SELF-STUDY REPORT

for Masters Programme in Fisheries Resource Management

Submitted to

National Agricultural Education Accreditation Board

College of Fisheries

CENTRAL AGRICULTURAL UNIVERSITY, IMPHAL

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6.4.1. Brief history of the degree programme

The fisheries sector in the NE region of India holds an important position in the socio-economic and the cultural context of the people in the region. However, despite the enormous importance and value, the fish resources of North-Eastern states of India are suffering the combined effects of heavy exploitation and, in some cases, environmental degradation. The responsibility for declining fish stocks followed by falling economic returns is also attributed to knowledge gap on methods and techniques on sustainable fisheries and conservation. It is at this context, the Dept. of Fisheries Resource Management established in the College of Fisheries under the Central Agricultural University assumes high significance. In tune with the mandates of the University, The Dept. conducts regular academic lessons to the B.F.Sc and M.F.Sc. students of the College on various topics spanning from Fish taxonomy, biology to dynamics of fish populations and resource assessment as part of their curriculum, and scientific research on diverse topics including species and population diversity, feeding, reproductive and environmental biology, stock assessment and level of exploitation of the fish resources in different water bodies of North east India. Moreover, regular extension trainings are also being conducted within and outside the institution to the fish farmers, line department officials, stake holders and various entrepreneurs of the region with the objectives of fish biodiversity assessment, sustainable fisheries management, conservation of the resources and rural empowerment. The department has been offering "**M.F.Sc. in Fisheries Resource Management**" programme w.e.f. Academic Year 2014-15 (Intake: 5) as per the model PG syllabus of ICAR, New.

The Dept. has been playing a pivotal role in fish biodiversity documentation of the NE region and recently, as part of the ongoing Centre of Excellence in Fisheries and Aquaculture Biotechnology (COE-FAB) a database on fish genetic resources of NE region with taxonomic diversity, distribution, abundance, threats, management and conservation needs of fishes has been developed applying conventional advanced techniques and methods. The department also holds a referral fish museum with 326 finfish and shellfish species which regularly cater the needs of students, researchers and scientists even from various allied institutes. Another remarkable achievement would be a separate barcode museum, where tentatively 310 fish species collected from various aquatic systems of NE India and 273 fishes were systematically identified with conventional and molecular methods were bar-coded and displayed. The Department also pioneered in stock assessment techniques and life history studies of fishes in this region, and database on these

grounds were developed for a dozen of commercially important food and ornamental fish resources of NE India. Fourteen research projects have been successfully completed under the supervision of the faculties of the department and another three projects are in ongoing status.

The research thrust area of the department is more on the need of the region in fish & fisheries resource assessment, conservation and judicious utilization for which more concentration is on taxonomical studies, Food and feeding biology and Improvement of fish stock and reproductive performance through biotechnological tools as well as capacity building of technical manpower/fishers.

Objective of the degree programme

- To produce globally competitive postgraduates in fisheries resource management.
- To promote the advancement of learning and persuasion of research in fisheries sciences.
- To make the postgraduates competent to impart extension services to the stakeholders.
- To meet the requirement of well-trained skilled manpower in the North-Eastern states.
- To facilitate the startups, aqua-entrepreneurship, and also to undertake such other activities as it may deem fit from time to time.

Accomplishments

Many of the scholars are now employed in university, state departments, industry and few pursuing higher studies. A systematic table of the pass-out scholars with their current position is annexed below.

University Faculty	State Department	NGO	Project JRF	Pursuing Ph.D.
-	14	-	2	4

6.4.2. Faculty strength

S. No.	Sanctioned faculty		Faculty in place	Vacant position	Faculty recommended by the ICAR /UGC/VCI/other regulatory bodies
1	Professor	-	-	-	1
2	Associate Professor	1	1	-	2
3	Assistant Professor	3	2	1	3
Total		**4**	**3**	**1**	**6**

6.4.3. Technical and supporting staff

The administrative and accounts supporting staff are centralized in the college and are operating under the direct control of the Dean as part of Dean's office. The dedicated technical staff and supporting staff allotted to the department are as below:

S. No.	Designation	Staff in place
Technical staff		
1	Field cum Laboratory Assistant	2
Supporting staff		
2	Multi-Tasking Staff	1

