of knowledge learned through refresher course	It is one of the key performance indicator bestowed with the responsibility to conduct two statutory courses in 1. The Elementary Fishing Technology course (EFTC) 2. Advanced Fishing Technology Course (AFTC), which are prerequisites for appearing Mate, Skipper-II Fishing vessel examination respectively with MMD refresher course forms platform to recall, reinforce and update aspirants knowledge to appear following examinations with resilience and self-confidence. 1. Mate Fishing Vessel Examination 2. Engine Driver Fishing Vessel Examination. 3. Skipper Grade-II Examination 4. Engineer Fishing Vessel Examination	No.	Widens the horizon of knowledge to advance their professional career *. These courses are need based mandatory courses
4.	No. of candidates undergoing training in Ancillary Courses	It is one of the key performance indicator to man shore establishment	Candidates sponsored by State and Union Territory fisheries departments are trained in Shore Mechanical Course an ancillary course to man shore establishment of Fishery Organizations	No.	Trained manpower will be employed in State & UT Fisheries Private Depts.
5.	No. of candidates undergoing training in Short term course & Extension Courses	It is one of the key performance indicator in skill training and capacity building	It is one of the key performance indicator in disseminating knowledge in fishing, safety navigation, marine electronics equipments and Fishing boat Engineering, Mainly for fishermen, fisheries officials and coast guard commandants .	No.	It kindles them to assimilate their unexplored new frontiers of marine knowledge

5.	No. of days Institutional trainees sailed on-board	It is one of the key performance indicator for providing on-board training in Fisheries, Nautical and Engineering subject	It is one of the key performance indicator for the length of period the trainees of VNC, MFC from three centers and BFSc (NS) students from Kochi center are imparted training in diversified, eco-friendly sustainable fish catching methods and spectrum of hands-on experience in Navigational , Marine Engineering aspect on Mechanised Vessel Prashikshani, Mechanised Vessel Skipper II and Mechanised Vessel Tharangani of Kochi, Chennai and Vishakapatnam centers respectively	No.	Reinforces their theoretical knowledge with Hands-on experience on-board the fishing vessels
6.	No. of Sailing days of the vessels, out at sea	It is one of the key performance indicator it decisively depends on the strength and endurance of the vessel and its crew	It is one of the key performance indicators. It is achieved through coordinated and cooperated diligent venture by the composite team of the institute to keep the vessels in shipshape sailing condition. Its achievements is also linked with favorable oceanic weather conditions devoid of cyclones.	No.	It is the basic component in order to achieve on-board training for institutional and post institutional trainees
7.	No. Fishing days of the vessels	It is one of the key performance indicator linked with period of fishing	It is one of the key performance indicators. It is the period of the fishing usually done from dawn to dusk. It includes preparation for fishing with prerequisites of mending fishing nets, operation, maintenance and rectification of unforeseen glitch of Hydraulics & deck machinery. Operation, maintenance and rectification of out of the blue snag in marine diesel engines, ancillary engines. Conduct of fishing with trawl and longline and navigation with paramount importance to safety of life at sea.	No.	It is usually dawn to dusk on-board fishing activity

Sl. No	Success Indicator	Definition	Description	Measurement	General Comments
8.	No. of days Post Institutional trainees sailed onboard	It is one of the key performance indicators for providing on -board training to Post Institutional trainees in order to acquire Qualifying Sea service requirements of MMD examinations.	It is one of the key performance indicators. The post institutional trainees of Engine Room Assistant and Junior Deck Hands are selected on Tenure basis on grant of stipend and are imparted training in diversified, eco-friendly sustainable fish catching methods and spectrum of hands-on experience in Navigational, Marine Engineering aspect in the M. V. Prashikshani, M.V Skipper II and M.V.Tharangani of Kochi, Chennai and Vishakapatnam centers respectively in order to acquire Qualifying Sea service to appear for Mate and engine Driver fishing vessel.	No.	To Augment and fine tune the professionalism through sustained exercise of on-board practicals to reach the higher helms of arduous and esteemed career
9.	No. of hours spent in fishing effort	It is one of the key performance indicator it estimates the actual duration of the fishing efforts	It is one of the key performance indicators. After completion of the all preparatory activity for fishing by the composite team of Deck and engine crew, the actual time spent in fishing efforts begins with deploying or shooting of any of the following fishing methods. 1.Long longing 2. Trawling In trawling, fish finding equipments like Eco sounder, fish finder and Sonar are deployed. Activity of the fishing effort comes to an end with the hauling of deployed fish net with the fish caught.	Hours	This is the core activity on-board training
10.	Quantity of fish caught in tones	It is one of the key performance indicator for the fish caught	It is one of the key performance indicators. It provides insights into type of fish caught and its quantity and quality and the area of its availability.	Tonnes	Fish catch is the outcome along with training

Section: 5

Specific Performance Requirements from other Departments that are critical for delivering agreed results.

1) Support of Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying for sanctioning of budgetary requirements of the Institute and for Sanctioning and filling up of the staff required.

2) Support from National Fisheries Development Board for funding requirement in capacity building training to the fishermen and skill development.

3) Support from Fishery Survey of India for additional post institutional training requirements.

4) Support from State Fisheries departments of Coastal states for sponsoring the fishermen for training to skill the fishermen from time to time under PMMSY scheme.

5) Support from MMD in inspection and certification of fishing vessels.

Section: 6
Outcomes/Impact of activities of Department/Responsibility Centre (RC)

Sl. No	Outcome/Impact of activities	Jointly responsible for influencing this outcome/impact with the following Departments	Success Indicator	FY 18-19 (Actual)	FY 19-20 (Actual)	FY 20-21 (Actual)	FY 21-22 (Target)	FY 22-23 (Target)
1	**Human resource development through training Programmes**	Department of Employment and Training (DGET) Kochi, Chennai, Hyderabad.	No. of candidates undergoing training in NCVT Courses 1.Vessel Navigator Course 2 Marine Fitter Course	180	226	217	240	240
2		Cochin University of Science and Technology (CUSAT) Kochi Through affiliation	Degree Course-BFSc(NS)	98	111	125	149	156
3			Statutory & Refresher Course	1	4	1	10	10
4			Ancillary Courses	0	8	7	10	10
5			Short term & Extension Courses	1637	1388	661	700	1200
	TOTAL TRAINED			**1916**	**1737**	**1011**		