6.4.4. Classrooms and laboratories

Apart from the common laboratory facilities of the college, departmental laboratory, field and other facilities available for PG research of the department are as under:

S. No.	Name of the Lab / Facility	Major Equipments available/Particulars
1	PG Research Lab	• Bacteriological incubator • Blood cell counter • Electronic balance • Centrifuge • Deep Freezer • Camera Lucida • Hot plate • Heating mantle • Hot air oven • Hot water bath • Lux meter • Microscope • Refrigerator • Rotamental

		• UV-VIS Spectrophotometer • Salinometer • Scale Reader • Dissecting microscope
2	Referral Fish Museum	• The department of Fisheries Resource Management of College of Fisheries holds a referral fish museum with 326 finfish and shellfish species displayed with scientific identifying data, collected from all over India specially covering all the states of NE India covering 322 habitats (23,036 samples) as well as from Indian marine sources.
3	Fish DNA Barcode Museum	• Established of a separate barcode museum with 297 fish species, collected and identified systematically from various aquatic systems of NE India and out of which 162 species were systematically identified with conventional and molecular methods (bar-coded) and displayed.
4	Fish molecular biology Lab	• All modern facilities for fish DNA bar coding

Fig. Referral Fish Museum

6.4.5. Conduct of practical and hands-on training

The department has well established laboratories on Fish taxonomy. Fish physiology, Fish molecular biology and fish Biology to support postgraduate research. A separate PG laboratory is in place which is fully dedicated for student's research purpose only. Additionally, the state-of-

the-art Central laboratory and Molecular biology laboratory facilities setup under the Centre of Excellence (COE) programme supports hands-on practical knowledge to orient the scholar into futuristic research mind-sets. Considering the fact that the department is mostly focused on Biology, Taxonomy, Anatomy, Biosystematics, Population Dynamics and Physiological studies of fishes of NE India to grasp an absolute understanding of the generated data for fisheries development of this region. To assist the practical classes, the department has two laboratory assistants in place.

6.4.6. Supervision of students in PG

Sl. No.	No. of eligible faulty for guidance	Intake capacity	Faculty/Student ratio
1.	3	5	0.6

The department has started the postgraduate programme since 2014. The first batch was awarded during 2016. The number of scholars enrolled for the programme is 05 (05) including the ICAR seats. All faculties in the department have Ph.D. and higher degree and are well qualified and eligible (Annexed below) for guiding the students as per the ICAR norms.

S. No	Name of Faculty	Designation	Qualification	Area of specialization
1	Dr. Mrinal Kanti Datta	Associate Professor & Head	D.F.Sc. (Fisheries), Ph.D.	Fisheries resource management, taxonomy and reproduction & conservation, Biosystematics
2	Dr (Mrs) Pampa Bhattacharjee	Assistant Professor (SS)	M.Sc. (Life science), Ph.D.	Fish Biology and Taxonomy
3	Dr K.V Radhakrishnan	Assistant Professor (SS)	M.Sc., Ph.D., Post Doc. (China)	Fish & shell fish taxonomy, population dynamics, Biosystematics

Sl. No	Name and designation	Post held	Highest qualification received	Teaching/ Work experience (in years)	Honors and awards	No. of students guided (PG/Ph.D. separately)	Publication
1	Dr. Mrinal Kanti Datta	Associate Professor & Head	Ph.D.	>23 years	01	PG-05	Research Papers - 24

2	Dr. (Mrs) Pampa Bhattacharjee Assistant Professor (SS)	Assistant Professor	Ph.D.	>23 years	-	PG-03	Research Paper-25
3	Dr. K.V. Radhakrishnan Assistant Professor (SS)	Assistant Professor	Ph.D., Post Doc. (China)	10 years	03	PG-05	Research Papers -21

List of Students Awarded M.F.Sc. (Fisheries Resource Management) Degree (2016-2020)

S. No.	Name	Title of Thesis	Year
1.	Mr. Ashish Kumar Maurya	Population characteristics and stock assessment of *Anabas testudineus* (bloch, 1792) and *Mystus bleekeri* (Day, 1877) in Rudrasagar lake, Tripura	2016
2.	Mr. Amit Kumar	Application of osteology in taxonomic validation of the species under the genus *Mystus* (Scopoli, 1777) distributed in north-eastern India	2016
3.	Ms. Tako Yame	Taxonomic confirmation of species under the genus Macrobrachium (spence bate, 1868) in north eastern states of India	2016
4.	Mr. Khanindra Bhuyan	Otolith shape analysis for taxonomic validation of the species under the genus *Puntius* (Hamilton, 1822) distributed in north-eastern India	2016
5.	Ms. Sneha Mol George	Mouth Dimension and Architecture in Relation to Food and Feeding Habits of Some Cyprinid Fishes of Tripura	2017
6.	Ms. Anjali Pushp	Molecular Taxonomy and Phylogenetics of Species under the Genus *Osteobrama* Heckel, 1842 in India	2017
7.	Mr. Yogesh Dangal	Validation of Taxonomic Status of the Species under the Genus *Chagunius* (Smith, 1938) in India applying Osteological and Molecular Tools	2017
8.	Mr. Sachin Pandit	Biometric Studies of *Labeo* (Cuvier, 1816) Species from Tripura, India	2018
9.	Mr. Ansuman Panda	Validation of Species under the Genus *Barilius* (Hamilton, 1822) from North Eastern States of	2018

		India through Morphometric Traits and Molecular Tools	
10.	Ms. Kamei Lanthaimeilu	Mouth Dimension of Some Ornamental Fishes in Relation to Their Food and Feeding Habits	2018
11.	Mr. Kamlesh Kumar Yadav	Biosystematic Study of the Genus *Bangana* (Hamilton, 1822) from North-Eastern India	2018
12.	Mr. Sanjenbam Bidyasagar Singh	Taxonomy and Phylogeny of the Cyprinid Fish genus *Neolissochilus* (Rainboth, 1985) from North-Eastern India	2018
13.	Mr. Debashis Jena	Taxonomic Validation of the Species under Family Ambassidae from Northeast India	2019
14.	Ms. Sengbira K. Sangma	Food and Feeding Habits of Some Selected Ornamental Fishes of Tripura in Relation to their Mouth Morphometry	2019
15.	Mr. Lekiningroy Dann	Taxonomic Validation of the Species under the Cyprinid Fish Genus *Schizothorax* Heckel, 1838 from North-Eastern India	2019
16.	Mr. Arun Kumar	Systematic Study of Some Barbs from Tripura	2019
17.	Ms. Rutuparna Sasmal	Stock Discrimination of *Systomus sarana* (Hamilton, 1822) from Different River Systems of North East India	2020
18.	Ms. Suchismita Maharana	Stock Structure Analysis of *Mystus bleekeri* (Day, 1877) in North-Eastern India	2020

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

The passed-out scholars have expressed their satisfaction on the various theoretical as well as research-based work they have rendered during their curricula. The scholars, especially those joining PG programme after completing their UG programme in other universities have been impressed to see the research infrastructure and instrumentations in the department particular and college as a whole. Most of the students joined this department as their first choice and they rendered best result with rendering a college as well as university topper also and also produced high quality research contribution with publication in peer reviewed journal. The existing infrastructures are optimally being utilized for teaching. The resultant graduates have been well received by the professional experts during the interview for selection of faculty, line department officials or NGOs in different states. Most of the students have been well placed. The students

remain in touch and express research experience during the PG program highly useful in addressing the fisheries management field. The inventory and biology related problems of the NE region are mostly undertaken for their dissertation work and have been delivered satisfactorily. The focal area of research includes Fish and shell fish taxonomy, Biology, Biosystematics, Population Dynamics etc.

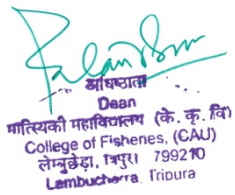
6.4.8. Student intake and attrition in the programme for the last five years

Name of the degree programme	Actual student admitted in the last five years					Attrition (%)				
	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-18	2018-19	2019-20	2020-21
M.F.Sc. (FRM)	05	05	04	05	05	0%	0%	0%	0%	0%

6.4.9. ICT application in curricula delivery

The department has a dedicated classroom with modern tools. Lectures are delivered using computer projected PPTs. ICT application are applied in form of online classes delivered via media like, Skype. Google Meet etc. are taken. Also used to arrange online classes by eminent national and international experts also as online materials for self-preparation as well as for normal preparations and ICAR-NET/ARS examinations.

I, **Prof. Ratan Kumar Saha** the Dean, **College of Fisheries, Lembucherra**, hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date & Seal